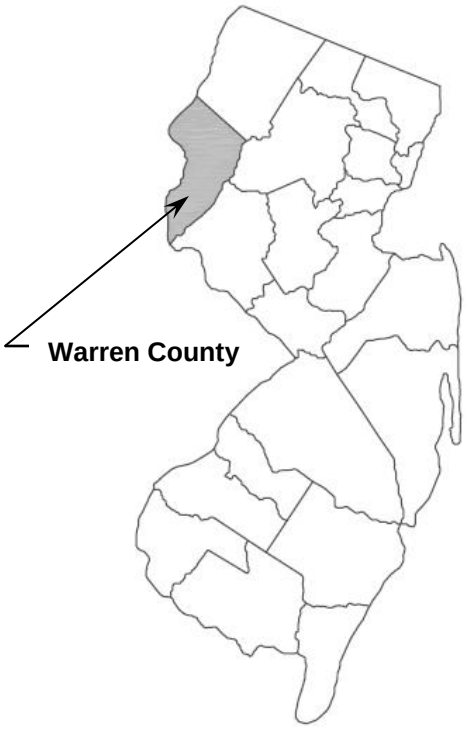
FLOOD INSURANCE STUDY

VOLUME 1 OF 2

WARREN COUNTY, NEW JERSEY
(ALL JURISDICTIONS)

COMMUNITY NAME	COMMUNITY NUMBER
ALLAMUCHY, TOWNSHIP OF	340480
ALPHA, BOROUGH OF	340576
BELVIDERE, TOWN OF	340481
BLAIRSTOWN, TOWNSHIP OF	340482
FRANKLIN, TOWNSHIP OF	340563
FRELINGHUYSEN, TOWNSHIP OF	340564
GREENWICH, TOWNSHIP OF	340483
HACKETTSTOWN, TOWN OF	340484
HARDWICK, TOWNSHIP OF	340528
HARMONY, TOWNSHIP OF	340485
HOPE, TOWNSHIP OF	340486
INDEPENDENCE, TOWNSHIP OF	340487
KNOWLTON, TOWNSHIP OF	340488
LIBERTY, TOWNSHIP OF	340489
LOPATCONG, TOWNSHIP OF	340574
MANSFIELD, TOWNSHIP OF	340491
OXFORD, TOWNSHIP OF	340492
PHILLIPSBURG, TOWN OF	340493
POHATCONG, TOWNSHIP OF	340494
WASHINGTON, BOROUGH OF	340495
WASHINGTON, TOWNSHIP OF	340496
WHITE, TOWNSHIP OF	340497



PRELIMINARY:
AUGUST 31, 2009

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
34041CV001A

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Selected Flood Insurance Rate Map panels for the communities within Warren County contain information that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels (e.g., floodways, cross sections). In addition, former flood hazard zone designations have been changed as follows:

Old Zone	New Zone
A1 through A30	AE
V1 through V30	VE
B	X
C	X

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial Countywide FIS Effective Date:

Revised Countywide FIS Date:

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FLOOD INSURANCE STUDY
WARREN COUNTY, NEW JERSEY (ALL JURISDICTIONS)

1.0 INTRODUCTION

1.1 Purpose of Study

This countywide Flood Insurance Study (FIS) investigates the existence and severity of flood hazards in, or revises and updates previous FISs/Flood Insurance Rate Maps (FIRMs) for the geographic area of Warren County, New Jersey, including: the boroughs of Alpha and Washington; the towns of Belvidere, Hackettstown and Phillipsburg; and the townships of Allamuchy, Blairstown, Franklin, Frelinghuysen, Greenwich, Hardwick, Harmony, Hope, Independence, Knowlton, Liberty, Lopatcong, Mansfield, Oxford, Pohatcong, Washington and White (hereinafter referred to collectively as Warren County).

This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This FIS has developed flood risk data for various areas of the county that will be used to establish actuarial flood insurance rates. This information will also be used by Warren County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and will also be used by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some States or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS was prepared to include all communities within Warren County in a countywide format. Information on the authority and acknowledgments for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown below.

Allamuchy, Township of:	the hydrologic and hydraulic analyses for the FIS dated February 15, 1983 were conducted by Anderson-Nichols & Company under subcontract to the New Jersey Department of Environmental Protection (NJDEP) for the Federal Emergency Management Agency (FEMA) under Contract No. H-3959. The work was completed in January 1981.
Belvidere, Town of:	the hydrologic and hydraulic analyses for the FIS dated June 1979 were prepared by the U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS) for the U.S. Department of Housing and Urban Development, Federal Insurance Administration (FIA) under Inter Agency Agreement No. IAA-H-976, Project Order No. 11. The work was completed in January 1978.
Blairstown, Township of:	the hydrologic and hydraulic analyses for the FIS revised May 2, 1991 were prepared by the SCS in cooperation with NJDEP, Division of Water Resources, during a Flood Plain Management Study. The original analyses for the FIS dated March 1, 1983 were prepared by Richard Browne Associates for FEMA under Contract No. H-6809. The work was completed in May 1982.
Franklin, Township of:	the hydrologic and hydraulic analyses for the FIS dated February 2, 1982 were conducted by Anderson-Nichols & Company under subcontract to NJDEP for FEMA under Contract No. H-3959. The work was completed in June 1980.
Greenwich, Township of:	the hydrologic and hydraulic analyses for the FIS revised May 17, 2004 were prepared by NJDEP and provided to FEMA. The work was completed in December 2002. The original analyses for the FIS dated February 2, 1982 were prepared by NJDEP for FEMA under Contract No. H-3959. The work was completed in November, 1980.
Hackettstown, Town of:	the hydrologic and hydraulic analyses for the FIS dated March 1, 1983 were conducted by Anderson-Nichols & Company under subcontract to NJDEP for the FEMA under Contract No. H-3959. The work was completed in January 1981.
Harmony, Township of:	the hydrologic and hydraulic analyses for the FIS revised June 6, 2001 were prepared by the U.S. Army Corps of Engineers (USACE), Philadelphia District, for FEMA. The work was completed in

June 1996. The original analyses for the FIS dated May 4, 1981 were conducted by Michael Baker, Jr., Inc. under subcontract to NJDEP for FEMA under Contract No. H-3959. The work was completed in August 1978.

Hope, Township of: the hydrologic and hydraulic analyses for the FIS revised August 19, 1991 were prepared by the USDA, SCS during the preparation of a floodplain management study for the Pequest River watershed. The original analyses for the FIS dated March 4, 1983 were prepared by FEMA.

Knowlton, Township of: the hydrologic and hydraulic analyses for the FIS dated July 6, 1982 were prepared by Richard Browne Associates, for FEMA under Contract No. H-6809. The work was completed in February 1981.

Liberty, Township of: the hydrologic and hydraulic analyses for the FIS revised March 14, 1991 were prepared by the USDA, SCS during the preparation of a floodplain management study for the Pequest River watershed. The original analyses for the FIS dated March 18, 1983 were prepared by FEMA.

Lopatcong, Township of: the hydrologic and hydraulic analyses for the FIS dated September 15, 1981 were prepared by NJDEP, Division of Water Resources under agreement with FEMA, and represent a revision of original analyses also conducted by NJDEP. The work was completed in November 1979.

Mansfield, Township of: the hydrologic and hydraulic analyses for the FIS dated March 15, 1983 were conducted by Anderson-Nichols & Company under subcontract to NJDEP for FEMA under Contract No. H-3959. The work was completed in December 1980.

Phillipsburg, Town of: the hydrologic and hydraulic analyses for the FIS revised July 19, 2001 were prepared by USACE, Philadelphia District, for FEMA. The work was completed in June 1996. The original analyses for the FIS dated May 4, 1981 were conducted by Michael Baker, Jr., Inc. under subcontract to NJDEP for FEMA under Contract No. H-3959. The work was completed in August 1978.

Pohatcong, Township of: the hydrologic and hydraulic analyses for the FIS dated March 30, 1991 were conducted by Michael Baker, Jr., Inc under subcontract to NJDEP for

FEMA under Contract No. H-3959. The work was completed in August 1978.

Washington, Borough of: the hydrologic and hydraulic analyses for the FIS dated February 16, 1982 were conducted by Anderson-Nichols & Company under subcontract to NJDEP for FEMA under Contract No. H-3959. The work was completed in March 1980.

Washington, Township of: the hydrologic and hydraulic analyses for the FIS dated March 2, 1982 were conducted by Anderson-Nichols & Company under subcontract to NJDEP for FEMA under Contract No. H-3959. The work was completed in October 1980.

White, Township of: the hydrologic and hydraulic analyses for the FIS dated November 15, 1983 were prepared by Richard Browne Associates, for FEMA under Contract No. H-6809. The work was completed in July 1982.

The authority and acknowledgements for Borough of Alpha and the townships of Frelinghuysen, Hardwick, Independence and Oxford are not available because no FIS reports were published for those communities.

For this countywide FIS, revised hydrologic and hydraulic analyses for the Delaware River were prepared for FEMA by Medina Consultants, P.C. under Contract No. EMN-2003-CO-0005. This work was completed in June 2009.

Digital color infrared (CIR) orthophotography of New Jersey in State Plane NAD83 Coordinates, U.S. Survey Feet was used to create DFIRMs for this revised countywide study (State of New Jersey, 2008). The digital orthophotography was produced at a scale of 1:2400 (1"=200') with a 1 foot pixel resolution. Digital orthophotography combines the image characteristics of a photograph with the geometric qualities of a map. Digital orthophotography is a process which converts aerial photography from an original photo negative to a digital product that has been positionally corrected for camera lens distortion, vertical displacement and variations in aircraft altitude and orientation. Aerial photography of the entire State of New Jersey was captured during 2007. The ortho-rectification process achieved a +/-4.0 ft. horizontal accuracy at a 95% confidence level, National Standard for Spatial Data Accuracy (NSSDA). This dataset consists of 5000' x 5000' files in MrSID format with a 15:1 compression ratio. The files were produced utilizing MrSID Geospatial Edition 1.4 and are approximately 5 MB in size.

The coordinate system used for the production of the digital FIRM is State Plane in the New Jersey State Plane FIPSZone 2900, referenced to the North American Datum of 1983 (NAD 83).

1.3 Coordination

Consultation Coordination Officer's (CCO) meetings may be held for each jurisdiction in this countywide FIS. An initial CCO meeting is held typically with representatives of FEMA, the community, and the study contractor to explain the nature and purpose of a FIS and to identify the streams to be studied by detailed methods. A final CCO meeting is held typically with representatives of FEMA, the community, and the study contractor to review the results of the study.

The dates of the initial and final CCO meetings held for Warren County and the incorporated communities within its boundaries are shown in Table 1, "Initial and Final CCO Meetings."

TABLE 1 – INITIAL AND FINAL CCO MEETINGS

Community	Initial CCO Date	Final CCO Date
Allamuchy, Township of	September 1976	October 14, 1982
Belvidere, Town of	July 26, 1976	November 6, 1978
Blairstown, Township of	October 22, 1987	April 5, 1990
Franklin, Township of	September 1976	September 15, 1981
Greenwich, Township of	September 1976	September 15, 1981
	March 26, 2002 (letter)	May 7, 2003
Hackettstown, Town of	September 1976	October 14, 1982
Harmony, Township of	March 23, 1977	May 20, 1980
		April 19, 1999 (letter)
Hope, Township of	November 8, 1988 (letter)	April 5, 1990
Knowlton, Township of	June 12, 1979	July 15, 1981
Liberty, Township of	December 12, 1988 (letter)	April 5, 1990
Lopatcong, Township of	March 22, 1977	February 5, 1980
Mansfield, Township of	September 1976	October 20, 1982
Phillipsburg, Town of	March 24, 1977	February 5, 1980
	April 19, 1999 (letter)	May 22, 2000
Pohatcong, Township of	March 22, 1977	May 20, 1980
Washington, Borough of	September 1976	June 23, 1981
Washington, Township of	September 1976	October 6, 1981
White, Township of	June 12, 1979	January 28, 1983

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Warren County, New Jersey.

All or portions of the flooding sources listed in Table 2, "Flooding Sources Studied by Detailed Methods," were studied by detailed methods. Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2).

TABLE 2 – FLOODING SOURCES STUDIED BY DETAILED METHODS

Beaver Brook	Merrill Creek (Left Channel)
Blair Creek	Mill Brook
Buckhorn Creek	Montana Brook
Buckhorn Creek Tributary 1	Musconetcong River
Delaware River	Musconetcong River Tributary M-8
Dry Run	Paulins Kill
Hackettstown Brook	Pequest River
Hances Brook	Pohatcong Creek
Honey Run	Pohatcong Creek Tributary 1
Jacksonburg Creek	Shabbecong Creek
Lopatcong Creek	Sigler Creek
Merrill Creek	Trout Brook

Flooding sources studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

Numerous flooding sources in the country were studied by approximate methods. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and Warren County.

Table 3, "Stream Name Changes", lists streams that have names in this countywide FIS other than those used in previously printed FISs for the communities in which they are located.

TABLE 3 – STREAM NAME CHANGES

Community	Old Name	New Name
Harmony, Township of	Tributary 1 to Buckhorn Creek	Buckhorn Creek Tributary 1
Franklin, Township of	Tributary M-8	Musconetcong River Tributary M-8
Pohatcong, Township of	Tributary No. 1 to Pohatcong Creek	Pohatcong Creek Tributary 1

This FIS also incorporates the determinations of letters issued by FEMA resulting in map changes (Letter of Map Revision [LOMR], Letter of Map Revision - based on Fill [LOMR-F], and Letter of Map Amendment [LOMA], as shown in Table 4, "Letters of Map Correction."

TABLE 4 – LETTERS OF MAP CORRECTION

Community	Flooding Source(s) Project Identifier	Date Issued	Type
	None Identified.		

2.2 Community Description

Warren County is located in the northwestern part of New Jersey, adjacent to Sussex County to the northeast, Morris County to the east, Hunterdon County to the southeast and bordered by the Delaware River and State of Pennsylvania entirely to the west. Warren County spans 363 square miles and according to the 2006 census, the population was 110,919. The County seat is the Town of Belvidere. Several major highways span Warren County, including Interstates 78 and 80, U.S. Routes 22 and 46, and State Routes 57, 173, 31 and 94 (County of Warren, Retrieved 2008).

Warren County has primarily a mountainous terrain, and several large waterways, including the Musconetcong River, Pohatcong Creek and Paulins Kill, as well as the Delaware River, which has a total drainage area of over 14,000 square miles. Larger lakes and reservoirs in the County include Merrill Creek Reservoir with an area of 650 acres, Mountain Lake with an area of 122 acres and White Lake with an area of 65 acres (County of Warren, Retrieved 2008).

Warren County has a temperate climate with warm summers and cold winters. The average temperatures range from approximately 28 degrees in January to 73 degrees in July, with extremes common in the summer and winter months. The average precipitation yearly is approximately 47 inches (County of Warren, Retrieved 2008).

2.3 Principal Flood Problems

While flooding in Warren County may occur during any season of the year, the most extensive flooding typically occurs in the late summer and early fall and is associated with tropical storms moving north along the Atlantic coast. Spring storms in concurrence with snowmelt can also cause extensive flooding in the County.

Several severe storms have struck Warren County in the past. The most severe of these storms are described below.

On August 19, 1955, the largest flood on record in the area occurred, causing widespread damage and destruction throughout the Delaware River Basin. A drought was broken several weeks earlier with a large rainstorm, which was followed by Hurricane Connie on August 12 and finally Hurricane Diane on August 15. At USGS Gage No. 01446500 in the Town of Belvidere, a peak discharge of 273,000 cubic feet per seconds (cfs) was recorded, far exceeding the peak estimate of 230,000 cfs associated with the 1%-annual chance event. A stage at the same location of 30.21 feet was also recorded, exceeding the National Weather Service flood stage of 22.0 feet dramatically.

Large storms of record also occurred in August 1971 and January 1979.

Between September 17 and 23, 2004, Tropical Storm Ivan struck the area. Precipitation gages recorded between 4 and 6 inches of rainfall over 24 hours. At USGS Gage No. 01446500 in Belvidere, a peak discharge of 184,000 cfs was recorded, associated with approximately a 70-year recurrence interval. A stage at the same location of 24.83 feet was recorded. The storm was declared a Federal disaster on October 1 (USGS, July 20, 2005).

Between April 2 and 4, 2005, a severe storm struck the area. Rainfall in some areas affected by the storm exceeded 5 inches over the entire duration. At USGS Gage No. 01446500 in Belvidere, a peak discharge of 226,000 cfs was recorded, nearly reaching the 1% annual-chance discharge. The storm was declared a Federal disaster on April 19 (USGS, July 13, 2005).

Between June 28 and 29, 2006, a severe storm struck the area. Rainfall was recorded between 3 and 6.5 inches around the area over the entire duration. At USGS Gage No. 01446500 in Belvidere, a peak discharge of 225,000 cfs was recorded, nearly reaching the 1% annual-chance discharge. The storm was declared a Federal disaster on July 6 (USGS, 2006).

2.4 Flood Protection Measures

There are no structural flood protection measures in Warren County, with the exception of a few small dams and impoundments which do not offer sufficient protection from storms of significance. In an effort to reduce impacts from flooding, the NJDEP, Division of Land Use Regulation (DLUR) has created regulations for development within floodplains. The most recent regulations can be found on the NJDEP website at www.state.nj.us/dep/landuse/se.html.

In 1984, the USACE prepared a report on the Delaware River called Main Stem Delaware River Flood Study (USACE, 1984). The report investigated the existing conditions and the potential mitigation measures, both structural and regulatory, that could be done to alleviate flooding damage and hazards. The report concluded that further study would be needed to evaluate potential measures, so at the time no further action was taken.

Following the flooding in March and April in 2005, Acting New Jersey Governor Richard Codey convened a Flood Mitigation Task Force to again investigate the conditions and possible mitigation alternatives to alleviate the impacts of flooding in New Jersey. In August 2006 a final report was released outlining the findings

and recommendations of that task force, which included increasing buffer areas between regulatory streams and new development, among other stricter floodplain regulations, as well as the development of structural measures with a great benefit to the areas they protect (New Jersey Flood Mitigation Task Force, 2006).

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this FIS. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1-percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the county at the time of completion of this FIS. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for the flooding sources studied in detail affecting the county.

Precountywide Analyses

Each incorporated community within, and the unincorporated areas of, Warren County, with the exception of the Borough of Alpha and townships of Frelinghuysen, Hardwick, Independence and Oxford has a previously printed FIS report. The hydrologic and hydraulic analyses described in those reports have been compiled and are summarized below.

For Beaver Brook, located in the townships of Hope and White, hydrologic data was prepared by the USDA, SCS for inclusion in the 1983 study Flood Plain Management Study, Pequest River Watershed (USDA, 1983). The frequency-discharge values were computed using the TR-20 computed program (USDA, 1965). Land-use data was compiled by remote sensing methods and soil data contained in the soil survey for Warren and Sussex counties. Time-of-concentration (TOC) values were derived in accordance with procedures outlined in Section 4 of the National Engineering Handbook (USDA, 1972). Routing characteristics of local reservoirs were derived using standard hydraulic calculations supplemented by USGS topographic maps at a five-foot contour interval.

For Blair Creek, peak discharge values were taken from the results of the Regional Frequency Study for the Upper Delaware and Hudson River Basins, prepared by the USACE (USACE, 1974). The study performed a regression analysis of several USGS gaging stations to determine drainage area-discharge relationships and frequency curves.

were derived in accordance with procedures outlined in Section 4 of the National Engineering Handbook.

In the Town of Belvidere, peak discharges for the Pequest River were determined using procedures outlined in U.S. Water Resources Council (WRC) Bulletin 17, "Guidelines for Determining Flood Flow Frequency" (WRC, 1976). Based on statistical analyses of three gages along the Pequest River, located in Pequest, Huntsville and Belvidere, relationships between drainage area and peak discharge were regressed for the 10%, 2%, 1% and 0.2% annual-chance flood events. In the townships of Liberty and White, peak discharges were coordinated with the Flood Plain Delineation Study performed by the SCS for NJDEP, utilizing the computed program TR-20.

Peak discharges for the Pohatcong Creek in the Borough of Washington and the townships of Franklin, Greenwich, Mansfield, Pohatcong and Washington were determined using Special Report 38, as were discharges for Pohatcong Creek Tributary 1 in the Township of Pohatcong.

In the Borough and Township of Washington, peak discharges for Shabbecong Creek were determined using Special Report 38. Peak discharges for Sigler Brook in the Township of Franklin were also determined using Special Report 38.

Peak discharges for Trout Brook in the Town of Hackettstown and the Township of Mansfield were determined using Special Report 38.

Revised Analyses

For the Delaware River, the USGS developed flood magnitude and frequency values, including 10%-, 2%-, 1%-, and 0.2%-annual chance floods, for eight active USGS streamflow gaging stations on the main stem of Delaware River. The eight active gages include stations from Trenton, NJ to Callicoon, NY (USGS, 2008). This data was developed in collaboration with USACE Philadelphia District, NJDEP, FEMA Regions II & III and Delaware River Basin Commission (DRBC). The hydrologic analysis was performed in accordance to guidelines published by the Interagency Advisory Committee on Water Data in its Bulletin 17B. This involved the analysis of peak-flow gage data record utilizing the PEAKFQ program. Five additional flow locations were established, between USGS gaging stations, to provide better flow distribution along the main stem. These flow locations are placed in the vicinity of tributaries with significant drainage area contribution. The discharges, including 10%-, 2%-, 1%-, and 0.2%-annual chance floods, were estimated per linear-interpolation of a discharge–frequency relationship as a function of drainage area for the eight active USGS gaging stations. In addition, the New Jersey Flood Hazard Area Design Flood (NJFHADF) was computed for the USGS gaging stations and the additional flow locations. The NJFHADF is equal to the 1% annual-chance flood plus an additional 25% in flow, and not to exceed the 0.2% annual-chance flood. NJFHADF boundary is to regulate disturbance to the land and vegetation within flood hazard area of a water body. This regulation is set forth by the State of New

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A summary of the drainage area-peak discharge relationships for all streams studied by detailed methods is shown in Table 5, "Summary of Discharges."

TABLE 5 – SUMMARY OF DISCHARGES

Flooding Source and Location	Drainage Area (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent	2-Percent	1-Percent	0.2-Percent
BEAVER BROOK					
At confluence with Pequest River	36.20	820	1,350	1,610	2,420
Upstream of Lake Just-It Road	29.09	*	*	1,100	*
Upstream of Fire Dam	18.06	*	*	270	*
BLAIR CREEK					
At confluence with Paulins Kill	10.93	610	1,210	1,575	2,775
BUCKHORN CREEK					
At mouth	11.63	1,860	3,040	3,780	5,970
Downstream of Hutchinson Station Road Bridge	8.36	1,350	2,240	2,800	4,440
At confluence with Buckhorn Creek Tributary 1	5.25	730	1,550	1,950	3,120
BUCKHORN CREEK TRIBUTARY 1					
At mouth	1.71	420	730	920	1,510
DELAWARE RIVER					
At USGS Gage 01438500 at Montague, New Jersey	3,480	127,000	194,000	226,000 / 282,000[1]	308,000
Upstream of confluence of Bush Kill	3,602	130,957	199,276	231,935 / 289,584[1]	315,914
At USGS Gage 01440200 at Delaware Water Gap, Pennsylvania	3,850	139,000	210,000	244,000 / 305,000[1]	332,000
Downstream of confluence of Brodhead Creek	4,146	141,593	212,161	245,728 / 307,161[1]	332,864
At USGS Gage 01446500 at Belvidere, New Jersey	4,535	145,000	215,000	248,000 / 310,000[1]	334,000

[1] Peak discharge calculated for New Jersey Flood Hazard Area Design Flood (NJFHADF) is equal to the 1% annual-chance flow plus an additional 25% in flow, and not to exceed the 0.2% annual-chance flow.

TABLE 5 – SUMMARY OF DISCHARGES - Continued

Flooding Source and Location	Drainage Area (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent	2-Percent	1-Percent	0.2-Percent
DELAWARE RIVER (Continued)					
Upstream of confluence of Lehigh River	4,636	146,239	216,465	249,465 / 311,803[1]	335,352
Downstream of confluence of Lehigh River	6,084	164,006	237,462	270,462 / 337,645[1]	354,734
At USGS Gage 01457500 at Riegelsville, New Jersey	6,328	167,000	241,000	274,000 / 342,000[1]	358,000
Downstream of confluence of Tohickon Creek	6,588	168,150	243,301	277,451 / 346,602[1]	366,053
At USGS Gage 01463500 at Trenton, New Jersey	6,780	169,000	245,000	280,000 / 350,000[1]	372,000
DRY RUN					
At mouth	2.00	400	790	990	1,560
Downstream of railroad bridge	1.50	380	640	800	1,270
HACKETTSTOWN BROOK					
At confluence with Musconetcong River	1.50	370	575	695	975
HANCES BROOK					
At confluence with Musconetcong River	3.80	590	1,012	1,252	1,915
HONEY RUN					
Upstream of Kostenbader Road	9.68	*	*	560	*
JACKSONBURG CREEK					
At confluence with Paulins Kill	8.65	510	1,015	1,325	2,360
LOPATCONG CREEK					
At mouth	14.49	2,670	3,951	4,726	6,673
At Pohatcong Township corporate limits	12.52	2,200	3,291	3,966	5,683

[1] Peak discharge calculated for New Jersey Flood Hazard Area Design Flood (NJFHADF) is equal to the 1% annual-chance flow plus an additional 25% in flow, and not to exceed the 0.2% annual-chance flow.
* Data not available

TABLE 5 – SUMMARY OF DISCHARGES - Continued

Flooding Source and Location	Drainage Area (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent	2-Percent	1-Percent	0.2-Percent
LOPATCONG CREEK (Continued)					
Upstream of U.S. Route 22 Bridge	9.70	1,750	2,830	3,500	5,430
At Harmony Township downstream corporate limits	5.40	1,070	1,770	2,220	3,510
MERRILL CREEK					
At confluence with Pohatcong Creek	3.18	400	630	760	950
Upstream of Straw Church Road	2.25	305	480	575	720
Downstream of confluence of Tributary P-2a	1.40	210	325	390	485
Upstream of confluence of Tributary P-2a	0.73	125	195	235	295
MILL BROOK					
At confluence with Pohatcong Creek	2.50	255	490	640	1,020
MONTANA BROOK					
At confluence with Pohatcong Creek	1.20	140	270	360	570
MUSCONETCONG RIVER					
At Mouth	157.60	3,910	6,600	8,070	12,300
At Mt. Joy Bridge	156.20	3,880	6,560	8,010	12,230
At Willow Lane Bridge	153.90	3,840	6,500	7,930	12,140
At Greenwich Township / Franklin Township corporate limits	143.00	4,010	7,035	8,695	13,625
Upstream of confluence of Musconetcong River Tributary M-8	137.30	3,710	6,465	7,965	12,415
Upstream of Sigler Brook	131.00	3,445	5,960	7,450	11,350
Upstream of Stephensburg Brook	96.00	2,215	3,680	4,455	6,680
Upstream of Hances Brook	92.00	2,055	3,393	4,095	6,140
Upstream of Newburg Road	89.00	1,863	3,049	3,668	5,426
At Hackettstown Town downstream corporate limits	86.00	1,865	3,050	3,670	5,425
Upstream of Trout Brook	81.00	1,715	2,790	3,345	4,915
Upstream of Hackettstown Brook	76.00	1,480	2,370	2,825	4,100

TABLE 5 – SUMMARY OF DISCHARGES - Continued

Flooding Source and Location	Drainage Area (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent	2-Percent	1-Percent	0.2-Percent
MUSCONETCONG RIVER (Continued)					
At USGS Gage 01456000	70.00	1,330	2,110	2,505	3,615
MUSCONETCONG RIVER TRIBUTARY M-8					
At confluence with Musconetcong River	1.80	265	505	665	1,110
PAULINS KILL					
At Vail Road	159.70	4,050	6,460	7,730	11,370
Upstream of Stoney Brook	150.70	3,880	6,195	7,410	10,900
Upstream of Jacksonburg Creek	141.10	3,700	5,900	7,060	10,380
Upstream of Blair Creek	127.50	3,435	5,480	6,560	9,645
PEQUEST RIVER					
At confluence with Delaware River	158.00	2,330	4,020	4,745	6,050
Upstream of U.S. Route 46	86.93	*	*	1,680	*
POHATCONG CREEK					
At mouth	57.03	2,430	4,190	5,170	7,500
At C.R. 519 Bridge	52.70	2,270	3,920	4,840	7,100
At Greenwich Township downstream corporate limits	49.40	2,271	3,920	4,840	7,153
Upstream of confluence with Tributary P-1	46.70	2,135	3,690	4,580	6,775
Upstream of confluence of Merrill Creek	39.70	1,825	3,135	3,890	5,735
Upstream of confluence of Montana Brook	33.40	1,530	2,635	3,275	4,840
Upstream of confluence of Mill Brook	27.40	1,350	2,390	2,965	4,465
Upstream of confluence of Brass Castle Creek	18.30	1,150	2,150	2,700	4,220
Upstream of confluence of Shabbecong Creek	14.60	960	1,820	2,310	3,645
Upstream of confluence of Tributary P-18	10.50	855	1,640	2,085	3,310
Upstream of Hoffman Road	6.80	700	1,345	1,720	2,740
Upstream of Jackson Valley Road	4.70	495	961	1,231	1,976
Upstream of Smith Road	1.80	210	430	555	915

* Data not available

TABLE 5 – SUMMARY OF DISCHARGES - Continued

Flooding Source and Location	Drainage Area (sq. mi.)	PEAK DISCHARGES (cfs) 10-Percent	2-Percent	1-Percent	0.2-Percent
POHATCONG CREEK TRIBUTARY 1					
At mouth	1.62	350	600	623	790
At upstream face of railroad bridge	1.61	350	600	760	1,240
SHABBECONG CREEK					
At confluence with Pohatcong Creek	3.20	350	670	830	1,300
Upstream of S.R. 31	1.90	230	450	560	900
100' downstream of Washington Borough upstream corporate limits	1.00	130	270	340	570
SIGLER BROOK					
At confluence with Musconetcong River	2.00	335	635	835	1,380
TROUT BROOK					
At confluence with Musconetcong River	4.10	800	1,295	1,555	2,275
Downstream of railroad bridge	3.30	690	1,130	1,360	2,005
Upstream of tributary, north of railroad bridge	2.30	585	950	1,165	1,760
Upstream of Charles Street	1.80	465	760	935	1,420

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data Tables in the FIS report. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Precountywide Analyses

For streams studied by detailed methods, water-surface profiles of floods of the selected recurrence intervals were predominantly computed through the use of the USACE HEC-2 step-backwater program (USACE, 1974; 1976; 1991), which is based on the solution of the one-dimensional energy equation. Energy losses are determined between cross-sections with the use of channel roughness factors and the Manning's equation. Cross-sections for the backwater analyses of the streams

studied in detail were field-surveyed and located at close intervals above and below bridges and culverts, in order to compute the significant backwater effects of these structures in highly urbanized areas.

For Beaver Brook in Hope Township, water-surface profiles for the selected recurrence intervals were determined using the SCS computer program WSP-2 (USDA, 1976), which is based on Bernoulli's equation for total energy at each cross-section and Manning's formula for the friction head loss between cross-sections. Starting water service elevations were determined using the slope/area method.

For Blair Creek in the Township of Blairstown, water-surface profiles for the selected recurrence intervals were determined using the HEC-2 step-backwater program. Starting water-surface elevations were calculated using the slope/area method, and the model was calibrated using known high-water elevations.

For Buckhorn Creek and Buckhorn Creek Tributary 1 in the Township of Harmony, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water surface elevations were calculated using the slope/area method.

For Dry Run in the Township of Lopatcong, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Dry Run has a reach with supercritical flow which extends from its confluence with Lopatcong Creek to the railroad bridge, approximately a 4,000-foot stretch. This rapid flow is sometimes highly turbulent in areas with steep slopes. Starting water-surface elevations for Dry Run were determined by the slope/area method.

For Hackettstown Brook in the Town of Hackettstown and Hances Brook in the Township of Mansfield, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were determined using the slope/area method.

For Honey Run in the Township of Hope, hydraulic analysis was obtained form the SCS Flood Plain Management Study, Pequest River Watershed (USDA, September 1983), which determined water-surface profiles for the selected recurrence intervals using the SCS computer program WSP-2. Starting water surface elevations were calculated using the slope/area method.

For Jacksonburg Creek in the Township of Blairstown, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method, and the model was calibrated using known high water marks.

For Lopatcong Creek in the Town of Phillipsburg and the townships of Greenwich, Harmony, Lopatcong and Pohatcong, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method.

For Merrill Creek and Merrill Creek (Left Channel) in the Township of Greenwich, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method.

For Mill Brook and Montana Brook in the Township of Franklin, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method.

For Musconetcong River in the Town of Hackettstown and the townships of Allamuchy, Franklin, Greenwich, Mansfield, Pohatcong and Washington, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations at the mouth of Musconetcong River in Pohatcong Township were determined using the slope/area method. For all other municipalities, starting water-surface elevations were taken from the profiles of the respective downstream municipality. For Musconetcong River Tributary 8 in the Township of Franklin, water-surface profiles for the selected recurrence intervals were determined using HEC-2, and the starting water-surface elevations were calculated using the slope/area method.

The hydraulic analysis for the portion of Paulins Kill below Vail Road was taken from the Flood Plain Management Study, Paulins Kill Watershed, Warren and Sussex Counties, New Jersey (USDA, October 1983). In that study, water-surface profiles for the selected recurrence intervals were computed using the SCS WSP-2 program. Water-surface profiles for the upstream portion of Paulins Kill were determined using HEC-2, and the starting water-surface elevations were calculated using the slope/area method.

For Pequest River in the Town of Belvidere, water-surface profiles for the floods of selected recurrence intervals were determined using the SCS WSP-2 program. Starting water-surface elevations were calculated using the normal depth equation. In the Township of White, profiles for Pequest River were determined using HEC-2. Starting water-surface elevations were determined by assuming coincidental peaks for the Delaware River and Pequest River.

For Pohatcong Creek in the townships of Franklin, Greenwich, Mansfield, Pohatcong and Washington, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations at the mouth of Pohatcong Creek in the Township of Pohatcong were determined using the slope/area method. For all other municipalities, starting water-surface elevations were taken from the profiles of the respective downstream community. In the Township of Pohatcong, water-surface profiles for Pohatcong Creek Tributary 1 were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method.

For Shabbecong Creek in the Borough and Township of Washington, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method.

For Sigler Brook in the Township of Franklin, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method.

For Trout Brook in the Town of Hackettstown and Township of Mansfield, water-surface profiles for the selected recurrence intervals were determined using HEC-2. Starting water-surface elevations were calculated using the slope/area method.

Revised Analyses

For the Delaware, River, cross sections were obtained from two-foot contour data developed from Light Detection and Ranging (LiDAR) data collected in spring 2008 with two-foot contour accuracy. Below-water sections were obtained by field surveys. All bridges, wing dams, and miscellaneous structures were field surveyed to obtain elevation data and structural geometry. As-built drawings provided by Delaware River Joint Toll Bridge Commission were utilized to supplement survey data where needed.

For the Delaware River, water-surface elevations for flood of the selected recurrence intervals were computed through use of the USACE HEC-RAS 4.0 step-backwater computer program (USACE, 2008). The HEC-RAS model was calibrated to the recorded high water mark elevations from the flood event of April 2005 (USGS, 2007). The Manning's "n" values were adjusted within reasonable parameters so that the computed water surface elevations generally matched the recorded high water marks. Comparisons were made with high water mark elevations collected for floods of August 1955 and June 2006. The results were within acceptable limits.

The Delaware River remains under Tidal influence downstream of Trenton, NJ. Starting water-surface elevations were set per tidal conditions established in Bucks County FIS (FEMA, April 2, 2004) and per NJDEP Delineation of Floodway & Flood Hazard Area Maps for the City of Trenton (NJDEP, 1978).

Channel roughness factors, or Manning's "n" values used in the hydraulic computations were assigned on the basis of field reconnaissance and aerial mapping for the streams studied by detailed methods. Manning's "n" values are shown in Table 6, "Manning's 'n' Values."

TABLE 6 – MANNING'S "n" VALUES

Stream	Channel "n"	Overbank "n"
Beaver Creek	0.060-0.090	0.100-0.150
Blair Creek	0.030	0.070
Buckhorn Creek	0.040-0.050	0.070
Buckhorn Creek Tributary 1	0.030-0.050	0.080-0.110
Delaware River	0.020-0.100	0.035-0.100
Hackettstown Brook	0.030-0.040	0.040-0.120
Hances Brook	0.030-0.035	0.040-0.100
Honey Run	0.060	0.150
Jacksonburg Creek	0.030	0.070
Lopatcong Creek	0.012-0.050	0.050-0.120
Merrill Creek	0.012-0.040	0.040-0.110
Merrill Creek (Left Channel)	0.012-0.040	0.040-0.110
Mill Brook	0.035	0.045-0.050
Montana Brook	0.035-0.055	0.040-0.065
Musconetcong River	0.025-0.055	0.030-0.120
Musconetcong River Tributary 8	0.030-0.035	0.060-0.070
Paulins Kill	0.030-0.035	0.070-0.100
Pequest River	0.035-0.100	0.035-0.170
Pohatcong Creek	0.020-0.050	0.035-0.120
Pohatcong Creek Tributary 1	0.013-0.040	0.040-0.080
Shabbecong Creek	0.035-0.050	0.060-0.110
Sigler Brook	0.035	0.045-0.050
Trout Brook	0.030-0.050	0.040-0.100

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood profiles. For stream segments for which a floodway was computed (Section 4.2), selected cross sections are also shown on the FIRM (Exhibit 2).

All elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88).

All qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical and have a vertical stability classification of A, B, or C are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier.

Bench marks cataloged by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)

- Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)

- Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)

- Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

In addition to NSRS bench marks, the FIRM may also show vertical control monuments established by a local jurisdiction; these monuments will be shown on the FIRM with the appropriate designations. Local monuments will only be placed on the FIRM if the community has requested that they be included, and if the monuments meet the aforementioned NSRS inclusion criteria.

To obtain current elevation, description, and/or location information for bench marks shown on the FIRM for this jurisdiction, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their Web site at www.ngs.noaa.gov.

It is important to note that temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with this FIS and FIRM. Interested individuals may contact FEMA to access this data.

3.3 Vertical Datum

All FISs and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum in use for newly created or revised FISs and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD 29). With the finalization of the North American Vertical Datum of 1988 (NAVD 88), many FIS reports and FIRMs are being prepared using NAVD 88 as the referenced vertical datum. The conversion factor used for Warren County is -0.70 feet for conversion from NGVD29 to NAVD88.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD 88.

For more information on NAVD 88, see Converting the National Flood Insurance Program to the North American Vertical Datum of 1988, FEMA Publication FIA-20/June 1992, or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address http://www.ngs.noaa.gov).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS provides 1-percent annual chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent annual chance flood elevations; delineations of the 1- and 0.2-percent annual chance floodplains; and 1-percent annual chance floodway. This information is presented on the FIRM and in many components of the FIS, including Flood Profiles and Floodway Data Tables. Users should reference the data presented in the FIS as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance flood is employed to indicate additional areas of flood risk in the county. For the streams studied in detail, the 1- and 0.2-percent annual chance floodplain boundaries have been delineated using the flood elevations determined at each cross section.

New Jersey Flood Hazard Area Design Flood

The State of New Jersey, Department of Environmental Protection (the Department) is mandated to delineate and regulate flood hazard areas pursuant to N.J.S.A. 58:16A-50 et seq., the Flood Hazard Area Control Act. This Act authorizes the Department to adopt land use regulations for development within the flood hazard areas, to control stream encroachments and to integrate the flood control activities of the municipal, county, State and Federal Governments.

The State's Flood Hazard Area delineations are defined by the New Jersey Flood Hazard Area Design Flood. In 1974, the Water Policy and Supply Council passed a resolution stating that the New Jersey Flood Hazard Area Design Flood shall be equal to a design flood discharge 25 % greater in flow than the 100 year or 1% annual chance flood. In addition, the floodway shall be based on encroachments that produce no more than a 0.2 foot water surface rise above the 100 year or 1% annual chance flood. These flood hazard area delineations must be adopted by the Department.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent annual chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent annual chance flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that

hazardous velocities are not produced. The floodways in this FIS are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this FIS were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain.

Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 7). The computed floodways are shown on the FIRM (Exhibit 2). In cases where the floodway and 1-percent annual chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Portions of the floodways for the Delaware River and Musconetcong River extend beyond the County boundary.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 7, "Floodway Data." In order to reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

The area between the floodway and 1-percent annual chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent annual chance flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

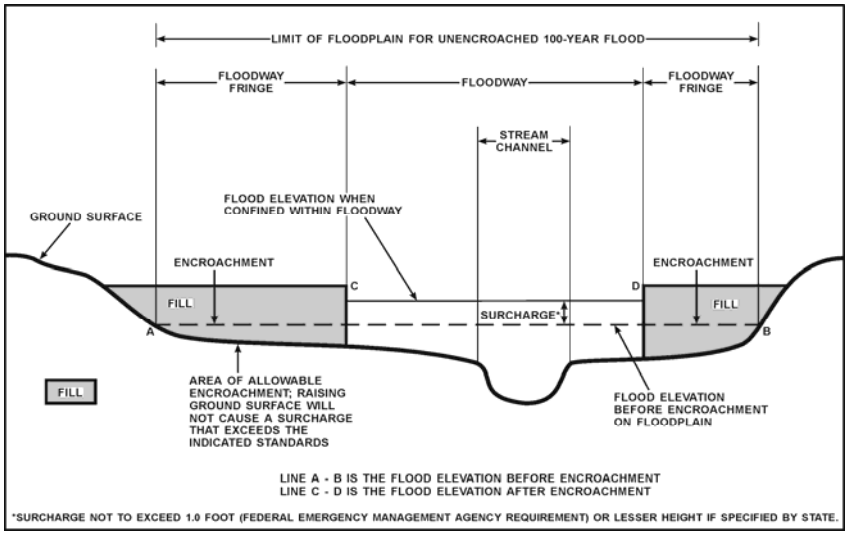

Figure 1 - FLOODWAY SCHEMATIC

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BEAVER BROOK								
A	720	223	890	1.8	304.0	304.0	304.2	0.2
B	1450	73	355	4.5	307.3	307.3	307.5	0.2
C	2000	79	385	4.2	307.7	307.7	307.9	0.2
D	2270	86	381	4.2	312.8	312.8	313.0	0.2
E	3240	196	818	2.0	315.6	315.6	315.8	0.2
F	3540	77	400	4.0	316.6	316.6	316.8	0.2
G	4880	156	697	2.3	319.8	319.8	320.0	0.2
H	6520	229	987	1.6	322.8	322.8	323.0	0.2
I	7210	213	876	1.8	326.8	326.8	326.6	0.2
J	7750	200	1143	1.4	327.0	327.0	327.2	0.2
K	9260	469	1310	1.2	328.7	328.7	328.9	0.2
L	10060	113	564	2.9	331.5	331.5	331.7	0.2
M	10570	70	368	4.4	335.3	335.3	335.5	0.2
N	11960	357	1311	1.0	337.1	337.1	337.3	0.2
O	12650	152	853	1.6	337.6	337.6	337.8	0.2
P	14150	179	919	1.5	339.4	339.4	339.6	0.2
Q	15270	248	718	1.9	342.4	342.4	342.6	0.2
R	16880	104	481	2.8	346.6	346.6	346.8	0.2
S	18270	314	875	1.5	350.5	350.5	350.7	0.2
T	18870	53	292	4.4	352.5	352.5	352.7	0.2
U	19930	92	385	3.3	358.6	358.6	358.8	0.2
V	20970	67	323	3.8	363.7	363.7	363.9	0.2
W	21905	54	291	4.1	368.5	368.5	368.7	0.2
X	22820	74	450	2.6	370.2	370.2	370.4	0.2
Y	24050	293	1076	1.1	370.8	370.8	371.0	0.2
Z	24950	114	562	2.0	371.7	371.7	371.9	0.2

[1] Feet above confluence with Pequest River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

BEAVER BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BEAVER BROOK (CONTINUED)								
AA	25490	109	544	2.0	373.3	373.3	373.5	0.2
AB	25960	81	376	2.9	374.1	374.1	374.3	0.2
AC	26700	283	1192	0.9	375.5	375.5	375.7	0.2
AD	28000	586	2082	0.5	376.6	376.6	376.8	0.2
AE	28835	424	1703	0.6	377.0	377.0	377.2	0.2
AF	29675	302	1265	0.9	377.6	377.6	377.8	0.2
AG	31015	305	1163	0.9	378.2	378.2	378.4	0.2
AH	32995	512	1859	0.6	379.4	379.4	379.6	0.2
AI	34135	676	2023	0.5	380.3	380.3	380.5	0.2
AJ	35455	153	719	1.5	382.6	382.6	382.8	0.2
AK	36145	88	314	3.5	385.3	385.3	385.5	0.2
AL	36545	43	202	5.4	388.0	388.0	388.2	0.2
AM	37415	167	890	1.2	394.7	394.7	394.9	0.2
AN	38265	298	1490	0.7	395.3	395.3	395.5	0.2
AO	41305	345	1328	0.5	396.4	396.4	396.6	0.2
AP	42695	677	1957	0.3	396.7	396.7	396.9	0.2
AO	43655	556	1325	0.5	397.1	397.1	397.9	0.2
AR	44625	361	1066	0.6	397.6	397.6	397.8	0.2
AS	45310	197	783	0.8	398.0	398.0	398.2	0.2
AT	45700	340	936	0.7	399.2	399.2	399.4	0.2
AU	46530	276	756	0.9	399.9	399.9	400.1	0.2
AV	47330	171	303	0.9	400.5	400.5	400.7	0.2
AW	47760	113	182	1.5	401.7	401.7	401.9	0.2
AX	47930	186	254	1.1	402.0	402.0	402.2	0.2
AY	48360	17	66	4.2	405.7	405.7	405.9	0.2

[1] Feet above confluence with Pequest River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

BEAVER BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BEAVER BROOK (CONTINUED)								
AZ	48510[1]	15	52	5.3	407.6	407.6	407.8	0.2
BA	48607[1]	40	204	1.3	409.2	409.2	409.4	0.2
BB	48977[1]	21	83	3.3	410.6	410.6	410.8	0.2
BC	49297[1]	143	156	1.8	414.9	414.9	415.1	0.2
BD	49347[1]	145	195	1.4	415.3	415.3	415.5	0.2
BE	49642[1]	99	555	0.5	420.8	420.8	421.0	0.2
BF	50322[1]	105	524	0.5	420.8	420.8	421.0	0.2
BG	50857[1]	331	1003	0.2	420.8	420.8	421.0	0.2
BH	51597[1]	183	362	1.0	421.3	421.3	421.5	0.2
BI	52817[1]	62	167	1.5	422.0	422.0	422.2	0.2
BJ	53687[1]	35	139	1.7	422.6	422.6	422.8	0.2
BK	54127[1]	90	991	0.2	423.6	423.6	423.8	0.2
BLAIR CREEK								
A	702[2]	69	354	4.4	346.6	346.6	346.8	0.2
B	1275[2]	286	3573	0.4	359.7	359.7	359.7	0.0
C	1715[2]	221	1670	0.9	359.7	359.7	359.7	0.0
D	2370[2]	190	901	1.7	359.9	359.9	360.1	0.2
E	2910[2]	277	1348	1.2	362.5	362.5	362.7	0.2
F	3455[2]	198	548	2.9	364.1	364.1	364.2	0.1
G	4220[2]	60	254	6.2	371.2	371.2	371.3	0.1
H	4275[2]	66	474	3.3	378.7	378.7	378.8	0.1
I	5330[2]	38	142	11.1	388.1	388.1	388.1	0.0

[1] Feet above confluence with Pequest River
[2] Feet above confluence with Paulins Kill

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

BEAVER BROOK – BLAIR CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BUCKHORN CREEK								
A	105	297	719	5.3	225.9	198.0[2]	198.2[2]	0.2
B	765	157	1614	2.3	225.9	216.1[2]	216.2[2]	0.1
C	1295	186	1132	2.5	225.9	219.2[2]	219.2[2]	0.0
D	1650	103	414	6.8	225.9	221.1[2]	221.2[2]	0.1
E	2060	102	415	6.8	226.8	226.8	227.0	0.2
F	2630	99	433	6.5	233.0	233.0	233.2	0.2
G	3460	115	525	5.3	240.3	240.3	240.5	0.2
H	4030	125	389	7.2	246.2	246.2	246.4	0.2
I	4510	122	565	5.0	250.5	250.5	250.6	0.1
J	5225	165	764	3.7	253.8	253..8	254.0	0.2
K	5790	106	696	4.0	265.2	265.2	265.4	0.2
L	6400	77	316	8.8	268.9	268.9	269.0	0.1
M	6825	96	788	3.3	278.1	278.1	278.1	0.0
N	7315	80	519	5.1	278.7	278.7	278.7	0.0
O	7850	73	307	8.6	282.5	282.5	282.6	0.1
P	8200	70	366	7.2	286.8	286.8	286.8	0.0
O	8891	262	1581	1.7	295.3	295.3	295.3	0.0
R	9411	153	880	3.0	295.6	295.6	295.3	0.0
S	9991	170	1026	2.6	296.4	296.4	296.6	0.2
T	10406	272	1327	2.0	296.9	296.9	297.1	0.2
U	10986	474	1622	1.6	299.9	299.9	300.1	0.2
V	11461	106	347	5.6	301.3	301.3	301.5	0.2

[1] Feet above confluence with Delaware River
[2] Elevation computed without consideration of backwater effects from Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

BUCKHORN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BUCKHORN CREEK TRIBUTARY 1								
A	320[1]	319	329	2.8	303.2	303.2	303.4	0.2
B	845[1]	249	382	2.4	308.1	308.1	308.3	0.2
C	1405[1]	91	179	5.1	323.5	323.5	323.7	0.2
D	1985[1]	21	51	17.9	353.4	353.4	353.4	0.0
E	2390[1]	16	40	23.1	392.4	392.4	392.4	0.0
F	2725[1]	18	40	22.8	441.1	441.1	441.1	0.0
G	3205[1]	121	178	5.2	471.2	471.2	471.2	0.0
DELAWARE RIVER								
A	921.3 / 174.48[2]	1333 / 343[3]	26624	10.4	159.3	159.3	159.5	0.2
B	922.4 / 174.69[2]	1119 / 320[3]	27245	10.1	160.9	160.9	161.1	0.2
C	924.0 / 174.99[2]	1080 / 305[3]	26713	10.3	161.7	161.7	161.9	0.2
D	925.5 / 175.28[2]	1544 / 474[3]	39861	6.9	163.6	163.6	163.8	0.2
E	927.0 / 175.56[2]	801 / 274[3]	25574	10.7	163.5	163.5	163.7	0.2
F	928.5 / 175.85[2]	770 / 490[3]	27709	9.9	164.6	164.6	164.8	0.2
G	930.0 / 176.14[2]	673 / 478[3]	21120	13.0	164.8	164.8	165.0	0.2
H	931.5 / 176.42[2]	1065 / 573[3]	31400	8.7	167.4	167.4	167.6	0.2
I	933.1 / 176.71[2]	574 / 250[3]	25366	10.8	167.6	167.6	167.8	0.2
J	934.7 / 177.02[2]	1354 / 396[3]	36587	7.5	169.3	169.3	169.5	0.2
K	936.1 / 177.28[2]	1267 / 719[3]	32083	8.5	169.8	169.8	170.0	0.2
L	937.5 / 177.55[2]	833 / 483[3]	26072	10.5	170.2	170.2	170.4	0.2
M	938.9 / 177.82[2]	796 / 376[3]	23502	11.7	170.8	170.8	171.0	0.2
N	940.5 / 178.12[2]	957 / 592[3]	26759	10.2	172.3	172.3	172.5	0.2
O	942.1 / 178.42[2]	1055 / 862[3]	31567	8.7	173.8	173.8	174.0	0.2

[1] Feet above confluence with Buckhorn Creek
[2] Thousands of feet above mouth / Miles above mouth
[3] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

BUCKHORN CREEK TRIBUTARY 1 – DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DELAWARE RIVER (CONTINUED)								
P	943.6 / 178.70	849 / 500	26162	10.6	174.2	174.2	174.4	0.2
O	945.0 / 178.97	975 / 632	28381	9.7	175.2	175.2	175.4	0.2
R	946.5 / 179.26	1191 / 318	32304	8.5	176.4	176.4	176.6	0.2
S	948.0 / 179.55	1084 / 557	33853	8.1	177.3	177.3	177.5	0.2
T	949.5 / 179.82	797 / 446	24997	11.0	177.4	177.4	177.6	0.2
U	951.0 / 180.11	734 / 383	25011	11.0	178.4	178.4	178.6	0.2
V	952.5 / 180.40	687 / 319	22703	12.1	179.1	179.1	179.3	0.2
W	954.0 / 180.68	935 / 480	29341	9.3	181.1	181.1	181.3	0.2
X	955.7 / 180.99	645 / 301	20714	13.2	181.2	181.2	181.4	0.2
Y	957.4 / 181.32	667 / 348	21684	12.6	183.9	183.9	184.1	0.2
Z	959.9 / 181.80	778 / 379	25048	10.9	186.5	186.5	186.7	0.2
AA	961.5 / 182.09	607 / 309	22776	12.0	187.1	187.1	187.3	0.2
AB	963.0 / 182.38	829 / 431	28462	9.6	188.3	188.3	188.5	0.2
AC	964.5 / 182.67	748 / 427	26163	10.5	188.6	188.6	188.8	0.2
AD	966.5 / 183.04	791 / 464	26238	10.3	189.3	189.3	189.5	0.2
AE	967.7 / 183.27	924 / 469	29028	10.0	190.8	190.8	191.0	0.2
AF	968.5 / 183.42	849 / 460	24608	11.0	191.5	191.5	191.7	0.2
AG	969.5 / 183.61	625 / 404	22330	12.1	194.3	194.3	194.5	0.2
AH	970.7 / 183.84	688 / 394	24988	10.8	196.2	196.2	196.3	0.1
AI	972.0 / 184.09	712 / 489	25036	10.0	196.9	196.9	197.0	0.1
AJ	973.5 / 184.37	638 / 453	22134	11.3	197.0	197.0	197.2	0.2
AK	975.0 / 184.65	555 / 356	22098	11.3	197.5	197.5	197.7	0.2
AL	976.6 / 184.95	594 / 402	21945	11.4	198.0	198.0	198.2	0.2
AM	978.0 / 185.22	690 / 389	25081	9.9	199.1	199.1	199.3	0.2

[1] Thousands of feet above mouth / Miles above mouth
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DELAWARE RIVER (CONTINUED)								
AN	979.5 / 185.50	505 / 257	18874	13.2	199.2	199.2	199.4	0.2
AO	981.0 / 185.79	654 / 399	25154	9.9	201.4	201.4	201.6	0.2
AP	982.5 / 186.07	727 / 411	24578	10.2	202.1	202.1	202.3	0.2
AO	984.0 / 186.36	723 / 361	24544	10.2	203.0	203.0	203.1	0.1
AR	985.5 / 186.64	926 / 399	27101	9.2	203.9	203.9	204.1	0.2
AS	987.0 / 186.93	819 / 515	26427	9.4	204.7	204.7	204.9	0.2
AT	988.5 / 187.21	834 / 510	27515	9.1	205.6	205.6	205.8	0.2
AU	990.0 / 187.50	831 / 548	25243	9.9	206.3	206.3	206.5	0.2
AV	991.6 / 187.81	847 / 518	23416	10.7	207.2	207.2	207.4	0.2
AW	993.0 / 188.06	684 / 559	19166	13.0	207.7	207.7	207.8	0.1
AX	994.5 / 188.35	805 / 486	23048	10.8	209.8	209.8	210.0	0.2
AY	996.0 / 188.64	757 / 353	23332	10.7	210.7	210.7	210.9	0.2
AZ	997.5 / 188.92	737 / 279	22341	11.2	211.7	211.7	211.9	0.2
BA	998.9 / 189.19	666 / 285	19959	12.5	212.3	212.3	212.5	0.2
BB	1000.6 / 189.50	759 / 452	25408	9.8	214.7	214.7	214.9	0.2
BC	1002.0 / 189.77	855 / 563	26007	9.6	215.5	215.5	215.7	0.2
BD	1003.5 / 190.05	929 / 479	28231	8.8	216.3	216.3	216.5	0.2
BE	1005.0 / 190.33	866 / 439	22823	10.9	216.2	216.2	216.4	0.2
BF	1006.3 / 190.59	816 / 548	23129	10.8	218.0	218.0	218.2	0.2
BG	1008.1 / 190.92	1246 / 559	39219	7.4	220.0	220.0	220.2	0.2
BH	1009.5 / 191.18	1238 / 408	37232	7.3	220.6	220.6	220.8	0.2
BI	1011.0 / 191.47	1178 / 116	32877	7.6	221.3	221.3	221.5	0.2
BJ	1012.5 / 191.75	1316 / 138	35007	7.1	222.2	222.2	222.4	0.2
BK	1013.9 / 192.01	687 / 209	20700	12.1	222.2	222.2	222.4	0.2

[1] Thousands of feet above mouth / Miles above mouth
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DELAWARE RIVER (CONTINUED)								
BL	1015.6 / 192.34	739 / 221	21603	11.5	224.1	224.1	224.3	0.2
BM	1017.0 / 192.60	830 / 340	24672	10.1	225.8	225.8	226.0	0.2
BN	1018.5 / 192.89	950 / 576	27002	9.2	227.2	227.2	227.4	0.2
BO	1020.0 / 193.18	1047 / 792	28415	8.8	228.0	228.0	228.2	0.2
BP	1021.5 / 193.46	1379 / 956	29752	8.4	228.7	228.7	228.9	0.2
BO	1023.0 / 193.74	1096 / 751	24859	10.0	228.9	228.9	229.1	0.2
BR	1024.0 / 193.93	853 / 324	23792	10.5	229.2	229.2	229.4	0.2
BS	1025.1 / 194.15	746 / 269	21091	11.8	230.0	230.0	230.2	0.2
BT	1025.8 / 194.28	990 / 233	27046	9.2	231.3	231.3	231.5	0.2
BU	1027.5 / 194.60	1610 / 478	37962	6.6	232.5	232.5	232.7	0.2
BV	1029.0 / 194.87	579 / 355	17606	14.2	232.0	232.0	232.1	0.1
BW	1030.5 / 195.16	675 / 351	19626	12.7	234.8	234.8	235.0	0.2
BX	1032.0 / 195.45	1006 / 648	31059	8.0	237.6	237.6	237.8	0.2
BY	1033.5 / 195.74	622 / 358	17726	14.1	237.3	237.3	237.5	0.2
BZ	1035.0 / 196.02	457 / 290	11436	21.8	238.4	238.4	238.6	0.2
CA	1036.4 / 196.29	727 / 369	22695	11.0	247.1	247.1	247.3	0.2
CB	1038.0 / 196.59	787 / 440	20111	12.4	248.4	248.4	248.6	0.2
CC	1039.5 / 196.87	739 / 477	19154	13.0	250.2	250.2	250.4	0.2
CD	1041.0 / 197.15	1248 / 393	19992	12.5	252.4	252.4	252.6	0.2
CE	1042.8 / 197.49	1391 / 445	23113	10.7	255.0	255.0	255.2	0.2
CF	1043.6 / 197.64	1110 / 412	25867	9.7	256.6	256.6	256.8	0.2
CG	1044.3 / 197.78	875 / 346	23613	10.5	257.1	257.1	257.3	0.2
CH	1045.5 / 198.00	672 / 403	22446	11.0	257.8	257.8	258.0	0.2
CI	1047.0 / 198.29	486 / 333	15749	15.7	257.7	257.7	257.9	0.2

[1] Thousands of feet above mouth / Miles above mouth
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DELAWARE RIVER (CONTINUED)								
CJ	1048.5 / 198.57	607 / 458	16770	14.8	259.1	259.1	259.3	0.2
CK	1050.0 / 198.86	543 / 425	14482	17.1	259.1	259.1	259.3	0.2
CL	1051.6 / 199.16	608 / 377	16482	15.0	261.4	261.4	261.6	0.2
CM	1053.0 / 199.43	755 / 374	19004	13.1	263.6	263.6	263.8	0.2
CN	1054.5 / 199.71	838 / 456	24295	10.2	266.6	266.6	266.8	0.2
CO	1056.1 / 200.01	1135 / 845	29308	8.5	268.6	268.6	268.8	0.2
CP	1057.5 / 200.28	1374 / 1020	31467	7.9	269.9	269.9	270.1	0.2
CO	1059.0 / 200.57	1308 / 374	26912	9.2	271.0	271.0	271.2	0.2
CR	1060.5 / 200.85	1730 / 386	34772	7.1	273.0	273.0	273.1	0.1
CS	1062.0 / 201.12	2191 / 1379	36851	6.7	273.9	273.9	274.1	0.2
CT	1063.5 / 201.42	2181 / 1946	51768	4.8	274.9	274.9	275.1	0.2
CU	1065.0 / 201.70	2127 / 2015	46880	5.3	275.4	275.4	275.6	0.2
CV	1066.6 / 202.00	1956 / 1445	37864	6.6	276.0	276.0	276.2	0.2
CW	1068.0 / 202.27	1576 / 502	30020	8.3	276.6	276.6	276.8	0.2
CX	1069.5 / 202.56	1802 / 375	34963	7.1	278.1	278.1	278.3	0.2
CY	1071.0 / 202.84	1980 / 384	35012	7.1	279.0	279.0	279.2	0.2
CZ	1072.5 / 203.12	1776 / 452	24356	10.2	279.3	279.3	279.5	0.2
DA	1074.0 / 203.40	1293 / 549	23964	10.3	280.2	280.2	280.4	0.2
DB	1075.5 / 203.68	962 / 476	25098	9.9	281.3	281.3	281.5	0.2
DC	1077.1 / 203.98	970 / 764	26517	9.4	282.2	282.2	282.4	0.2
DD	1078.5 / 204.26	976 / 834	25559	9.8	282.8	282.8	283.0	0.2
DE	1080.0 / 204.54	1176 / 1012	28332	8.8	284.1	284.1	284.3	0.2
DF	1081.5 / 204.82	1416 / 1283	32015	7.7	285.3	285.3	285.5	0.2
DG	1082.7 / 205.05	1074 / 779	26856	9.2	285.8	285.8	286.0	0.2

[1] Thousands of feet above mouth / Miles above mouth
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DELAWARE RIVER (CONTINUED)								
DH	1084.2 / 205.34	549 / 345	19126	13.0	286.4	286.4	286.6	0.2
DI	1086.0 / 205.67	511 / 369	18425	13.5	287.5	287.5	287.7	0.2
DJ	1087.5 / 205.96	565 / 368	18785	13.2	288.9	288.9	289.1	0.2
DK	1089.0 / 206.24	790 / 566	22605	11.0	291.0	291.0	291.2	0.2
DL	1090.5 / 206.53	915 / 618	23064	10.8	291.9	291.9	292.1	0.2
DM	1092.0 / 206.81	919 / 638	22338	11.1	292.9	292.9	293.1	0.2
DN	1092.9 / 206.99	901 / 466	21129	11.7	293.5	293.5	293.7	0.2
DO	1093.9 / 207.17	927 / 505	23977	10.3	295.6	295.6	295.8	0.2
DP	1095.5 / 207.47	807 / 582	22411	11.1	296.5	296.5	296.7	0.2
DO	1095.6 / 207.67	777 / 566	21521	11.5	296.9	296.9	297.1	0.2
DR	1098.0 / 207.95	694 / 496	17937	13.8	297.4	297.4	297.6	0.2
DS	1099.4 / 208.22	626 / 459	16611	14.9	299.1	299.1	299.3	0.2
DT	1101.3 / 208.57	844 / 476	22744	10.9	304.6	304.6	304.7	0.1
DU	1102.5 / 208.80	661 / 413	20830	11.9	305.3	305.3	305.4	0.1
DV	1104.0 / 209.09	630 / 367	16242	15.3	305.8	305.8	305.9	0.1
DW	1105.4 / 209.35	640 / 451	18453	13.4	308.5	308.5	308.7	0.2
DX	1107.0 / 209.66	777 / 638	23486	10.6	311.1	311.1	311.2	0.1
DY	1108.5 / 209.94	612 / 402	19417	12.8	311.6	311.6	311.8	0.2
DZ	1110.0 / 210.23	905 / 757	24687	10.0	313.9	313.9	314.0	0.1
EA	1111.5 / 210.51	927 / 562	27480	9.0	315.1	315.1	315.2	0.1
EB	1113.0 / 210.79	693 / 392	26741	9.3	315.6	315.6	315.8	0.2
EC	1114.5 / 211.07	558 / 375	15741	15.8	315.6[3]	314.4[3]	314.6	0.2
ED	1116.5 / 211.46	697 / 426	22575	11.0	318.7	318.7	318.9	0.2
EE	1118.3 / 211.80	665 / 258	23638	10.5	319.9	319.9	320.1	0.2

[1] Thousands of feet above mouth / Miles above mouth
[2] Width / Width within Warren County
[3] Regulatory elevation of Cross Section EB is applied at Cross Section EC due to naturally occurring drawdown condition

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DELAWARE RIVER (CONTINUED)								
EF	1120.3 / 212.18	1299 / 166	42996	5.8	322.4	322.4	322.6	0.2
EG	1122.0 / 212.50	1434 / 197	40313	6.2	322.8	322.8	323.0	0.2
EH	1123.5 / 212.78	1846 / 265	50635	4.9	323.3	323.3	323.5	0.2
EI	1125.0 / 213.06	1775 / 369	36322	6.8	323.4	323.4	323.6	0.2
EJ	1126.5 / 213.35	1877 / 254	44802	5.5	324.4	324.4	324.6	0.2
EK	1128.0 / 212.63	2537 / 337	49017	5.0	324.8	324.8	325.0	0.2
EL	1129.6 / 213.93	2511 / 388	48194	5.1	325.1	325.1	325.3	0.2
EM	1131.0 / 214.20	2639 / 480	48771	5.0	325.4	325.4	325.6	0.2
EN	1132.5 / 214.48	2481 / 632	64009	3.8	325.8	325.8	326.0	0.2
EO	1134.2 / 214.80	2270 / 581	44488	5.5	325.9	325.9	326.1	0.2
EP	1137.0 / 215.34	2666 / 247	46533	5.3	327.0	327.0	327.2	0.2
EO	1140.0 / 215.91	1306 / 527	35710	6.8	327.7	327.7	327.9	0.2
ER	1141.5 / 216.19	1297 / 966	35656	6.8	328.2	328.2	328.4	0.2
ES	1143.0 / 216.47	1222 / 694	36696	6.6	328.8	328.8	329.0	0.2
ET	1144.5 / 216.76	937 / 499	27698	8.8	329.0	329.0	329.2	0.2
EU	1146.0 / 217.05	1093 / 709	32892	7.4	330.2	330.2	330.4	0.2
EV	1147.5 / 217.32	1015 / 771	30049	8.1	330.7	330.7	330.9	0.2
EW	1149.0 / 217.61	996 / 600	29504	8.3	331.4	331.4	331.6	0.2
EX	1150.5 / 217.89	1226 / 643	31324	7.8	332.1	332.1	332.3	0.2
EY	1152.0 / 218.18	1820 / 607	35513	6.9	332.9	332.9	333.1	0.2
EZ	1153.5 / 218.46	2157 / 506	37794	6.5	333.6	333.6	333.7	0.1
FA	1155.0 / 218.74	2274 / 718	44735	5.5	334.5	334.5	334.7	0.2
FB	1156.5 / 219.03	1869 / 912	38823	6.3	334.8	334.8	335.0	0.2
FC	1157.9 / 219.30	1793 / 474	32341	7.5	335.1	335.1	335.3	0.2

[1] Thousands of feet above mouth / Miles above mouth
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DELAWARE RIVER (CONTINUED)								
FD	1159.4 / 219.58	2261 / 719	57377	4.3	336.3	336.3	336.5	0.2
FE	1161.2 / 219.93	2774 / 2531	72273	3.4	336.7	336.7	336.9	0.2
FF	1162.5 / 220.17	2945 / 2530	72802	3.4	336.8	336.8	337.0	0.2
FG	1164.0 / 220.45	2840 / 2535	65650	3.7	337.0	337.0	337.2	0.2
FH	1165.5 / 220.72	2943 / 2590	58080	4.2	337.1	337.1	337.3	0.2
FI	1167.0 / 221.02	3011 / 2641	50032	4.9	337.5	337.5	337.7	0.2
FJ	1168.5 / 221.29	2886 / 2560	47515	5.1	337.9	337.9	338.1	0.2
FK	1170.0 / 221.59	2839 / 2671	54630	4.5	339.2	339.2	339.4	0.2
FL	1172.0 / 221.97	1386 / 1112	27057	9.0	339.2	339.2	339.3	0.1
FM	1173.2 / 222.19	1025 / 725	23969	10.2	339.7	339.7	339.9	0.2
FN	1174.5 / 222.44	863 / 595	22461	10.9	340.6	340.6	340.8	0.2
FO	1175.8 / 222.69	705 / 321	24957	9.8	342.0	342.0	342.2	0.2
FP	1177.5 / 223.01	1104 / 389	25226	9.7	342.9	342.9	343.0	0.1
FO	1179.0 / 223.29	935 / 240	23457	10.4	343.9	343.9	344.1	0.2
FR	1180.5 / 223.57	888 / 326	23116	10.6	345.0	345.0	345.2	0.2
FS	1182.0 / 223.87	666 / 318	20379	12.0	346.1	346.1	346.3	0.2
FT	1183.5 / 224.15	572 / 219	19181	12.7	347.3	347.3	347.5	0.2
FU	1184.9 / 224.42	1563 / 270	29948	8.1	349.8	349.8	350.0	0.2
FV	1186.5 / 224.71	2327 / 364	25322	9.6	350.3	350.3	350.5	0.2

[1] Thousands of feet above mouth / Miles above mouth
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DRY RUN								
A	918[1]	50	79	15.2	252.3	252.3	252.3	0.0
B	1602[1]	31	93	10.7	266.1	266.1	266.1	0.0
C	2185[1]	93	128	7.8	275.0	275.0	275.0	0.0
D	2767[1]	40	75	15.2	283.0	283.0	283.0	0.0
E	3043[1]	42	107	9.3	289.1	289.1	289.1	0.0
F	3626[1]	40	77	12.9	297.6	297.6	297.6	0.0
G	4832[1]	200	697	1.1	315.1	315.1	315.1	0.0
H	5564[1]	115	262	3.1	319.5	319.5	319.7	0.2
I	6191[1]	47	105	7.6	334.1	334.1	334.1	0.0
J	6818[1]	37	196	4.1	337.2	337.2	337.4	0.2
K	8063[1]	48	262	3.1	353.4	353.4	353.6	0.2
HACKETTSTOWN BROOK								
A	440[2]	85	185	3.8	527.1	526.9[3]	527.0[3]	0.1
B	710[2]	65	205	3.4	530.5	530.5	530.5	0.0
C	920[2]	50	145	4.9	530.8	530.8	530.8	0.0
D	1410[2]	67	230	3.0	532.8	532.8	533.0	0.2
E	1561[2]	140	365	1.9	535.4	535.4	535.4	0.0
F	1841[2]	105	190	3.7	536.1	536.1	536.1	0.0
G	2160[2]	90	270	2.6	537.9	537.9	537.9	0.0
H	2506[2]	160	365	1.9	540.8	540.8	541.0	0.2
I	2652[2]	130	195	3.5	541.3	541.3	542.1	0.8
J	3510[2]	100	162	4.3	546.0	546.0	546.0	0.0

[1] Feet above confluence with Lopatcong Creek
[2] Feet above confluence with Musconetcong River
[3] Elevation computed without consideration of backwater effects from Musconetcong River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

DRY RUN – HACKETTSTOWN BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
HANCES BROOK								
A	28[1]	90	275	4.5	442.4	441.4[3]	441.6[3]	0.2
B	530[1]	120	330	3.8	447.1	447.1	447.1	0.0
C	1295[1]	148	270	4.6	451.5	451.5	451.6	0.1
D	2035[1]	235	250	5.0	456.1	456.1	456.1	0.0
E	2835[1]	280	1030	1.2	464.3	464.3	464.3	0.0
F	2947[1]	120	225	5.6	465.2	465.2	465.2	0.0
G	3265[1]	73	180	7.0	469.2	469.2	469.2	0.0
H	3941[1]	73	225	5.6	476.5	476.5	476.5	0.0
I	4431[1]	145	290	4.3	479.9	479.9	479.9	0.0
J	4820[1]	88	210	6.0	484.5	484.5	484.5	0.0
HONEY RUN								
A	1010[2]	53	185	3.0	395.6	395.6	395.8	0.2
B	1230[2]	288	1178	0.5	396.3	396.3	396.5	0.2
C	2290[2]	660	1881	0.3	397.0	397.0	397.2	0.2
D	4720[2]	232	744	0.8	397.8	397.8	398.0	0.2
E	5370[2]	224	733	0.8	398.2	398.2	398.4	0.2
F	6390[2]	164	554	1.0	399.4	399.4	399.6	0.2
G	7340[2]	509	1262	0.4	399.9	399.9	400.1	0.2
H	8440[2]	364	918	0.6	400.3	400.3	400.5	0.2
I	9310[2]	92	323	1.7	402.4	402.4	402.6	0.2
J	9880[2]	615	1554	0.4	402.7	402.7	402.9	0.2
K	10460[2]	240	633	0.9	403.3	403.3	403.5	0.2
L	11400[2]	185	510	1.1	405.6	405.6	405.8	0.2
M	12610[2]	358	867	0.7	406.4	406.4	406.6	0.2
N	13890[2]	147	400	1.4	409.2	409.2	409.4	0.2

[1] Feet above confluence with Musconetcong River
[2] Feet above confluence with Beaver Brook
[3] Elevation computed without consideration of backwater effects from Musconetcong River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

HANCES BROOK – HONEY RUN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
JACKSONBURG CREEK								
A	1005[1]	474	417	3.2	334.5	334.5	334.7	0.2
B	2000[1]	60	166	8.0	341.4	341.4	341.6	0.2
C	2975[1]	88	190	7.0	352.7	352.7	352.7	0.0
D	3375[1]	134	254	5.2	356.6	356.6	356.6	0.0
E	3790[1]	265	584	2.3	363.2	363.2	363.2	0.0
F	4150[1]	62	169	7.8	366.7	366.7	366.9	0.2
G	4422[1]	33	180	7.4	370.3	370.3	370.3	0.0
H	4587[1]	35	198	6.7	374.0	374.0	374.0	0.0
I	4840[1]	69	154	8.6	374.9	374.9	374.9	0.0
J	5095[1]	106	868	1.5	382.5	382.5	382.5	0.0
K	5395[1]	100	205	6.5	387.8	387.8	387.8	0.0
LOPATCONG CREEK								
A	465[2]	68	359	13.2	186.4	166.0[3]	166.0[3]	0.0
B	860[2]	55	336	14.1	186.4	172.0[3]	172.0[3]	0.0
C	1530[2]	36	290	16.3	186.4	184.6[3]	184.7[3]	0.1
D	2075[2]	124	593	8.0	192.2	192.2	192.2	0.0
E	2870[2]	121	673	7.0	196.4	196.4	196.6	0.2
F	3890[2]	252	1673	2.8	204.7	204.7	204.8	0.1
G	4640[2]	204	903	5.2	209.3	209.3	209.3	0.0
H	6350[2]	474	1891	2.5	214.5	214.5	214.5	0.0
I	7925[2]	256	1249	3.2	222.5	222.5	223.1	0.1
J	8460[2]	109	468	8.5	223.0	223.0	223.1	0.1
K	9350[2]	169	760	5.2	228.4	228.4	228.4	0.0
L	9820[2]	147	604	6.6	230.6	230.6	230.8	0.2

[1] Feet above confluence with Paulins Kill
[2] Feet above confluence with Delaware River
[3] Elevation computed without consideration of backwater effects from Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

JACKSONBURG CREEK – LOPATCONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
LOPATCONG CREEK (CONTINUED)								
M	10390	252	1151	3.4	232.7	232.7	232.8	0.1
N	10870	204	700	5.7	234.1	234.1	234.2	0.1
O	11380	169	740	5.4	236.6	236.6	236.7	0.1
P	11960	354	1493	2.7	241.2	241.2	241.2	0.0
O	12885	529	4554	0.8	249.1	249.1	249.3	0.2
R	13530	310	1979	1.8	249.1	249.1	249.3	0.2
S	14060	225	1128	3.1	249.4	249.4	249.6	0.2
T	16905	192	602	5.8	262.3	262.3	262.3	0.0
U	17390	301	873	4.0	265.5	265.5	265.6	0.1
V	17940	224	1139	2.8	269.6	269.6	269.7	0.1
W	18520	268	1128	2.6	270.4	270.4	270.5	0.1
X	19195	234	935	3.4	272.1	272.1	272.2	0.1
Y	19720	183	567	5.6	274.6	274.6	274.7	0.1
Z	21689	418	2344	1.4	287.1	287.1	287.3	0.2
AA	22199	424	1640	2.0	287.4	287.4	287.6	0.2
AB	22754	460	2109	1.5	292.8	292.8	292.9	0.1
AC	23254	467	1625	2.0	293.3	293.3	293.4	0.1
AD	23879	524	1063	3.0	295.2	295.2	295.3	0.1
AE	24574	345	906	3.5	300.4	300.4	300.6	0.2
AF	25154	357	799	4.0	305.9	305.9	306.1	0.2
AG	25679	225	725	4.4	314.9	314.9	315.0	0.1
AH	26159	179	633	5.1	319.0	319.0	319.1	0.1
AI	26629	139	487	4.6	322.1	322.1	322.2	0.1
AJ	27229	97	306	7.2	326.6	326.6	326.8	0.2

[1] Feet above confluence with Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

LOPATCONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
LOPATCONG CREEK (CONTINUED)								
AK	27664	200	665	3.3	330.8	330.8	330.9	0.1
AL	28594	149	399	5.6	335.9	335.9	336.1	0.2
AM	29589	466	817	2.7	343.4	343.4	343.5	0.1
AN	30284	373	699	3.2	349.3	349.3	349.4	0.1
AO	30709	299	582	3.8	353.2	353.2	353.4	0.2
AP	31009	279	466	4.8	356.9	356.9	357.1	0.2
AO	31509	233	544	4.1	362.0	362.0	362.2	0.2
AR	32279	220	436	5.1	371.3	371.3	371.3	0.0
AS	32709	248	445	5.0	375.8	375.8	375.8	0.0
AT	33089	265	441	5.0	380.4	380.4	380.5	0.1
AU	33854	320	482	4.6	389.4	389.4	389.5	0.1
AV	34530	257	546	4.1	396.9	396.9	397.1	0.2
AW	35444	278	664	3.3	407.5	407.5	407.7	0.2
AX	36309	171	507	4.4	419.0	419.0	419.2	0.2
AY	37069	368	580	3.8	429.4	429.4	429.6	0.2
AZ	37853	166	502	4.4	441.9	441.9	442.1	0.2
BA	38828	331	707	3.1	455.3	455.3	455.5	0.2
BB	39358	186	523	4.2	466.1	466.1	466.3	0.2
BC	40018	196	457	4.9	476.3	476.3	476.5	0.2
BD	40743	82	327	6.8	492.4	492.4	492.6	0.2
BE	41533	176	570	3.9	512.2	512.2	512.4	0.2

[1] Feet above confluence with Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

LOPATCONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MERRILL CREEK								
A	240	380	300	2.5	261.5	259.3[2]	259.5[2]	0.2
B	1000	72	121	6.3	264.1	264.1	264.2	0.1
C	1470	170	185	4.1	267.5	267.5	267.5	0.0
D	1730	390	589	1.3	271.0	271.0	271.0	0.0
E	2480	325	160	4.7	274.1	274.1	274.1	0.0
F	2600	310	259	2.9	279.8	279.8	279.9	0.1
G	2680	305	935	1.0	280.1	280.1	280.3	0.2
H	3450	218	213	3.6	284.7	284.7	284.7	0.0
I	3840	100	241	1.6	289.8	289.8	289.8	0.0
J	4085	89	101	3.8	293.6	293.6	293.6	0.0
K	4600	100	64	5.9	300.2	300.2	300.2	0.0
L	5300	45	86	4.4	309.7	309.7	309.7	0.0
M	6250	80	42	6.9	317.7	317.7	317.7	0.0
N	6770	130	92	3.2	324.6	324.6	324.6	0.0
O	7170	40	96	3.0	331.3	331.3	331.3	0.0
P	7900	210	245	3.8	342.9	342.9	342.9	0.0
O	9000	60	101	9.2	361.2	361.2	361.2	0.0
R	9112	51	211	4.4	364.2	364.2	364.2	0.0
S	9240	32	95	9.8	365.2	365.2	365.2	0.0
T	10121	32	95	9.8	381.1	381.1	381.1	0.0
U	10270	29	113	8.2	383.0	383.0	383.0	0.0
V	11270	55	105	7.3	405.7	405.7	405.7	0.0
W	11400	99	307	2.5	409.0	409.0	409.0	0.0
X	12260	70	148	5.2	425.5	425.5	425.5	0.0
Y	13095	50	138	5.6	445.5	445.5	445.5	0.0

[1] Feet above confluence with Pohatcong Creek
[2] Elevation computed without consideration of backwater effects from Pohatcong Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MERRILL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MERRILL CREEK LEFT CHANNEL								
A	400[1]	390	589	1.3	271.0	271.0	271.0	0.0
B	1125[1]	325	160	4.7	274.3	274.3	274.3	0.0
C	1250[1]	310	259	2.9	279.8	279.8	279.9	0.1
D	1300[1]	305	935	1.0	280.0	280.0	280.2	0.2
E	2050[1]	218	213	3.6	284.6	284.6	284.6	0.0
F	2700[1]	115	102	1.6	289.7	289.7	289.7	0.0
G	2950[1]	100	105	2.8	293.3	293.3	293.3	0.0
H	3600[1]	60	52	5.5	300.0	300.0	300.0	0.0
I	4460[1]	50	43	6.7	309.8	309.8	309.8	0.0
J	5370[1]	75	42	6.9	319.6	319.6	319.6	0.0
K	5770[1]	25	92	3.2	325.7	325.7	325.7	0.0
L	6200[1]	45	96	3.0	334.2	334.2	334.2	0.0
MILL BROOK								
A	255[2]	234	110	4.0	336.3	336.3	336.5	0.2
B	655[2]	110	133	4.8	345.2	345.2	345.2	0.0
C	1188[2]	29	76	8.4	356.7	356.7	356.8	0.1
D	2090[2]	89	131	4.9	383.2	383.2	383.2	0.0
E	3160[2]	24	71	9.1	419.5	419.5	419.5	0.0
MONTANA BROOK								
A	440[2]	55	66	5.4	315.0	315.0	315.1	0.1
B	575[2]	40	59	6.1	326.4	326.4	326.5	0.1
C	1060[2]	22	51	7.1	338.6	338.6	338.6	0.0

[1] Feet above confluence with Merrill Creek
[2] Feet above confluence with Pohatcong Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MERRILL CREEK LEFT CHANNEL – MILL BROOK – MONTANA BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MONTANA BROOK (CONTINUED)								
D	1360[1]	38	59	6.1	346.1	346.1	346.1	0.0
E	1992[1]	30	78	4.6	364.2	364.2	364.3	0.1
MUSCONETCONG RIVER								
A	139[2]	87/27[3]	847	9.5	159.2	137.9[4]	138.1[4]	0.2
B	1448[2]	775/725[3]	3014	2.7	159.2	141.4[4]	141.5[4]	0.1
C	2292[2]	364/334[3]	1085	7.4	159.2	142.0[4]	142.2[4]	0.2
D	4050[2]	423/43[3]	1861	4.3	159.2	148.9[4]	148.9[4]	0.0
E	5737[2]	736/676[3]	2261	3.6	159.2	154.9[4]	155.1[4]	0.2
F	7967[2]	333/83[3]	2118	3.8	159.5	159.5	159.7	0.2
G	10082[2]	445/215[3]	2810	2.9	165.3	165.3	165.5	0.2
H	11599[2]	401/361[3]	2262	3.5	166.7	166.7	166.8	0.1
I	13388[2]	434/189[3]	2103	3.8	169.5	169.5	169.7	0.2
J	14941[2]	750/50[3]	3089	2.6	171.9	171.9	172.1	0.2
K	15957[2]	306/156[3]	1479	5.4	173.0	173.0	173.2	0.2
L	18790[2]	600/539[3]	3026	2.6	180.1	180.1	180.2	0.1
M	20902[2]	475/31[3]	1431	5.5	182.6	182.6	182.8	0.2
N	22600[2]	419/61[3]	2406	3.3	186.5	186.5	186.7	0.2
O	27921[2]	138/70[3]	730	10.9	217.6	217.6	217.6	0.0
P	32972[2]	165/79[3]	1026	7.6	256.0	256.0	256.0	0.0
O	34145[2]	170/95[3]	1620	5.4	258.6	258.6	258.7	0.1
R	36025[2]	320/120[3]	2584	3.4	260.3	260.3	260.4	0.1
S	38390[2]	252/198[3]	1440	6.0	262.2	262.2	262.4	0.2
T	40035[2]	175/100[3]	1599	5.4	264.8	264.8	264.9	0.1

[1] Feet above confluence with Pohatcong Creek
[2] Feet above confluence with Delaware River
[3] Width / Width within Warren County
[4] Elevation computed without consideration of backwater effects from Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MONTANA BROOK – MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
U	40710	90/50	1148	7.6	265.2	265.2	265.4	0.2
V	41000	115/40	1284	6.8	267.0	267.0	267.0	0.0
W	42225	232/110	1682	5.2	267.9	267.9	268.1	0.2
X	42390	131/71	1132	7.7	268.8	268.8	268.8	0.0
Y	42488	254/159	1588	5.5	271.2	271.2	271.2	0.0
Z	42588	139/71	881	9.9	271.2	271.2	271.2	0.0
AA	43230	151/71	1260	6.9	273.4	273.4	273.4	0.0
AB	44070	154/104	1376	6.3	274.6	274.6	274.6	0.0
AC	45020	154/74	1447	6.0	276.0	276.0	276.2	0.2
AD	45222	210/120	1952	4.5	277.4	277.4	277.5	0.1
AE	46135	162/97	1685	5.2	277.7	277.7	277.9	0.2
AF	46268	144/87	1334	6.5	277.8	277.8	278.0	0.2
AG	46401	174/107	1858	4.7	278.6	278.6	278.8	0.2
AH	47210	240/110	1991	4.4	278.9	278.9	279.0	0.1
AI	47925	180/50	2006	4.3	279.4	279.4	279.6	0.2
AJ	48785	193/113	1412	6.2	279.5	279.5	279.7	0.2
AK	49620	280/180	2188	4.0	280.5	280.5	280.7	0.2
AL	50570	200/80	1372	6.3	280.8	280.8	281.0	0.2
AM	51600	190/130	1237	7.0	281.7	281.7	281.8	0.1
AN	52400	286/231	2202	3.9	282.9	282.9	283.1	0.2
AO	53250	190/40	1328	6.5	285.8	285.8	285.9	0.1
AP	54420	148/93	1269	6.8	288.0	288.0	288.1	0.1
AO	55415	130/55	1102	7.9	289.6	289.6	289.7	0.1
AR	56292	171/91	1460	6.0	291.5	291.5	291.7	0.2

[1] Feet above confluence with Delaware River
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
AS	57387	130/35	853	10.2	292.4	292.4	292.5	0.1
AT	58060	234/84	1770	4.9	295.5	295.5	295.6	0.1
AU	59120	142/72	849	10.2	296.0	296.0	296.1	0.1
AV	59752	234/62	1777	4.9	298.8	298.8	298.9	0.1
AW	61030	239/28	1329	6.5	299.9	299.9	300.1	0.2
AX	62055	273/140	1739	4.7	302.4	302.4	302.5	0.1
AY	64100	255/210	1950	4.1	304.9	304.9	305.0	0.1
AZ	65540	165/115	1134	7.0	306.6	306.6	306.8	0.2
BA	66500	127/72	1274	6.2	308.6	308.6	308.7	0.1
BB	67985	122/70	1014	7.9	310.4	310.4	310.6	0.2
BC	69220	336/126	2144	3.5	313.5	313.5	313.6	0.1
BD	70490	120/85	783	9.5	315.1	315.1	315.2	0.1
BE	71830	214/44	1797	4.1	319.2	319.2	319.3	0.1
BF	72685	220/140	2132	3.5	326.7	326.7	326.7	0.0
BG	73960	340/235	2520	3.0	327.1	327.1	327.1	0.0
BH	76000	394/104	3279	2.3	327.9	327.9	328.1	0.2
BI	77040	383/140	2664	2.8	328.2	328.2	328.4	0.2
BJ	78585	288/218	2067	3.6	329.0	329.0	329.2	0.2
BK	79940	227/165	1419	5.3	330.3	330.3	330.4	0.1
BL	80348	246/106	1618	4.6	331.8	331.8	331.9	0.1
BM	81330	188/50	1351	5.5	332.7	332.7	332.8	0.1
BN	82465	237/125	1229	6.1	334.1	334.1	334.2	0.1
BO	83190	311/71	1827	4.1	336.3	336.3	336.4	0.1
BP	85120	217/87	1381	5.4	339.1	339.1	339.3	0.2

[1] Feet above confluence with Delaware River
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
BO	86070	256/215	1675	4.4	340.9	340.9	341.1	0.2
BR	87220	263/210	1405	5.3	342.4	342.4	342.5	0.1
BS	87510	235/155	1424	5.2	343.1	343.1	343.3	0.2
BT	87730	210/85	1428	5.2	343.8	343.8	344.0	0.2
BU	88370	340/45	2180	3.4	345.3	345.3	345.4	0.1
BV	88940	346/46	2450	3.0	346.0	346.0	346.1	0.1
BW	89990	341/41	1405	5.3	346.7	346.7	346.8	0.1
BX	91090	235/95	1465	5.1	349.4	349.4	349.5	0.1
BY	91400	150/110	1125	6.6	350.0	350.0	350.1	0.1
BZ	92555	170/90	1515	4.9	354.8	354.8	354.9	0.1
CA	93570	250/80	1615	4.6	356.7	356.7	356.7	0.0
CB	94530	250/200	1700	4.4	358.3	358.3	358.5	0.2
CC	96010	260/105	1990	3.7	360.5	360.5	360.6	0.1
CD	97335	275/140	1980	3.8	362.0	362.0	362.2	0.2
CE	98338	250/105	1720	4.3	363.9	363.9	364.0	0.1
CF	100025	236/100	970	7.7	366.4	366.4	366.4	0.0
CG	100750	140/65	1010	7.4	372.9	372.9	372.9	0.0
CH	101000	210/70	1345	4.1	374.2	374.2	374.4	0.2
CI	101320	320/75	1825	4.2	374.9	374.9	375.0	0.1
CJ	102000	240/65	1600	4.7	375.5	375.5	375.7	0.2
CK	103290	390/45	2015	3.7	377.5	377.5	377.7	0.2
CL	104080	370/190	1740	4.3	378.5	378.5	378.7	0.2
CM	104755	410/55	2135	3.5	379.8	379.8	379.8	0.0
CN	105150	470/340	2415	3.1	380.4	380.4	380.4	0.0

[1] Feet above confluence with Delaware River
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
CO	105700	500/210	3100	2.4	381.1	381.1	381.2	0.1
CP	106460	590/175	2620	2.8	381.4	381.4	381.6	0.2
CO	107070	585/210	2825	2.6	382.1	382.1	382.2	0.1
CR	108045	445/140	2274	3.3	382.7	382.7	382.9	0.2
CS	109450	485/180	2865	2.6	384.2	384.2	384.4	0.2
CT	111600	335/250	1175	6.4	385.8	385.8	385.9	0.1
CU	112220	235/65	1075	6.9	387.1	387.1	387.1	0.0
CV	113680	300/50	1730	4.3	390.8	390.8	391.0	0.2
CW	114575	350/65	1700	4.4	391.8	391.8	392.0	0.2
CX	115000	210/145	1295	5.8	392.2	392.2	392.4	0.2
CY	115730	148/45	855	8.7	394.0	394.0	394.1	0.1
CZ	117005	170/70	1210	6.2	398.5	398.5	398.5	0.0
DA	118170	168/105	765	9.8	402.7	402.7	402.7	0.0
DB	119060	265/155	1415	5.3	408.0	408.0	408.1	0.1
DC	120300	400/355	1675	4.5	411.1	411.1	411.1	0.0
DD	120670	280/130	1570	4.8	413.5	413.5	413.5	0.0
DE	121710	225/60	1210	6.2	416.2	416.2	416.2	0.0
DF	123230	335/240	2395	3.1	419.0	419.0	419.1	0.1
DG	124340	350/255	2350	3.2	419.6	419.6	419.7	0.1
DH	125150	260/110	1645	4.5	420.0	420.0	420.1	0.1
DI	126270	310/160	1895	3.9	422.5	422.5	422.6	0.1
DJ	127210	320/0	1980	3.8	423.4	423.4	423.5	0.1
DK	127830	260/105	1660	4.5	423.9	423.9	424.0	0.1
DL	129020	252/55	1300	5.7	424.8	424.8	424.9	0.1

[1] Feet above confluence with Delaware River
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
DM	129875	200/105	1760	4.2	428.8	428.8	428.9	0.1
DN	130800	220/125	1360	5.5	429.5	429.5	429.7	0.2
DO	131155	300/130	2080	3.6	430.3	430.3	430.4	0.1
DP	131860	340/70	2025	3.7	430.9	430.9	431.0	0.1
DO	132260	245/50	1165	6.4	431.0	431.0	431.1	0.1
DR	132820	300/135	2400	1.9	434.9	434.9	434.9	0.0
DS	133865	195/90	1015	4.4	434.9	434.9	434.9	0.0
DT	134850	325/165	1655	2.7	436.0	436.0	436.1	0.1
DU	136040	290/230	1520	2.9	436.8	436.8	437.0	0.2
DV	137100	135/40	665	6.7	438.0	438.0	438.1	0.1
DW	137465	200/100	1175	3.8	442.0	442.0	442.0	0.0
DX	138360	220/170	860	4.8	442.4	442.4	442.5	0.1
DY	139820	220/75	860	4.8	446.2	446.2	446.2	0.0
DZ	140780	220/45	1080	3.8	448.0	448.0	448.1	0.1
EA	141650	140/100	440	9.3	449.3	449.3	449.3	0.0
EB	143290	390/90	1495	2.7	455.2	455.2	455.3	0.1
EC	144140	430/240	1710	2.4	456.2	456.2	456.4	0.2
ED	144910	160/50	655	6.2	457.3	457.3	457.3	0.0
EE	146020	180/140	840	4.9	462.4	462.4	462.6	0.2
EF	146790	130/35	520	7.9	465.2	465.2	465.3	0.1
EG	146906	300/90	980	4.2	467.0	467.0	467.1	0.1
EH	147390	179/85	650	6.3	468.2	468.2	468.2	0.0
EI	148420	115/45	600	6.8	471.5	471.5	471.6	0.1
EJ	149760	88/60	510	8.1	476.5	476.5	476.5	0.0

[1] Feet above confluence with Delaware River
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
EK	150990	205/35	935	4.1	480.4	480.4	480.6	0.2
EL	151570	125/35	640	5.7	481.5	481.5	481.7	0.2
EM	151850	183/65	725	5.1	483.2	483.2	483.3	0.1
EN	151980	320/145	1230	3.0	485.3	485.3	485.3	0.0
EO	152460	304/260	675	5.5	485.7	485.7	485.7	0.0
EP	154360	370/50	1320	2.8	490.9	490.9	491.0	0.1
EO	155250	180/50	885	3.8	492.0	492.0	492.1	0.1
ER	156000	179/39	612	5.5	493.2	493.2	493.3	0.1
ES	157610	133/43	493	6.8	499.5	499.5	499.5	0.0
ET	157735	160/61	525	6.4	502.3	502.3	502.3	0.0
EU	159200	345/300	1010	3.3	506.0	506.0	506.2	0.2
EV	161000	244/150	614	5.4	509.1	509.1	509.2	0.1
EW	161710	303/123	976	3.4	510.8	510.8	510.8	0.0
EX	161830	305/150	1559	2.1	513.4	513.4	513.4	0.0
EY	162400	219/75	750	4.5	514.3	514.3	514.3	0.0
EZ	163070	169/109	715	4.7	515.7	515.7	515.7	0.0
FA	163190	143/75	756	4.4	517.8	517.8	517.8	0.0
FB	164540	75/50	331	8.9	519.9	519.9	520.0	0.1
FC	164682	95/50	490	6.0	521.3	521.3	521.3	0.0
FD	164815	197/67	821	3.6	527.0	527.0	527.0	0.0
FE	165520	185/115	846	3.5	527.6	527.6	527.6	0.0
FF	167000	169/79	754	3.7	529.4	529.4	529.4	0.0
FG	168070	165/95	707	4.0	530.9	530.9	530.9	0.0
FH	168180	185/85	1104	2.6	533.7	533.7	533.7	0.0

[1] Feet above confluence with Delaware River
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
FI	169000	185/130	412	6.9	535.6	535.6	535.6	0.0
FJ	170000	176/95	465	6.1	543.3	543.3	543.5	0.2
FK	171160	149/49	490	5.8	549.4	549.4	549.4	0.0
FL	172500	117/72	380	7.4	556.4	556.4	556.6	0.2
FM	173750	143/58	423	6.7	565.3	565.3	565.3	0.0
FN	175700	109/65	538	5.3	572.5	572.5	572.6	0.1
FO	176500	81/40	269	10.5	577.8	577.8	577.8	0.0
FP	177800	77/52	375	7.5	588.9	588.9	588.9	0.0
FO	178610	77/40	324	8.7	593.7	593.7	593.7	0.0
FR	178723	134/40	553	5.1	598.1	598.1	598.1	0.0
FS	180150	107/37	485	5.8	602.6	602.6	602.6	0.0
FT	181455	90/40	527	5.4	606.0	606.0	606.0	0.0
FU	181575	90/40	408	6.9	606.9	606.9	607.0	0.1
DV	181790	115/45	706	4.0	608.0	608.0	608.2	0.2
DW	181900	102/42	480	5.9	608.0	608.0	608.2	0.2
FX	182505	97/30	482	5.9	609.9	609.9	609.9	0.0
FY	182615	68/40	424	5.9	610.3	610.3	610.3	0.0
FZ	184000	130/70	385	6.5	614.9	614.9	615.0	0.1
GA	185000	87/50	405	6.2	619.9	619.9	620.1	0.2
GB	185890	138/70	478	5.2	623.2	623.2	623.2	0.0
GC	186030	205/110	1371	1.8	634.6	634.6	634.8	0.2
GD	187125	235/135	1546	1.6	634.8	634.8	635.0	0.2
GE	188555	382/185	2629	1.0	634.9	634.9	635.1	0.2
GF	190260	245/120	1181	2.1	635.1	635.1	635.3	0.2

[1] Feet above confluence with Delaware River
[2] Width / Width within Warren County

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
MUSCONETCONG RIVER (CONTINUED)								
GG	192350[1]	691/335[4]	3481	0.7	635.4	635.4	635.5	0.1
GH	193895[1]	94/38[4]	546	4.6	635.5	635.5	635.6	0.1
GI	195145[1]	75/45[4]	561	4.5	637.5	637.5	637.6	0.1
GJ	197800[1]	167/40[4]	1204	2.1	639.5	639.5	639.7	0.2
GK	198190[1]	160/40[4]	729	3.4	640.1	640.1	640.3	0.2
MUSCONETCONG RIVER TRIBUTARY M-8								
A	140[2]	39	99	6.8	301.8	300.5[5]	300.5[5]	0.0
B	830[2]	39	104	6.4	309.4	309.4	309.4	0.0
C	1700[2]	130	182	3.6	318.2	318.2	318.3	0.1
D	2485[2]	100	208	3.2	324.5	324.5	324.5	0.0
E	3200[2]	80	242	2.8	330.9	330.9	331.1	0.2
F	3850[2]	80	137	4.9	336.5	336.5	336.6	0.1
G	4300[2]	270	249	2.7	340.0	340.0	340.1	0.1
PAULINS KILL								
A	1510[3]	386	2980	2.6	312.2	312.2	312.4	0.2
B	2910[3]	461	4043	1.9	312.5	312.5	312.7	0.2
C	4230[3]	253	1696	4.6	313.8	313.8	314.0	0.2
D	5700[3]	477	3063	2.3	315.2	315.2	315.4	0.2
E	8540[3]	112	838	9.2	316.5	316.5	316.7	0.2
F	10390[3]	425	2705	2.9	318.4	318.4	318.5	0.1
G	11950[3]	696	2053	3.8	321.6	321.6	321.7	0.1

[1] Feet above confluence with Delaware River
[2] Feet above confluence with Musconetcong River
[3] Feet above Township of Knowlton corporate limits
[4] Width / Width within Warren County
[5] Elevation computed without consideration of backwater effects from Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

MUSCONETCONG RIVER – MUSCONETCONG RIVER TRIBUTARY M-8 – PAULINS KILL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
PAULINS KILL (CONTINUED)								
H	14110[1]	906	6022	1.3	323.2	323.2	323.4	0.2
I	15590[1]	629	3088	2.5	323.4	323.4	323.6	0.2
J	16895[1]	337	1285	6.0	324.3	324.3	324.4	0.1
K	17585[1]	287	1443	5.4	326.0	326.0	326.2	0.2
L	18090[1]	564	2802	2.6	327.2	327.2	327.4	0.2
M	19760[1]	495	2795	2.7	328.1	328.1	328.2	0.1
N	20060[1]	294	2061	3.6	328.2	328.2	328.3	0.1
O	20795[1]	557	3185	2.3	329.2	329.2	329.3	0.1
P	22910[1]	672	3173	2.3	330.0	330.0	330.2	0.2
O	25720[1]	434	1582	4.5	333.9	333.9	334.1	0.2
R	27610[1]	477	2089	3.4	337.3	337.3	337.3	0.0
S	28850[1]	436	2174	3.2	338.7	338.7	338.7	0.0
T	30070[1]	388	1965	3.6	340.4	340.4	340.4	0.0
U	31585[1]	355	1964	3.3	343.0	343.0	343.1	0.1
V	32075[1]	445	1299	5.1	343.2	343.2	343.4	0.2
W	32540[1]	490	2232	2.9	344.5	344.5	344.6	0.1
X	33162[1]	214	1299	5.1	345.1	345.1	345.3	0.2
Y	34115[1]	221	1487	4.4	345.9	345.9	346.1	0.2
Z	35845[1]	196	1484	4.4	347.8	347.8	347.9	0.1
AA	36155[1]	185	1764	3.7	348.6	348.6	348.7	0.1
AB	37018[1]	275	2214	3.0	356.5	356.5	356.5	0.0
PEOUEST RIVER								
A	1200[2]	80	400	6.7	255.5	255.5	255.5	0.0

[1] Feet above Township of Knowlton corporate limits
[2] Feet above confluence with Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

PAULINS KILL – PEQUEST RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
PEQUEST RIVER (CONTINUED)								
B	1660	160	560	4.8	258.7	258.7	258.9	0.2
C	1895	290	725	3.7	259.2	259.2	259.4	0.2
D	2025	320	750	3.5	259.5	259.5	259.7	0.2
E	2385	145	680	3.9	260.9	260.9	261.1	0.2
F	2885	77	370	7.2	262.6	262.6	262.7	0.1
G	4445	300	810	3.3	270.3	270.3	270.5	0.2
H	5755	310	850	3.1	275.2	275.2	275.4	0.2
I	7190	120	475	5.6	279.5	279.3	279.5	0.2
J	7825	213	968	4.6	284.7	284.7	284.9	0.2
K	8945	204	1289	3.5	288.6	288.6	288.8	0.2
L	10230	107	921	5.0	292.4	292.4	292.5	0.1
M	11060	123	861	5.3	294.4	294.4	294.6	0.2
N	12120	439	1152	4.0	298.3	298.3	298.5	0.2
O	13745	103	573	5.8	306.4	306.4	306.6	0.2
P	15000	275	1041	3.2	312.3	312.3	312.5	0.2
O	16100	105	528	6.3	316.1	316.1	316.3	0.2
R	17000	188	661	5.0	322.8	322.8	323.0	0.2
S	18065	288	1226	2.7	329.7	329.7	329.9	0.2
T	19100	118	484	4.9	331.7	331.7	331.9	0.2
U	20380	150	587	4.0	337.0	337.0	337.2	0.2
V	21060	142	598	4.0	341.7	341.7	341.9	0.2
W	21980	74	362	6.6	347.0	347.0	347.2	0.2
X	22600	134	582	4.1	351.1	351.1	351.3	0.2
Y	24120	71	388	6.1	358.3	358.3	358.5	0.2

[1] Feet above confluence with Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

PEQUEST RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
PEQUEST RIVER (CONTINUED)								
Z	26250	381	1284	1.9	363.6	363.6	363.8	0.2
AA	27460	165	820	2.9	367.0	367.0	367.2	0.2
AB	28280	211	692	3.4	370.9	370.9	371.1	0.2
AC	29380	101	501	4.7	375.3	375.3	375.5	0.2
AD	30430	73	387	6.1	383.0	383.0	383.2	0.2
AE	31840	93	440	5.4	389.5	389.5	389.7	0.2
AF	33280	131	595	4.0	393.0	393.0	393.2	0.2
AG	35150	77	351	6.2	400.0	400.0	400.2	0.2
AH	36500	66	449	4.9	402.5	402.5	402.7	0.2
AI	37550	63	460	4.8	405.4	405.4	405.6	0.2
AJ	38240	163	798	2.7	406.3	406.3	406.5	0.2
AK	39700	112	566	3.9	408.9	408.9	409.1	0.2
AL	41340	203	796	2.7	417.5	417.5	417.7	0.2
AM	42970	101	538	3.4	424.0	424.0	424.2	0.2
AN	44480	340	1174	1.6	428.0	428.0	428.2	0.2
POHATCONG CREEK								
A	633	75	556	9.3	169.6	146.1[2]	146.3[2]	0.2
B	1453	258	981	5.3	169.6	150.9[2]	151.1[2]	0.2
C	2409	182	716	7.2	169.6	154.8[2]	154.9[2]	0.1
D	2999	189	873	5.9	169.6	157.6[2]	157.8[2]	0.2
E	4051	285	1617	3.2	169.6	161.2[2]	161.4[2]	0.2
F	4731	259	1472	3.5	169.6	162.3[2]	162.5[2]	0.2
G	5266	153	898	5.8	169.6	163.1[2]	163.3[2]	0.2

[1] Feet above confluence with Delaware River
[2] Elevation computed without consideration of backwater effects from Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

PEQUEST RIVER – POHATCONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
POHATCONG CREEK (CONTINUED)								
H	6278	297	1639	3.2	169.6	165.7[2]	165.9[2]	0.2
I	7064	98	656	7.9	169.6	168.1[2]	168.3[2]	0.2
J	8185	102	649	8.0	172.5	172.5	172.7	0.2
K	9201	180	1093	4.7	176.0	176.0	176.2	0.2
L	10421	160	1036	5.0	179.0	179.0	179.2	0.2
M	11179	181	1337	3.9	180.3	180.3	180.4	0.1
N	11900	179	1150	4.5	181.3	181.3	181.5	0.2
O	12741	135	996	5.2	182.6	182.6	182.8	0.2
P	13778	192	1571	3.3	185.6	185.6	185.7	0.1
O	14413	117	724	7.1	185.9	185.9	186.0	0.1
R	15399	110	813	6.4	188.4	188.4	188.6	0.2
S	16443	187	1007	5.1	191.1	191.1	191.3	0.2
T	17050	108	714	7.2	192.5	192.5	192.7	0.2
U	17835	71	476	10.2	195.7	195.7	195.8	0.1
V	18373	66	586	8.3	199.0	199.0	199.1	0.1
W	18963	73	706	6.9	201.1	201.1	201.2	0.1
X	19706	181	1199	4.0	203.3	203.3	203.4	0.1
Y	20903	216	1650	2.9	207.7	207.7	207.8	0.1
Z	21513	213	1407	3.4	208.1	208.1	208.2	0.1
AA	22341	323	1100	4.4	211.3	211.3	211.5	0.2
AB	22882	359	1514	3.2	213.0	213.0	213.1	0.1
AC	23637	287	1257	3.9	214.3	214.3	214.5	0.2
AD	24366	172	833	5.8	216.2	216.2	216.3	0.1
AE	24805	168	787	6.1	217.8	217.8	217.9	0.1

[1] Feet above confluence with Delaware River
[2] Elevation computed without consideration of backwater effects from Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

POHATCONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
POHATCONG CREEK (CONTINUED)								
AF	25416	241	1747	2.8	219.8	219.8	220.0	0.2
AG	26486	225	2058	2.4	225.4	225.4	225.6	0.2
AH	26875	220	1730	2.8	225.5	225.5	225.7	0.2
AI	27563	170	1165	4.2	226.3	226.3	226.4	0.1
AJ	28720	175	1010	4.8	227.4	227.4	227.6	0.2
AK	29516	90	725	6.7	228.9	228.9	229.1	0.2
AL	29750	125	1145	4.2	230.2	230.2	230.2	0.0
AM	30945	95	455	10.6	232.9	232.9	232.9	0.0
AN	32040	145	765	6.3	239.6	239.6	239.8	0.2
AO	32630	160	1180	4.1	242.0	242.0	242.2	0.2
AP	33887	160	755	6.4	243.1	243.1	243.2	0.1
AO	35000	135	1165	4.2	246.3	246.3	246.4	0.1
AR	36788	140	1140	4.2	248.5	248.5	248.7	0.2
AS	37652	100	595	7.7	250.6	250.6	250.6	0.0
AT	37832	110	645	7.1	250.6	250.6	250.8	0.2
AU	39188	129	945	4.9	254.2	254.2	254.3	0.1
AV	40030	205	865	5.3	255.4	255.4	255.5	0.1
AW	40985	180	795	5.8	258.2	258.2	258.3	0.1
AX	41080	135	595	7.7	258.2	258.2	258.3	0.1
AY	42000	350	1360	3.4	260.2	260.2	260.4	0.2
AZ	43465	230	845	4.6	263.0	263.0	263.2	0.2
BA	44620	195	1055	3.7	265.3	265.3	265.4	0.1
BB	45460	205	903	4.3	266.3	266.3	266.5	0.2
BC	47395	110	625	6.2	269.5	269.5	269.7	0.2

[1] Feet above confluence with Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

POHATCONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
POHATCONG CREEK (CONTINUED)								
BD	48465	160	605	6.4	272.4	272.4	272.5	0.1
BE	49465	130	795	4.9	276.2	276.2	276.3	0.1
BF	49882	115	605	6.4	276.8	276.8	276.9	0.1
BG	50775	135	744	5.2	279.6	279.6	279.6	0.0
BH	51745	105	496	7.8	282.4	282.4	282.5	0.1
BI	52764	150	1030	3.8	287.9	287.9	288.0	0.1
BJ	54170	93	785	5.0	288.7	288.7	288.9	0.2
BK	54925	170	1152	3.4	289.8	289.8	290.0	0.2
BL	55745	150	890	4.4	292.3	292.3	292.3	0.0
BM	57740	89	613	6.3	297.5	297.5	297.5	0.0
BN	59430	230	954	4.1	302.6	302.6	302.6	0.0
BO	60890	510	2492	1.6	307.0	307.0	307.2	0.2
BP	61845	256	657	5.9	307.4	307.4	307.4	0.0
BO	63095	500	1836	2.1	311.6	311.6	311.8	0.2
BR	64200	128	766	4.3	313.0	313.0	313.1	0.1
BS	65055	290	1124	2.9	313.9	313.9	314.0	0.1
BT	66135	180	1092	3.0	316.7	316.7	316.8	0.1
BU	67005	190	1090	3.0	317.2	317.2	317.4	0.2
BV	68000	180	816	4.0	318.0	318.0	318.1	0.1
BW	68920	190	678	4.8	319.8	319.8	319.9	0.1
BX	69920	210	594	5.5	323.2	323.2	323.3	0.1
BY	70930	480	1367	2.4	326.6	326.6	326.7	0.1
BZ	71830	240	846	3.9	328.0	328.0	328.1	0.1
CA	72960	320	1294	2.5	329.9	329.9	330.1	0.2

[1] Feet above confluence with Delaware River

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
POHATCONG CREEK (CONTINUED)								
CB	74555	240	517	6.3	334.4	334.4	334.4	0.0
CC	75175	150	893	3.3	337.6	337.6	337.6	0.0
CD	76480	210	930	3.2	338.8	338.8	338.9	0.1
CE	77730	330	856	3.5	340.5	340.5	340.6	0.1
CF	78640	300	1129	2.6	342.2	342.2	342.4	0.2
CG	79795	280	821	3.6	344.4	344.4	344.5	0.1
CH	80640	360	965	3.1	346.4	346.4	346.6	0.2
CI	81385	90	332	8.9	348.5	348.5	348.6	0.1
CJ	83210	130	562	5.3	358.4	358.4	358.4	0.0
CK	84335	124	729	3.9	364.0	364.0	364.0	0.0
CL	86265	115	480	6.2	366.7	366.7	366.8	0.1
CM	87310	245	890	3.3	369.9	369.9	370.0	0.1
CN	88000	310	825	3.6	371.4	371.4	371.6	0.2
CO	88780	220	850	3.5	373.3	373.3	373.4	0.1
CP	89920	195	1050	2.8	375.4	375.4	375.5	0.1
CO	91285	220	590	5.1	375.9	375.9	375.9	0.0
CR	91910	390	1050	2.8	378.9	378.9	378.9	0.0
CS	92800	640	2890	1.0	385.1	385.1	385.3	0.2
CT	93530	695	2990	1.0	385.1	385.1	385.3	0.2
CU	94269	480	2590	0.9	387.4	387.4	387.4	0.0
CV	95400	480	2245	1.0	387.4	387.4	387.4	0.0
CW	96030	365	795	2.9	390.2	390.2	390.2	0.0
CX	96675	410	1395	1.7	390.8	390.8	390.9	0.1
CY	97800	315	515	4.5	393.0	393.0	393.1	0.1

[1] Feet above confluence with Delaware River

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
POHATCONG CREEK (CONTINUED)								
CZ	98670	285	1355	1.7	394.6	394.6	394.6	0.0
DA	99333	260	720	3.2	395.9	395.9	395.9	0.0
DB	100510	229	450	5.1	400.3	400.3	400.3	0.0
DC	101745	230	535	4.3	406.6	406.6	406.8	0.2
DD	102230	262	415	5.1	410.4	410.4	410.4	0.0
DE	102481	410	3870	0.5	422.4	422.4	422.4	0.0
DF	103382	590	3835	0.5	422.4	422.4	422.4	0.0
DG	104000	390	3205	0.6	422.4	422.4	422.4	0.0
DH	104560	340	2335	0.9	422.5	422.5	422.5	0.0
DI	105471	270	565	3.7	422.6	422.6	422.6	0.0
DJ	106600	192	705	3.0	427.3	427.3	427.4	0.1
DK	107710	106	595	3.5	429.3	429.3	429.3	0.0
DL	109530	235	465	4.5	439.6	439.6	439.6	0.0
DM	110960	192	450	4.6	445.8	445.8	446.0	0.2
DN	111440	225	1560	1.3	452.8	452.8	453.0	0.2
DO	111869	275	1075	1.9	453.0	453.0	453.2	0.2
DP	113040	120	285	7.3	460.7	460.7	460.7	0.0
DO	113790	130	320	6.5	465.5	465.5	465.6	0.1
DR	114724	169	835	2.5	468.3	468.3	468.3	0.0
DS	115342	190	615	3.4	468.5	468.5	468.7	0.2
DT	115458	210	925	2.2	472.7	472.7	472.7	0.0
DU	116681	378	985	2.1	481.3	481.3	481.5	0.2
DV	118180	280	1055	2.0	484.2	484.2	484.4	0.2
DW	118300	310	1060	2.0	484.4	484.4	484.6	0.2

[1] Feet above confluence with Delaware River

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
POHATCONG CREEK (CONTINUED)								
DX	119700	255	605	3.4	485.5	485.5	485.6	0.1
DY	120500	314	830	2.5	486.5	486.5	486.7	0.2
DZ	120622	551	6580	0.3	492.9	492.9	492.9	0.0
EA	121552	330	1205	1.7	492.9	492.9	492.9	0.0
EB	121670	410	1915	1.1	493.2	493.2	493.2	0.0
EC	122920	382	1475	1.4	493.9	493.9	493.9	0.0
ED	123790	291	1410	1.5	494.4	494.4	494.4	0.0
EE	124840	280	455	4.6	496.6	496.6	496.6	0.0
EF	125752	280	1015	2.1	503.0	503.0	503.0	0.0
EG	127240	152	335	5.1	506.3	506.3	506.3	0.0
EH	128100	105	275	6.3	512.0	512.0	512.0	0.0
EI	128800	250	620	2.8	517.0	517.0	517.1	0.1
EJ	130040	76	220	7.7	526.1	526.1	526.1	0.0
EK	131150	231	515	2.4	533.8	533.8	534.0	0.2
EL	131930	200	330	3.7	540.8	540.8	540.8	0.0
EM	132274	100	235	5.2	545.8	545.8	546.8	1.0
EN	134070	76	190	6.4	565.9	565.9	565.9	0.0
EO	135659	164	270	4.6	590.0	590.0	590.0	0.0
EP	135777	46	205	6.1	592.9	592.9	592.9	0.0
EO	137250	91	225	5.5	627.6	627.6	627.6	0.0
ER	138180	165	195	6.3	663.1	663.1	663.1	0.0
ES	138435	174	315	3.9	670.7	670.7	670.8	0.1
ET	140225	159	630	2.0	678.8	678.8	679.0	0.2
EU	141500	137	265	4.6	685.8	685.8	685.8	0.0

[1] Feet above confluence with Delaware River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

POHATCONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
POHATCONG CREEK (CONTINUED)								
EV	142760[1]	210	520	2.4	699.9	699.9	700.0	0.1
EW	143496[1]	108	420	2.9	713.5	713.5	713.5	0.0
EX	145660[1]	32	72	7.7	742.3	742.3	743.3	1.0
EY	147347[1]	32	82	6.8	778.1	778.1	778.1	0.0
POHATCONG CREEK TRIBUTARY 1								
A	436[2]	47	89	7.0	219.4	219.4	219.4	0.0
B	1121[2]	29	234	3.2	239.3	239.3	239.3	0.0
C	1686[2]	24	75	10.1	243.9	243.9	243.9	0.0
SHABBECONG CREEK								
A	540[2]	388	925	0.9	385.2	384.5[3]	384.5[3]	0.0
B	1370[2]	99	165	5.0	385.6	385.6	385.6	0.0
C	1840[2]	95	170	4.9	390.7	390.7	390.7	0.0
D	2275[2]	25	90	9.4	392.9	392.9	392.9	0.0
E	2830[2]	50	130	6.3	398.1	398.1	398.1	0.0
F	3395[2]	125	255	3.2	403.3	403.3	403.3	0.0
G	3880[2]	30	100	8.3	405.9	405.9	405.9	0.0
H	4270[2]	60	140	5.9	408.9	408.9	408.9	0.0
I	4945[2]	145	245	3.4	415.0	415.0	415.1	0.1
J	5720[2]	160	260	3.2	421.0	421.0	421.2	0.2
K	6285[2]	230	260	3.2	425.0	425.0	425.0	0.0
L	6700[2]	100	190	4.4	430.4	430.4	430.4	0.0

[1] Feet above confluence with Delaware River
[2] Feet above confluence with Pohatcong Creek
[3] Elevation computed without consideration of backwater effects from Pohatcong Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

POHATCONG CREEK – POHATCONG CREEK TRIBUTARY 1 – SHABBECONG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
SHABBECONG CREEK (CONTINUED)								
M	7587[1]	100	335	2.5	437.5	437.5	437.6	0.1
N	7965[1]	105	165	5.0	440.2	440.2	440.2	0.0
O	8430[1]	25	110	5.1	445.4	445.4	445.4	0.0
P	9015[1]	75	120	4.7	450.7	450.7	450.7	0.0
O	9625[1]	100	135	4.2	457.8	457.8	457.8	0.0
R	9915[1]	195	430	1.3	458.4	458.4	458.5	0.1
S	10175[1]	110	270	2.1	458.8	458.8	458.8	0.0
T	10720[1]	60	215	2.6	463.9	463.9	463.9	0.0
U	11715[1]	25	50	7.3	468.2	468.2	468.2	0.0
SIGLER BROOK								
A	135[2]	35	175	4.7	313.7	312.9[3]	313.1[3]	0.2
B	1135[2]	75	135	6.2	322.4	322.4	322.4	0.0
C	2065[2]	35	120	6.9	332.9	332.9	333.1	0.2
TROUT BROOK								
A	165[2]	450	1490	1.0	491.1	491.0[3]	491.2[3]	0.2
B	302[2]	330	1275	1.2	494.8	494.8	494.8	0.0
C	985[2]	195	370	4.2	496.0	496.0	496.1	0.1
D	1950[2]	225	705	2.2	502.0	502.0	502.2	0.2
E	2940[2]	28	210	7.4	505.7	505.7	505.9	0.2
F	3450[2]	50	325	4.8	507.8	507.8	507.9	0.1
G	3562[2]	210	375	4.1	508.1	508.1	508.1	0.0
H	4130[2]	140	370	4.2	509.2	509.2	509.4	0.2

[1] Feet above confluence with Pohatcong Creek
[2] Feet above confluence with Musconetcong River
[3] Elevation computed without consideration of backwater effects from Musconetcong River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

SHABBECONG CREEK – SIGLER BROOK – TROUT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
TROUT BROOK (CONTINUED)								
I	4725	89	215	7.2	512.3	512.3	512.3	0.0
J	4850	50	225	6.9	514.9	514.9	514.9	0.0
K	6005	75	245	6.4	519.1	519.1	519.3	0.2
L	6340	110	350	4.4	521.4	521.4	521.4	0.0
M	6850	120	425	3.7	524.8	524.8	525.0	0.2
N	7300	160	680	2.3	528.6	528.6	528.7	0.1
O	8260	155	515	2.3	533.2	533.2	533.4	0.2
P	9290	200	315	3.7	539.4	539.4	539.4	0.0
O	9825	230	675	1.7	541.3	541.3	541.5	0.2
R	10560	160	270	4.4	545.7	545.7	545.9	0.2
S	11540	130	175	5.0	554.8	554.8	554.8	0.0
T	12300	155	210	4.2	559.8	559.8	559.8	0.0
U	12700	170	235	3.7	565.5	565.5	565.5	0.0
V	12857	125	170	5.1	568.0	568.0	568.0	0.0
W	13583	120	195	4.5	581.0	581.0	581.1	0.1
X	14110	110	165	5.3	594.4	594.4	594.5	0.1
Y	14590	85	165	5.3	607.4	607.4	607.5	0.1
Z	14640	50	120	7.3	609.0	609.0	609.1	0.1

[1] Feet above confluence with Musconetcong River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

FLOODWAY DATA

TROUT BROOK

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 1-percent annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 1-percent annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.

Zone AR

Area of special flood hazard formerly protected from the 1-percent annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1-percent annual chance or greater flood event.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 1-percent annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 1-percent annual chance coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 1-percent annual chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2-percent annual chance floodplain, areas within the 0.2-percent annual chance floodplain, and to areas of 1-percent annual chance flooding where average depths are less than 1 foot, areas of 1-percent annual chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1-percent annual chance flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent annual chance floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2-percent annual chance floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

The current FIRM presents flooding information for the entire geographic area of Warren County. Previously, separate Flood Hazard Boundary Maps and/or FIRMs were prepared for each identified flood-prone incorporated community and the unincorporated areas of the county. This countywide FIRM also includes flood hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community, up to and including this countywide FIS, are presented in Table 8, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Allamuchy, Township of	May 24, 1976	April 30, 1976	August 15,1983	
Alpha, Borough of	October 22, 1976	December 23, 1977	December 23, 1977	
Belvidere, Town of	June 28, 1977	July 9, 1976	December 18, 1978	
Blairstown, Township of	July 26, 1974	January 16, 1976	December 18, 1979	May 2, 1991
Franklin, Township of	November 22, 1974	None	August 2, 1982	
Frelinghuysen, Township of	November 22, 1974	None	February 4, 1983	
Greenwich, Township of	June 14, 1974	June 4, 1976	August 2, 1982	May 17, 2004
Hackettstown, Town of	January 13, 1978	None	September 1, 1983	
Hardwick, Township of	February 28, 1975	None	January 21, 1983	
Harmony, Township of	August 16, 1974	July 30, 1976 January 14, 1977	November 4, 1981	June 6, 2001
Hope, Township of	August 9, 1974	January 28, 1977	March 4, 1983	August 9, 1991
Independence, Township of	July 26, 1974	May 21, 1976 February 19, 1982	April 8, 1983	

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ
(ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Knowlton, Township of	August 16, 1974	July 9, 1976	January 6, 1983	
Liberty, Township of	August 9, 1974	June 18, 1976	March 18, 1983	March 4, 1991
Lopatcong, Township of	August 27, 1976	None	January 2, 1981	March 15, 1982
Mansfield, Township of	August 16, 1974	October 17, 1975 June 25, 1976	September 15, 1983	
Oxford, Township of	June 21, 1974	March 5, 1976 October 15, 1976 October 23, 1981	March 11, 1983	
Phillipsburg, Town of	April 13, 1973	November 26, 1976	January 18, 1981	July 19, 2001
Pohatcong, Township of	August 16, 1974	March 19, 1976	September 30, 1981	
Washington, Borough of	January 3, 1975	June 11, 1976	August 16, 1982	
Washington, Township of	June 28, 1974	January 3, 1975	September 2, 1982	
White, Township of	November 2, 1973	None	May 15, 1984	

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

WARREN COUNTY, NJ (ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

FISs are currently being prepared for Sussex County, New Jersey (All Jurisdictions) and Hunterdon County, New Jersey (All Jurisdictions). FISs have been prepared for the Township of Mount Olive (FEMA, November 1984) and the Township of Washington (FEMA, December 1984) in Morris County. FISs have been prepared in countywide format for Bucks County (FEMA, April 2004) and Northampton County (FEMA, April 2001) in Pennsylvania. FISs have also been prepared for the adjacent communities along the Delaware River in Monroe County, Pennsylvania: the townships of Barrett (FEMA, September 1988), Eldred (FEMA, February 1988), Hamilton (FEMA, September 1995), Middle Smithfield (FEMA, December 1988), Price (FEMA, September 1988) and Ross (FEMA, February 1988), as well as the boroughs of East Stroudsburg (USHUD, 1978) and Stroudsburg (FEMA 1997).

Information pertaining to each jurisdiction within Warren County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FIS Reports, FHBMs, FBFMs, and FIRMs for all jurisdictions within Warren County.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Division, 26 Federal Plaza, Room 1351, New York, New York, 10278.

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