FLOOD INSURANCE STUDY

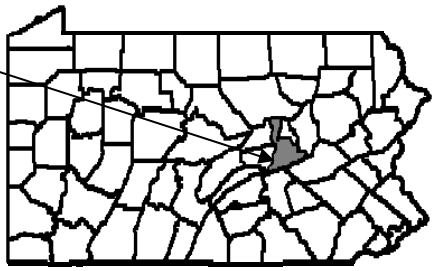
VOLUME 1 OF 2

NORTHUMBERLAND COUNTY, PENNSYLVANIA
(ALL JURISDICTIONS)

COMMUNITY NAME	COMMUNITY NUMBER	COMMUNITY NAME	COMMUNITY NUMBER
COAL, TOWNSHIP OF	421936	POINT, TOWNSHIP OF	421026
DELAWARE, TOWNSHIP OF	421010	RALPHO, TOWNSHIP OF	421027
EAST CAMERON, TOWNSHIP OF	421937	RIVERSIDE, BOROUGH OF	420740
EAST CHILLISQUAQUE, TOWNSHIP OF	422599	ROCKEFELLER, TOWNSHIP OF	421152
HERNDON, BOROUGH OF	420735	RUSH, TOWNSHIP OF	421943
JACKSON, TOWNSHIP OF	421938	SHAMOKIN, CITY OF	420741
JORDAN, TOWNSHIP OF	421939	SHAMOKIN, TOWNSHIP OF	421159
KULPMONT, BOROUGH OF	420736	SNYDERTOWN, BOROUGH OF	420742
LEWIS, TOWNSHIP OF	421940	SUNBURY, CITY OF	420743
LITTLE MAHANOY, TOWNSHIP OF	421015	TURBOT, TOWNSHIP OF	420744
LOWER AUGUSTA, TOWNSHIP OF	421017	*TURBOTVILLE, BOROUGH OF	422721
LOWER MAHANOY, TOWNSHIP OF	421941	UPPER AUGUSTA, TOWNSHIP OF	420745
*MARION HEIGHTS, BOROUGH OF	422720	UPPER MAHANOY, TOWNSHIP OF	421944
MC EWENSVILLE, BOROUGH OF	421935	WASHINGTON, TOWNSHIP OF	421945
MILTON, BOROUGH OF	425384	WATSONTOWN, BOROUGH OF	420746
MOUNT CARMEL, BOROUGH OF	420738	WEST CAMERON, TOWNSHIP OF	421946
MOUNT CARMEL, TOWNSHIP OF	421942	WEST CHILLISQUAQUE, TOWNSHIP OF	421033
NORTHUMBERLAND, BOROUGH OF	420739	ZERBE, TOWNSHIP OF	421947

*Non Flood Prone

Northumberland County



EFFECTIVE DATE: JULY 16, 2008

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
42097CV001A

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 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 community 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
B	X
C	X

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

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FLOOD INSURANCE STUDY
NORTHUMBERLAND COUNTY, PENNSYLVANIA
(ALL JURISDICTIONS)

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Northumberland County, including the Cities of Shamokin and Sunbury; the Boroughs of Herndon, Kulpmont, McEwensville, Milton, Mount Carmel, Northumberland, Riverside, Snydertown, and Watsontown; and the Townships of Coal, Delaware, East Cameron, East Chillisquaque, Jackson, Jordan, Lewis, Little Mahanoy, Lower Augusta, Lower Mahanoy, Mount Carmel, Point, Ralpho, Rockefeller, Rush, Shamokin, Turbot, Upper Augusta, Upper Mahanoy, Washington, West Cameron, West Chillisquaque, and Zerbe; (referred to collectively herein as Northumberland County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Boroughs of Marion Heights and Turbotville are non-flood prone.

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 report are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This countywide FIS has been prepared to include all jurisdictions within Northumberland County into a countywide FIS. Information on the authority and acknowledgements for each jurisdiction included in this countywide FIS, as compiled from their previously printed individual FIS reports (References 1-24), is shown below.

Township of Coal	The hydrologic and hydraulic analyses for this study were prepared by the U. S. Geological Survey (USGS) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-85-E1823, Project Order No. 21. This work was completed in June 1988. FIS effective July 3, 1990. (Reference 1)

Township of Delaware	The hydrologic and hydraulic analyses for this study were prepared by the Susquehanna River Basin Commission (SRBC) for the Federal Insurance Administration (FIA), under Contract No. H-3824. This work, was completed in March, 1978; FIS effective May 1980. (Reference 2)
Township of East Chillisquaque	The hydrologic and hydraulic analyses for this study were performed by the SRBC, under Contract No. H-3496, during the preparation of the FIS for the Township of West Chillisquaque. FIS effective May 4, 1987. (Reference 3)
Borough of Herndon	The hydrologic and hydraulic analyses for this study were prepared by the SRBC for the FIA, under Contract No. H-3824. This work, was completed in October 1977; FIS effective February 1979. (Reference 4)
Township of Jackson	The hydrologic and hydraulic analyses for this study were prepared by the SRBC for the FIA, under Contract Number H-3824. This work, was completed in December 1977; FIS effective February 1979. (Reference 5)
Borough of Kulpmont	The hydrologic and hydraulic analyses for this study were performed by Gannett, Fleming, Corddry, and Carpenter, Inc. for the FIA, under Contract No. H-3813. This work, was completed in March 1977; FIS effective November 1977. (Reference 6)
Township of Little Mahanoy	The hydrologic and hydraulic analyses for this study were prepared by the SRBC for the FIA, under Contract No. H-3824. This work, was completed in December 1977; FIS effective March 1979. (Reference 7)
Township of Lower Augusta	The hydrologic and hydraulic analyses for this study were prepared by the SRBC for the FIA, under Contract No. H-3824. This work, was completed in December 1977; FIS effective February 1979. (Reference 8)
Township of Lower Mahanoy	The hydrologic and hydraulic analyses for this study were prepared by Bourquard and Berger Associates for FEMA, under Contract No. H-4763. This work was completed in May 1980; FIS effective February 2, 1982. (Reference 9)
Borough of Milton	This study was prepared by Dewberry, Nealon and Davis for the FIA with data supplied by the SRBC and was completed in July 1978; FIS effective August 1979. (Reference 10)

Borough of Mount Carmel	The hydrologic and hydraulic analyses for this study were performed by Gannett, Fleming, Corddry, and Carpenter, Inc., for the FIA, under Contract No. H-38l3. This work, was completed in March 1977; FIS effective December 19, 1984. (Reference 11)
Township of Mount Carmel	The hydrologic and hydraulic analyses for this study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No. 21. This work was completed in September 1987; FIS effective May 3, 1990. (Reference 12)
Township of Point	This FIS was conducted by the SRBC at the request of the FIA. Authority and financing are contained in Contract No. H-3496 between the contractor and the FIA. FIS effective November 1976. (Reference 13)
Township of Ralpho	The hydrologic and hydraulic analyses for this study were performed by Gannett, Fleming, Corddry, and Carpenter, Inc., for the FIA, under Contract No. H-3813. The work, was completed in June 1977; FIS effective August 1978. (Reference 14)
Borough of Riverside	This FIS was conducted by the SRBC at the request of the FIA. Authority and financing are contained in Contract No. H-3496 between the contractor and the FIA. FIS effective October 1976. (Reference 15)
City of Shamokin	The hydrologic and hydraulic analyses for this study were prepared by Buchart-Horn, Inc., for the FIA, under Contract No. H-4819. This study was completed in February 1979. FIS effective June 1980. (Reference 16)
Township of Shamokin	The hydrologic and hydraulic, analyses for this study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E1823, Project Order No. 21. This work was completed in September 1987; FIS effective March 5, 1990. (Reference 17)
City of Sunbury	This FIS was conducted by the SRBC at the request of the FIA. Authority and financing are contained in Contract No. H-3496 between the contractor and the FIA. FIS effective January 1977. (Reference 18)
Township of Turbot	The hydrologic and hydraulic analyses for this study were prepared by the SRBC for the FIA under Contract No. H-3824. This work, was completed in February 1978; FIS effective February 1979. (Reference 19)

Township of Upper Augusta	This FIS was conducted by the SRBC at the request of the FIA. Authority and financing are contained in Contract No. H-3496 between the contractor and the FIA. FIS effective November 1976. (Reference 20)
Borough of Watsontown	The hydrologic and hydraulic analyses for this study were prepared by the SRBC for the FIA under Contract No. H-3824. This work, was completed in, March 1978; FIS effective July 1979. (Reference 21)
Township of West Cameron	The hydrologic and hydraulic analyses for this study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E1823, Project Order No. 21. This work was completed in September 1987; FIS effective January 17, 1990. (Reference 22)
Township of West Chillisquaque	This FIS was conducted by the SRBC at the request of the FIA. Authority and financing are contained in Contract No. H-3496 between the contractor and the FIA. FIS effective October 1976. (Reference 23)
Township of Zerbe	The hydrologic and hydraulic analyses for this study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-1823, Project Order No. 21. This work was completed in October 1987; FIS effective January 17, 1990. (Reference 24)

The authority and acknowledgements for the Boroughs of Marion Heights, McEwensville, Northumberland, Snydertown and Turbotville, and the Townships of East Cameron, Jordon, Lewis, Rockefeller, Rush, Upper Mahanoy and Washington are not included because there were no previously printed FIS reports for those communities.

For this latest revision, the hydrologic and hydraulic analyses for Limestone Run were prepared by the USGS for FEMA under Interagency Agreement EMW-2002-IA-0115 (Reference 25). Additionally, the hydrologic and hydraulic analyses for the Susquehanna River were prepared by the U.S. Army Corps of Engineers (USACE) Hydrologic Engineering Center and Philadelphia District for FEMA, under Inter-Agency Agreement Nos. EMW-99-IA-0176, Project Order Number 1 and EMW-2001-IA-0223 (Reference 26). This work was completed in September 2003.

1.3 Coordination

The purpose of an initial Consultation Coordination Officer's (CCO) meeting is to discuss the scope of the FIS. A final CCO meeting is held to review the results of the study. The dates of the initial and final CCO meetings held for all the jurisdictions within Northumberland County are shown in Table 1, "Initial and Final CCO Dates", below:

Table 1. "Initial and Final CCO Meeting Dates"

Community Name	Initial CCO Meeting Date	Final CCO Meeting Date
Township of Coal	March 28, 1985	August 17, 1989
Township of Delaware	May 19, 1975	January 24, 1979
Township of East Chillisquaque	March 24, 1986	June 9, 1986
Borough of Herndon	May 14, 1975	August 31, 1978
Township of Jackson	June 3, 1975	August 29, 1978
Borough of Kulpmont	March 1975	April 21, 1977
Township of Little Mahanoy	May 14, 1975	August 31, 1978
Township of Lower Augusta	May 14, 1975	August 30, 1978
Township of Lower Mahanoy	May 1978	August 11, 1981
Borough of Milton	June 20, 1978 and August 18, 1978	*
Borough of Mount Carmel	March 1975	May 4, 1977
Township of Mount Carmel	March 28, 1985	February 28, 1989
Township of Point	*	August 26, 1975
Township of Ralpho	March 1975	July 28, 1977
Borough of Riverside	*	August 19, 1975
City of Shamokin	June 2, 1978	January 29, 1980
Township of Shamokin	March 27, 1985	March 28, 1989
City of Sunbury	*	April 21, 1975
Township of Turbot	May 19, 1975	August 30, 1978
Township of Upper Augusta	*	August 20, 1975
Township of West Cameron	March 28, 1985	February 28, 1989
Township of West Chillisquaque	August 1975	*
Borough of Watsontown	May 19, 1975	October 12, 1978
Township of Zerbe	March 28, 1985	February 28, 1989

* Data not available

The initial CCO meetings were held with representatives from the communities, the study contractors, and FEMA, to explain the nature and purpose of FISs, and to identify the streams to be studied by detailed methods. All affected communities were requested to provide any data pertinent to the study. The final CCO meetings were held with representatives from the communities, the study contractors, and FEMA to review the results of the studies.

On April 19, 2006, the results of this countywide FIS were reviewed at a final CCO meeting.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Northumberland County, Pennsylvania (All Jurisdictions), including the incorporated communities listed in Section 1.1.

The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through Northumberland County.

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

Table 2. "Detailed Studied Streams"

Boile Run	North Branch Shamokin Creek
Carbon Run	Pocahontas Creek
Chillisquaque Creek	Quaker Run
Coal Run	Schwaben Creek
Dalmatia Creek	Shamokin Creek
Delaware Run	South Branch Roaring Creek
Dry Run	Spring Run
Fidlers Run	Susquehanna River
Limestone Run	Tributary No. 1 to Limestone Run
Mahanoy Creek	Warrior Run
Mahantango Creek	West Branch Susquehanna River
Mouse Creek	Zerbe Run
Muddy Run	

For this countywide FIS, limits of detailed study for the newly studied or revised streams are shown in the following tabulation:

Stream Name	Limit of Detailed Study
Boile Run	From the confluence with the Susquehanna River upstream approximately 4.8 miles (390 feet beyond Legislative Route 49023).
Carbon Run	From the confluence with Shamokin Creek upstream approximately 0.55 miles (260 feet upstream from Willow Street) to the City of Shamokin corporate limits.
Chillisquaque Creek	From the confluence with the West Branch Susquehanna River upstream approximately 6 miles to Legislative Route 49054 at the boundary of the Townships of West Chillisquaque and East Chillisquaque.
Coal Run	From the confluence with Shamokin Creek in the City of Shamokin upstream approximately 2.33 miles (0.52 miles upstream of State Route 61).
Dalmatia Creek	From the confluence with the Susquehanna River upstream approximately 1.15 miles.

Delaware Run	From the confluence with the West Branch Susquehanna River upstream approximately 3.8 miles (800 feet upstream from Township Route 634).
Dry Run	From the confluence with Spring Run upstream approximately 2.44 miles (450 feet upstream from Legislative Route 49119).
Fidlers Run	From the corporate limits of the Township of Lower Mahanoy upstream approximately 1.68 miles (50 feet downstream from Township Route 337).
Limestone Run	From approximately 760 feet below the entrance to the box culvert in the Borough of Milton upstream approximately 4.55 miles to 0.45 miles upstream from the west bound off-ramp to Interstate 80 (I-80) in the Township of Turbot.
Mahanoy Creek	From the confluence with the Susquehanna River upstream approximately 12.8 miles to 2 miles above Township Route 405, and for approximately 1.48 miles in the Township of West Cameron along Legislative Route 49141, ending approximately 200 feet downstream from the intersection of Legislative Route 49141 and Township Route 472.
Mahantango Creek	From the confluence with the Susquehanna River upstream approximately 9.26 miles (175 feet above State Route 225).
Mouse Creek	From the confluence with Schwaben Creek upstream approximately 1.76 miles (1,360 feet upstream from State Route 225).
Muddy Run	From the confluence with the West Branch Susquehanna River upstream approximately 4.17 miles (0.5 miles upstream from Township Road 591).
North Branch	From approximately 2,100 feet upstream from the confluence with Shamokin Creek to approximately 0.95 miles above the confluence (600 feet upstream from State Routes 54 and 61).
Pocahontas Creek	From the corporate limits of the Township of Ralpho and State Route 242 upstream approximately 3.0 miles (approximately 2,050 feet upstream from State Route 487).
Quaker Run	From the confluence with Shamokin Creek upstream approximately 0.73 miles (400 feet upstream from State Route 61).
Schwaben Creek	From the confluence with Mahanoy Creek upstream approximately 0.84 miles (1,890 feet upstream from the confluence with Mouse Creek).

Shamokin Creek	From the confluence with the Susquehanna River upstream approximately 7.48 miles (1,900 feet upstream from Legislative Route 49032); from approximately 350 downstream from Township Road 766 in the Township of Shamokin upstream approximately 9.0 miles to 275 feet upstream from Willow Street in the City of Shamokin; in the Township of Mount Carmel, from approximately 0.98 miles downstream from Poplar Street upstream approximately 1.92 miles to 125 feet above Pine Street in the Borough of Mount Carmel.
South Branch Roaring Creek	From the Township of Ralpho corporate limits upstream 3.23 miles to Township Route 459.
Spring Run	From the confluence with the West Branch Susquehanna River upstream approximately 2.38 miles to 0.52 miles upstream of Township Route 604.
Susquehanna River	For its entire reach within Northumberland County.
Tributary No. 1 to Limestone Run	From the confluence with Limestone Run upstream approximately 0.9 miles.
Warrior Run	From the confluence with the West Branch Susquehanna River upstream approximately 3.66 miles to the Delaware Township – Lewis Township corporate boundary.
West Branch Susquehanna River	For its entire reach within Northumberland County.
Zerbe Run	From its confluence with Mahanoy Creek upstream approximately 2.85 miles to the Township of Little Mahanoy corporate limits; from 500 feet downstream from 11th Street in the Township of Zerbe upstream approximately 1.0 mile to 650 feet upstream of 1st Street.

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 each individual municipality.

2.2 Community Description

Northumberland County was created on March 21, 1772, from parts of Lancaster, Cumberland, Berks, Bedford, and Northampton Counties. Northumberland County encompasses 460 square miles in central Pennsylvania and is bordered to the north by Lycoming County, to the east by Montour and Columbia Counties, to the south by Schuylkill and Dauphin Counties and to the west by Snyder and Union Counties. The southwest corner of Northumberland County also intersects Perry and Juniata Counties.

The 2000 population of Northumberland County was 94,556; a decrease of 2.3% from 1990 (Reference 27).

More than a third of the county's area is crop and pastureland and its agricultural industry ranks slightly above the state's average with dairy and poultry farming providing for the greatest part. The county is a large producer of oats and potatoes.

Northumberland County is located within the Valley and Ridge Physiographic Province of the Appalachian System, which produces rolling, dissected mountainous terrain with roughly paralleling ridges. The land form is the result of geological activity in which huge layers of rock were folded upward by tremendous amounts of internal pressure. Glaciation, erosion and other climatic elements have gradually worn away most of the sharper protrusions, leaving the rolling terrain. Generally, steep ridges are underlain by sandstone or conglomerate and have very shallow soils; the valleys have formed in limestones and shales and contain deep well-drained soils.

The county is traversed by the Susquehanna River running approximately northeast to southwest across the central and southern portion of the county, the West Branch of the Susquehanna River, running north to south along the western border of the county, and by many smaller creeks which create valuable farmland. Tracts of gently sloping terrace land and level floodplain can be found along the Susquehanna and West Branch Susquehanna Rivers and other streams. Elevations within the county range from approximately 1,000 to 1,700 feet in the mountains (the high point is Mahanoy Mountain at 1,760 feet, located southeast of City of Shamokin in the Township of Cameron), to approximately 400 feet along the banks of the Susquehanna River at the Northumberland-Dauphin county line (Reference 28).

A generally west to east atmospheric flow subjects the area to a continental type of climate modified by the addition of moisture from the Gulf of Mexico and the Atlantic Ocean. The average annual precipitation is 47 inches and is reasonably well distributed throughout the year, although several inches more fall during the summer months. Snowfalls of up to several inches occur fairly frequently throughout the winter months, with annual average of approximately 35 inches. The mean annual temperature for the area is approximately 52 degrees Fahrenheit (°F), with a mean maximum of 62° F and a mean minimum of 40° F. Generally, February is the coldest month and July the warmest. During the summer months, the area is regularly subject to afternoon and evening thunderstorms often accompanied by heavy rains and damaging winds.

2.3 Principal Flood Problems

Historically, flooding in this portion of the Susquehanna River Basin occurs most frequently in spring and early summer, although it can occur during any season of the year. Prime factors affecting the volume of runoff resulting from storm precipitation are antecedent soil moisture and the precipitation intensity. Major floods have occurred as a result heavy rainfall on frozen ground.

The characteristics of the Susquehanna River basin are such that flood-producing storms of two types generally occur, extra-tropical and tropical (Reference 26). Occasional local flooding and/or intense flash floods are most likely to occur in squall lines just to the east of a slow moving north-south oriented cold front (extra-tropical storm) These are usually warm weather phenomena where afternoon heating adds to the instability of the already unstable, moist air mass (Reference 29). Storms of tropical origin affect the Susquehanna River valley on an average of approximately once in three years. Their usual path is from the south to the northeast, but a few have traveled from the southeast to the northwest. The tropical storm season runs from June to November.

There are two primary drainage features in Northumberland County, the West Branch Susquehanna River and the Susquehanna River. The West Branch Susquehanna River forms the northwestern border of the county and the western boundary of the Boroughs of Milton, Northumberland and Watsontown, and of the Townships of Delaware, Point, Turbot and West Chillisquaque. The Susquehanna River bisects the county in a general northeast to southwest direction and then forms the southwestern boundary of the county after its confluence with the West Branch Susquehanna River in Northumberland Borough and Point Township. The Susquehanna River forms the southern boundary of Northumberland Borough and Point Township, the northern boundary of Riverside Borough and Upper Augusta Township, and the western boundary of the City of Sunbury, the Borough of Herndon, and the Townships of Jackson, Lower Augusta, Lower Mahanoy and Upper Augusta.

The West Branch Susquehanna River experienced major flooding in March 1936, May 1946, November 1951, March 1964, June 1972, September 1975, and January 1996 (Reference 30). The peak flow at Lewisburg, Pennsylvania, was measured at 287,000 cubic feet per second (cfs) in 1936 and 300,000 in 1972 (Reference 31). The June 1972 flood had a recurrence interval of approximately 1-percent-annual-chance on the West Branch Susquehanna River.

Numerous flooding events have been recorded on the Susquehanna River over the past 100 years. Records obtained from USGS gaging stations at Danville (across the river from the Borough of Riverside and above the confluence with the West Branch Susquehanna River) and Sunbury, Pennsylvania (downstream of the confluence with the West Branch Susquehanna River) indicated flooding in March 1902, March 1936, May 1946, March 1964, June 1972, September 1975, January 1996, and September 2004 as indicated in the following tabulation:

	Peak Discharge (cfs)	
Date	Danville, PA	Sunbury, PA
March 1902	243,000	NA
March 1936	250,000	556,000
May 1946	234,000	446,000
March 1964	261,000	405,000
June 1972	363,000	620,000
September 1975	257,000	439,000
January 1996	209,000	424,000
September 2004	NA	427,000

Record flooding occurred on the Susquehanna River in June 1972. A peak flow of 620,000 cfs was recorded at the gaging station in Sunbury, Pennsylvania. The recurrence interval for the June 1972 flood was between the 1-percent-annual-chance and 0.2-percent-annual-chance events when comparing the Susquehanna River profiles with the June 1972 high-water mark profile (Reference 32).

During the June 1972 flood, Shamokin Creek attained a record discharge as indicated by data maintained by the USGS at the gaging station near Shamokin, Pennsylvania. The peak recorded discharge was 4,070 cfs (References 31,33,34).

Mahantango Creek near Dalmatia measured a peak flow of 69,900 cfs, about seven times the previous record flow at this gaging site during the June 1972 event. Similarly, flooding occurred on Boile Run, Chillisquaque Creek, Coal Run, Dalmatia Creek, Delaware Run, Fidlers Creek, Hallowing Run, Kips Run, Little Shamokin Creek, Mahanoy Creek, Mouse Run, North Branch, Quaker Run, Spring Run and Zerbe Run.

Flooding from localized thunderstorms is more severe on the smaller streams, such as the tributaries studied by approximate methods, and is a source of flood damage. Mahantango Creek, Dalmatia Creek, and Fidlers Run are also subject to damaging floods from thunderstorms. Flooding that occurs on Limestone Run can be aggravated by flooding from the Susquehanna River due to the backwater effects that result; however, a sudden local downpour can cause flooding on Limestone Run independent of the Susquehanna River.

2.4 Flood Protection Measures

There are a number of existing flood protection measures within the Susquehanna River basin. The existing levees and floodwalls in the area of Sunbury have been raised as part of the Wyoming Valley Levee Raising Project (Reference 35). These levees have been evaluated in terms of overtopping elevation only and all are in excess of three-feet of freeboard above the water surface elevation for the 1-percent-annual-chance storm event.

Eleven upstream dams contribute to the reduction of flood hazards from the Susquehanna River, including four in the West Branch Susquehanna River sub-basin, and seven in the Susquehanna River sub-basin. The peak flow reductions attributed to these flood control facilities have been included in the hydrologic analysis.

Four upstream dams contribute to the reduction of flood hazards from the West Branch Susquehanna River: Foster J. Sayers Dam, located about 12 miles southwest of Lock Haven, Pennsylvania, on Bald Eagle Creek; Stevenson Dam, located about 8 miles northeast of Sinnemahoning, Pennsylvania, on First Fork Sinnemahoning Creek; Kettle Creek Dam, located about 8 miles northeast of Westport, Pennsylvania, on Kettle Creek; and Curwensville Dam, located about 7 miles southwest of Clearfield, Pennsylvania, on the West Branch Susquehanna River. These four upstream dams reduced flood stages on the West Branch Susquehanna River by about 4 feet during the Agnes flood.

Flood hazard reduction in the Susquehanna River sub-basin is aided by: Stillwater Reservoir, located about 9 miles north of Carbondale, Pennsylvania, on the Lackawanna River; East Sidney Lake, located about 8 miles east of Sidney, New York, on Ouleout Creek; Whitney Point Dam, located about 1 mile north of Whitney Point, New York, on Otselic River; Almond Dam, located about 2 miles northwest of Hornell, New York, on Canacadea Creek; Arkport Dam, located about 5 miles northeast of Hornell, New York, on Canisteo River; the Tioga-Hammond Dam complex, located 20 miles southwest of Elmira, New York on the Tioga River and Crooked Creek; and Cowanesque Lake project located on the Cowanesque River approximately 2.2 miles above the confluence with the Tioga River at Lawrenceville, Pennsylvania

Flood protection projects along Shamokin Creek and Carbon Run have considerably reduced the flooding problems in the City of Shamokin. These projects consist mainly of the channelization of Shamokin Creek and Carbon Run with man-made stone walls and bottom. An improved culvert was completed in 1978 at the confluence of Furnace Run and Shamokin Creek to reduce the sheet overflow problems. A concrete wall in the right bank of Shamokin Creek along Rock Street was constructed in 1979 to reduce flood problems to residences in this area.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood events of a magnitude that is 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 that equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 in 10); 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 community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

Precountywide Analyses

Each community within Northumberland County, with the exception of the Boroughs of Marion Heights, McEwensville, Northumberland, Snydertown and Turbot, and the Townships of East Cameron, Jordon, Lewis, Rockefeller, Rush, Upper Mahanoy and Washington, has a previously printed FIS report (References1-24). The hydrologic analyses described in those reports have been compiled and summarized below. For streams that flow through two or more communities, each methodology described applies only to that portion of the stream studied by detailed methods within the referenced community.

Discharges for the Susquehanna River were obtained from the regional discharge-frequency curves for USGS gaging stations, as published by the USACE, at one or more of the following locations: Harrisburg, Sunbury, Danville and/or Wilkes-Barre, as shown in the following tabulation:

Harrisburg Gage
Borough of Herndon
Township of Jackson
Township of Lower Augusta
Township of Lower Mahanoy

Danville Gage
Township of Point
Township of Riverside
Township of Upper Augusta
Susquehanna River

Sunbury Gage
City of Sunbury
Township of Upper Augusta

WiIkes-Barre Gage
Susquehanna River

The discharges for Carbon Run and Coal Run in the City of Shamokin were obtained using the log-Pearson Type III distribution for Shamokin Creek and subtracting the above-confluence discharges from the below-confluence discharges. The flood frequency-discharge values for Coal Run in the Township of Coal were determined by extrapolating the discharge-drainage area relationship for Shamokin Creek. Discharge values determined using this relationship are equal to approximately 52 percent of the comparable values determined using the regional relationship developed by the USGS.

Flood frequency-discharge values for Quaker Run in the Township of Coal were estimated 10 percent greater than those for equivalent areas in the Coal Run basin, because of the differing amounts of strip mining in the watersheds. Discharges for Quaker Run in the Borough of Kulpmont were calculated following a modification to the NRCS procedure described above (Reference 38).

Discharges for Boile Run downstream from cross section QU in the Township of Lower Augusta, Delaware Run and Warrior Run in the Township of Delaware, Mahanoy Creek, Mouse Creek and Schwaben Run in the Township of Jackson and Limestone Run and Muddy Run in the Township of Turbot were obtained from the regional flood frequency procedure developed by the USACE (Reference 42). This procedure is based on log-Pearson Type III analysis of a large number of station records in the Susquehanna River Basin through 1972.

The discharges for Boile Run upstream from cross section QU (Township of Lower Augusta), Spring Run and Dry Run in the Township of Delaware, and Tributary No. 1 to Limestone Run in the Township of Turbot were obtained from a unit hydrograph routing and combining procedure. The NRCS triangular unit hydrograph and runoff curve number procedure was used (Reference 43). The soils analysis was based on the Land Resource Map of Pennsylvania (Reference 44). The sub-watersheds were determined so as to best represent the effects of various tributaries. The convex method of flood routing was used (Reference 45). Rainfall amounts were obtained from the rainfall duration-frequency analysis (Reference 46). and a rainfall-time distribution was used (Reference 47). A 3-hour storm duration and an average antecedent moisture condition (Antecedent Moisture Condition II) were assumed. The times of concentrations for each sub-watershed were calculated (Reference 43). The runoff curve number was adjusted in order to match the peaks obtained from the USACE regional flood frequency procedure for Boile Run at the mouth of Unnamed Tributary No.5 (Reference 42). The results for the sub-watersheds were then plotted on a discharge drainage area graph. This graph was then utilized to obtain discharges for intermediate reaches.

The flood flows for the downstream portion of Mahantango Creek in the Township of Lower Mahanoy were adopted for the gage as developed in the FIS for the Township of Upper Paxton, Dauphin County, which also used the SRBC analysis (Reference 42, 48-50). Flood flows further upstream in the Township of Lower Mahanoy were developed by drainage area proportionment from the gage analysis determined by the SRBC (Reference 38).

For Dalmatia Creek and Fidlers Run in the Township of Lower Mahanoy, a comparison was made of peak discharge-frequency relationships developed from applicable regional hydrologic methods (Reference 38, 42, 48, 49, 51).

The stream gage at Harrisburg is located about 34 miles downstream from the southern boundary of the Township of Lower Mahanoy. The stream gage at Sunbury is located about 1 mile downstream from the City of Sunbury. The Danville gage is located about 0.7 mile, downstream from the eastern boundary of the Borough of Riverside. The stream gage at Wilkes-Barre is located approximately 43.1 miles upstream from the northeastern boundary of the Township of Franklin and has 82 years of record. The statistical analysis followed the standard log-Pearson Type III method (References36, 37). The flood frequency curves were adjusted for the effects of upstream reservoirs.

Discharges for the West Branch Susquehanna River for the Boroughs of Milton and Watsontown and the Townships of Delaware and Turbot were obtained from the discharge-frequency curves for the stream gages at Williamsport and Lewisburg, as published by the USACE. Discharges for the West Branch Susquehanna River for the Townships of Point and West Chillisquaque were obtained from the discharge-frequency curves for the stream gage at Lewisburg. The Williamsport stream gage is located about 17.1 miles upstream from the northern boundary of Delaware Township. The Lewisburg stream gage is located about 2.6 miles upstream from the southern boundary of the Township of West Chillisquaque and its records go back to 1939. This statistical analysis followed the standard log-Pearson Type III method (Reference 36). The flood frequency curves were adjusted for the effects of upstream reservoirs.

The watershed areas contributing flows to the streams in the City of Shamokin are characterized by extensive strip mining. This has changed the runoff flow patterns and created sources of underground infiltration. In deteriorated watersheds, it is difficult to estimate flows by regional regression models. Therefore, the discharges for Shamokin Creek in the City of Shamokin and the Townships of Coal and Ralpho were obtained directly from available statistical analyses of peak discharge data from gaging station No. 01554500. This station is located on the right bank of Shamokin Creek at Weigh Scales, 2 miles northwest of the City of Shamokin. Years of record include 1940 through 1993 with a watershed area of 54.2 square miles. The hydrologic analyses followed the recommended technique for fitting a log-Pearson Type III distribution as outlined by the Water Resources Council (Reference 37).

Discharges for Shamokin Creek in the Borough of Mount Carmel and for Pocahontas and South Branch Roaring Creeks in the Township of Ralpho were obtained using a modification of the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), procedure designated in this study as "McSparran Tp, Condition III", which relates basin characteristics to stream flow characteristics (Reference 38). Rainfall data were calculated using the U. S. Department of Commerce, Technical Paper No. 40, Rainfall Frequency Atlas of the United States, prepared in 1961 (Reference 39). These data were combined with basin characteristics such as drainage area, stream slope, vegetation, soil cover, and land use characteristics to estimate the resulting discharge values, considering a time lapse to the peak discharge calculated by empirical equations (Reference 40). Orthophotos at a horizontal scale of 1 inch = 200 feet with 5-foot contours as prepared from photography dated 1966-67 were obtained from the Commonwealth of Pennsylvania, Department of Mines and Mineral Industries (Reference 41). This information was used to estimate the drainage basin boundaries and watershed characteristics used in the hydrologic determinations.

The discharges for Carbon Run and Coal Run in the City of Shamokin were obtained using the log-Pearson Type III distribution for Shamokin Creek and subtracting the above-confluence discharges from the below-confluence discharges. The flood frequency-discharge values for Coal Run in the Township of Coal were determined by extrapolating the discharge-drainage area relationship for Shamokin Creek. Discharge values determined using this relationship are equal to approximately 52 percent of the comparable values determined using the regional relationship developed by the USGS.

Flood frequency-discharge values for Quaker Run in the Township of Coal were estimated 10 percent greater than those for equivalent areas in the Coal Run basin, because of the differing amounts of strip mining in the watersheds. Discharges for Quaker Run in the Borough of Kulpmont were calculated following a modification to the NRCS procedure described above (Reference 38).

Discharges for Boile Run downstream from cross section QU in the Township of Lower Augusta, Delaware Run and Warrior Run in the Township of Delaware, Mahanoy Creek, Mouse Creek and Schwaben Run in the Township of Jackson and Limestone Run and Muddy Run in the Township of Turbot were obtained from the regional flood frequency procedure developed by the USACE (Reference 42). This procedure is based on log-Pearson Type III analysis of a large number of station records in the Susquehanna River Basin through 1972.

The discharges for Boile Run upstream from cross section QU (Township of Lower Augusta), Spring Run and Dry Run in the Township of Delaware, and Tributary No. 1 to Limestone Run in the Township of Turbot were obtained from a unit hydrograph routing and combining procedure. The NRCS triangular unit hydrograph and runoff curve number procedure was used (Reference 43). The soils analysis was based on the Land Resource Map of Pennsylvania (Reference 44). The sub-watersheds were determined so as to best represent the effects of various tributaries. The convex method of flood routing was used (Reference 45). Rainfall amounts were obtained from the rainfall duration-frequency analysis (Reference 46). and a rainfall-time distribution was used (Reference 47). A 3-hour storm duration and an average antecedent moisture condition (Antecedent Moisture Condition II) were assumed. The times of concentrations for each sub-watershed were calculated (Reference 43). The runoff curve number was adjusted in order to match the peaks obtained from the USACE regional flood frequency procedure for Boile Run at the mouth of Unnamed Tributary No.5 (Reference 42). The results for the sub-watersheds were then plotted on a discharge drainage area graph. This graph was then utilized to obtain discharges for intermediate reaches.

The flood flows for the downstream portion of Mahantango Creek in the Township of Lower Mahanoy were adopted for the gage as developed in the FIS for the Township of Upper Paxton, Dauphin County, which also used the SRBC analysis (Reference 42, 48-50). Flood flows further upstream in the Township of Lower Mahanoy were developed by drainage area proportionment from the gage analysis determined by the SRBC (Reference 38).

For Dalmatia Creek and Fidlers Run in the Township of Lower Mahanoy, a comparison was made of peak discharge-frequency relationships developed from applicable regional hydrologic methods (Reference 38, 42, 48, 49, 51).

The peak discharge-frequency developed from Bulletin No. 13 was adopted since it is the most applicable to the Dalmatia Creek and Fidlers Run watersheds (Reference 51).

The discharges for Chillisquaque Creek in the Townships of East and West Chillisquaque, and Mahanoy Creek and Zerbe Run in the Township of Little Mahanoy were obtained from the regional flood frequency method developed by the USACE (Reference 52).

Discharges for North Branch in the Township of Mount Carmel were determined using regional regression equations developed in USGS Water-Resources Investigation 82-21 (Reference 53). The Pennsylvania State University PSU-IV method confirmed the determination (Reference 54).

Peak discharge-drainage area relationships for all streams within Northumberland County which have been studied in detail are shown in Table 3, "Summary of Discharges".

This Revision

The USACE, Baltimore District, completed a hydrologic study as part of the Wyoming Valley Levee Raising Project in January 1995. Four USGS stream gages are currently in operation on the main stem Susquehanna River within the area covered by this study. The USACE study considered the effects of the many flood control reservoirs upstream of the project area on the Main Stem and West Branch of the Susquehanna River in addition to the hydraulic changes brought about by the alterations to the flood control projects being proposed at the time. At least eight reservoirs were in various stages of completion between 1940 and 1980. The USACE study created a homogenous data set by altering the flow data available since 1940 to reflect flows that would have occurred without reservoir regulation. This "natural conditions" data set for the period of record for each gage was then adjusted by average reduction factors consistent with the flood control reservoirs in place to determine an "existing conditions" data set. This "existing conditions" data set was then adjusted to include the effects of the levee raisings and "improved conditions" data set was created (Reference 28, 55).

The result of this analysis provided a discharge frequency curve for each of the four USGS gages, or the "improved conditions" discharge frequency curve shown on Table 4. In order to get more accurate flow transitions along the study area, changes in flow were generated at tributaries with greater than five square miles of contributing area using the incremental addition in contributing area technique.

The discharges for Limestone Run, from the confluence with the West Branch Susquehanna River upstream to I-80 crossing, were determined by regional regression equations developed by the USGS (Reference 56) and were verified by data from hydrologically similar nearby gaging stations. A summary of the revised discharges for Limestone run is also provided in Table 3.

Table 3. "Summary of Discharges"

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cubic feet per second)			
		10 Percent Annual Chance	2 Percent Annual Chance	1 Percent Annual Chance	0.2 Percent Annual Chance
Boile Run					
At mouth	5.97	1,000	2,200	3,000	6,200
At cross section QU	1.17	300	700	1,000	2,060
Carbon Run					
At the confluence with Shamokin Creek	8.8	375	625	775	1,200
Chillisquaque Creek					
At confluence with West Branch Susquehanna River	111	6,600	11,900	15,000	24,000
Coal Run					
At downstream corporate limits of Coal Township	5.92	*	*	880	*
At the confluence with Shamokin Creek	5.5	200	325	400	650
At abandoned Conrail culvert, approximately 1 mile upstream from the downstream Coal Township corporate limits	4.7	*	*	735	*
Dalmatia Creek					
At the confluence with the Susquehanna River	2.8	630	1,050	1,230	1,620
Delaware Run					
At mouth	11.7	1,820	3,950	5,300	10,600
Dry Run					
At Delaware and Watsontown boundary	3.58	1,254	2,120	2,575	3,840
At Conrail crossing	3.08	1,080	2,000	2,469	3,310
Upstream of Township Route 627	2.76	960	1,775	2,204	2,950
Fidlers Run					
At the downstream corporate limits of Township of Lower Mahanoy	5.9	1,130	1,890	2,200	2,920
Limestone Run					
At confluence with West Branch Susquehanna River	11.6	920	2,010	2,710	5,170
Downstream to Unnamed Tributary	11.1	840	1,860	2,540	4,940
At Route 582 Bridge Crossing	8.94	690	1,570	2,140	4,220
Upstream of Interstate 80 (I-80)	7.77	620	1,420	1,950	3,890
At mouth of Tributary No. 3	6.94	1,160	2,600	3,600	7,400
At mouth of Tributary No. 4	6.72	1,130	2,560	3,500	7,200
Limestone Run (re-study data)					
At confluence with West Branch Susquehanna River	11.6	920	2,010	2,710	5,170
Downstream to Unnamed Tributary	11.1	840	1,860	2,540	4,940
At Route 582 Bridge Crossing	8.94	690	1,570	2,140	4,220
Upstream of Interstate 80 (I-80)	7.77	620	1,420	1,950	3,890

Table 3. "Summary of Discharges" -(continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cubic feet per second)			
		10 Percent Annual Chance	2 Percent Annual Chance	1 Percent Annual Chance	0.2 Percent Annual Chance
Mahanoy Creek					
At mouth	157	9,400	18,100	23,500	43,000
At confluence of Schwaben Creek	122	8,000	15,800	20,800	38,800
At confluence with Zerbe Run	99.8	6,600	13,000	17,100	33,000
Mahantango Creek					
At confluence with Susquehanna River	164	9,800	19,000	24,800	44,500
Mouse Creek					
At mouth	7.19	1,150	2,650	3,600	7,600
Muddy Run					
At mouth	1.14	1,640	3,550	4,800	9,600
At mouth of Tributary No. 1	8.97	1,420	3,100	4,200	8,500
At mouth of Tributary No. 3	7.97	1,300	2,900	3,900	8,000
North Branch					
At confluence with Shamokin Creek	5.73	*	*	1,630	*
At State Routes 54 and 61	5.30	*	*	1,540	*
Pocahontas Creek					
At confluence with Shamokin Creek	6.7	1,960	2,990	3,435	4,550
At limit of detailed study	0.9	520	840	975	1,320
Quaker Run					
At confluence with Shamokin Creek	3.62	*	*	670	*
At the upstream Main Street culvert (limit of study)	3.49	*	*	650	*
Downstream Corporate limit of Borough of Kulpmont	0.39	430	630	755	1,000
Upstream limit of detailed study	0.17	118	181	220	300
Schwaben Creek					
At mouth	30.2	3,000	6,150	8,200	16,000
At upstream corporate limits of Township of Jackson	22.8	2,520	5,500	7,400	15,000
Shamokin Creek					
Downstream from Little Shamokin Creek	137	7,800	14,000	18,000	29,500
Upstream from Little Shamokin Creek	107	6,500	11,500	14,800	24,500
At a point approximately 340 feet downstream of the T-766 bridge	84.3	*	*	7,670	*
At bridge on Legislative Route 49116 at Village of Shamrock	76.2	*	*	6,830	*

Table 3. "Summary of Discharges" -(continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cubic feet per second)			
		10 Percent Annual Chance	2 Percent Annual Chance	1 Percent Annual Chance	0.2 Percent Annual Chance
Shamokin Creek (continued)					
Above bridge on State Route 487	68.9	*	*	6,100	*
Above Legislative Route 49035	63.1	*	*	5,510	*
At confluence with Benny's Run	59.8	2,545	4,325	5,300	8,140
At downstream corporate limits of Coal Township	54.5	*	*	4,685	*
At USGS Gaging Station	52.9	2,250	3,825	4,685	7,200
At State Route 61 bridge	52.6			4,590	
At upstream corporate limits	49.5	2,100	3,600	4,425	6,850
At downstream corporate limits of City of Shamokin	48.7	*	*	4,380	*
At the confluence of Carbon Run	38.9	1,725	2,975	3,650	5,650
At the confluence of Coal Run	33.0	1,525	2,650	3,250	5,000
At upstream corporate limits of City of Shamokin	31.7	*	*	3,250	*
Above confluence of North Branch	7.55	*	*	2,000	*
At downstream corporate limits of Borough of Mount Carmel	1.60	710	1,080	1,300	1,750
At upstream corporate limits of Borough of Mount Carmel	0.88	420	645	790	1,080
South Branch Roaring Creek					
Downstream of limit of detailed study	33.2	2,310	4,150	7,000	14,800
Spring Run					
At mouth	5.00	1,710	2,960	3,590	5,260
At Delaware and Watsontown boundary downstream of Pennsylvania Route 405 – mouth of Dry Run	1.42	514	950	1,170	1,600
At Matthew Street crossing	1.22	433	795	1,006	1,390
At eastern boundary of Watsontown and Legislative Route 49061	1.04	369	680	856	1,180
Downstream of Township Route 604	0.49	159	300	375	517
Susquehanna River					
At southern corporate limits of Borough of Herndon	19,687	342,000	490,000	575,000	840,000
At confluence with Penns Creek	18,434	320,000	460,000	540,000	790,000
Upstream from West Branch Susquehanna River	11,250	190,000	250,000	285,000	440,000
Tributary No. 1 to Limestone Creek					
At mouth	1.00	435	605	670	815

Table 3. "Summary of Discharges" -(continued)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cubic feet per second)			
		10 Percent Annual Chance	2 Percent Annual Chance	1 Percent Annual Chance	0.2 Percent Annual Chance
Warrior Run					
At mouth	21.5	2,700	5,550	7,400	14,500
At mouth of Tributary No. 6	17.5	2,400	5,000	6,600	13,000
West Branch Susquehanna River					
At southern corporate limit of Township of Deleware	6,682	180,000	273,000	316,000	495,000
At mouth of Warrior Run	6,570	176,000	260,000	310,000	480,000
Zerbe Run					
At mouth	13.1	1,700	3,750	5,050	10,400
At 11th Street Bridge in the Village of Trevorton	3.45	*	*	1,050	*

* - Data Not Available

Table 4. “Summary of Discharges for Susquehanna River - Improved Conditions"

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (cubic feet per second)			
		10 Percent Annual Chance	2 Percent Annual Chance	1 Percent Annual Chance	0.2 Percent Annual Chance
Susquehanna River					
Confluence with Lower Mahantango Creek	19,034.60	317,243	452,462	525,271	729,139
Confluence with Upper Mahantango Creek	18,870.60	314,510	448,563	520,746	722,857
Confluence with Mahanoy Creek	18,784.40	313,073	446,514	518,367	719,555
Confluence with Boile Run	18,321.40	305,357	435,508	505,590	701,819
USGS gage at Sunbury	18,300	305,000	435,000	505,000	701,000
Confluence with West Branch Susquehanna River	18,163	305,000	435,000	505,000	701,000
Confluence with Lithia Springs Creek	11,168	185,893	256,231	286,376	395,903
Confluence with Gravel Run	11,159	185,744	256,026	286,146	395,585
Confluence with Kipps Run	11,152.70	185,639	255,881	285,984	395,361
Confluence with Mahoning Creek	11,146.30	185,533	255,734	285,821	395,134
USGS gage at Danville	11,114.30	185,000	255,000	285,000	394,000
Confluence with Little Roaring Creek	11,097.90	184,779	254,779	284,817	393,593

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources 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. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Cross Sections

Stream and topographic cross sections for Quaker Run in the Borough of Kulpmont, Shamokin Creek in the Borough of Mount Carmel, Shamokin Creek and North Branch in the Township of Mount Carmel, Coal Run, Quaker Run and Shamokin Creek in the Township of Coal, Shamokin Creek, Carbon Run and Coal Run in the City of Shamokin, Shamokin Creek in the Township of Shamokin, and Zerbe Run in the Township of Zerbe were field surveyed and located at close intervals above and below bridges and culverts in order to compute significant backwater effects of these structures. All bridges, dams and culverts in the community were field surveyed to obtain elevation data and structural geometry.

Cross-section data for Mahanoy Creek, Mouse Creek, and Schwaben Creek in the Township of Jackson, Mahanoy Creek and Zerbe Run in the Township of Little Mahanoy, and Boile Run in the Township of Lower Augusta were obtained from aerial photographs. The below-water sections were obtained by field measurement. All bridges and culverts were surveyed to obtain elevation data and structural geometry in order to compute the significant backwater effects of these structures.

Cross section for West Branch Susquehanna River, Warrior Run, Spring Run, Dry Run and Delaware Run in the Township of Delaware, Chillisquaque Creek in the Township of East Chillisquaque, West Branch Susquehanna River and Spring Run in the Borough of Watsontown were located at regular intervals along the stream lengths and at significant changes in ground relief, land use, and land cover. Ground elevations for the cross sections were photogrammetrically obtained as 1:2,400 scale base maps were compiled (Reference 57). The channel bottom elevations were taken from field surveyed cross sections with an interval distance of not more than 1,000 feet (1,500 feet for Chillisquaque Creek in the Township of East Chillisquaque).

Cross sections for the West Branch Susquehanna River and Limestone Run in the Borough of Milton , West Branch Susquehanna River and Susquehanna River in the Township of Point, Shamokin Creek, South Branch Roaring Creek and Pocahontas Creek in the Township of Ralpho, Shamokin Creek in the City of Sunbury, West Branch Susquehanna River, Limestone Run, Tributary No. 1 to Limestone Run and Muddy Run in the Township of Turbot, Shamokin Creek in the Township of Upper Augusta, West Branch Susquehanna and Chillisquaque Creek in the Township of West Chillisquaque were located at regular intervals along the stream lengths and at significant changes in ground relief, land use, and land cover. Ground elevations for the cross sections were photogrammetrically obtained as 1”=200’ scale base maps were compiled.

The channel bottom elevations were taken from field surveyed cross sections with an interval distance of not more than 1,000 feet (1,500 feet for Shamokin Creek in the Township of Upper Augusta).

Cross sections for Mahantango Creek, Dalmatia Creek, Fidlers Run in the Township of Lower Mahanoy were obtained from aerial photographs flown in December 1978 at a scale of 1:1,000. The below-water sections were obtained by field measurement. All bridges, dams, and culverts were surveyed to obtain elevation data and structural geometry in order to compute the significant backwater effects of the structures.

For this revision, cross sections for Limestone Run were obtained from field surveys of the channel cross-section that extended from top-of-bank to top-of-bank. Over bank portions were obtained primarily from field surveys and secondarily from 2-foot contour maps supplied by SEDA-COG. All bridges and culverts were field surveyed. Locations of selected cross sections used in the hydraulic analysis are shown on the Flood Profiles (Exhibit 1).

The cross sections for the revised hydraulic analysis of the Susquehanna River, conducted by the USACE, were obtained from the Digital Terrain Model (DTM), which was developed from aerial photography flown in April 1999 and April 2001 (References 58, 59). The below water portion of the DTM was developed from new river surveys performed in summer 2000 using CHANNEL, an ARC/INFO software application (Reference 60). Bridge geometry was obtained from as-built bridge drawings from the Pennsylvania Department of Transportation and from field investigations.

Water Surface Elevations

Water-surface elevation for floods of the selected recurrence interval on Shamokin Creek, Coal Run and Quaker Run were determined by adding 1-percent-annual-chance flood depths to streambed elevations. Flood depths were taken from FISs or estimated from regional flood depth-drainage area relationships.

Water surface elevations of floods of the selected recurrence interval were computed using the USACE HEC-2 step-backwater computer program (Reference 61). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

For the USACE study (Reference 28), water surface elevations for the selected recurrence intervals for the Susquehanna River were computed using the USACE HEC-RAS River Analysis System computer program (Reference 62). The HEC-RAS model was calibrated to five historic events and eight frequency based events at the gages. Comparisons were also made with high water marks collected during the flood of 1972 attributed to Tropical Storm Agnes using the best available bridge and levee data for 1972. These marks were modeled within acceptable limits.

For Limestone Run, water surface elevations for the selected recurrence intervals were calculated using HEC-RAS version 3.1 (Reference 63).

Starting Water Surface Elevations

Starting water surface elevations for Shamokin Creek, Coal Run and Quaker Run were taken from FISs for the City of Shamokin and the Township of Shamokin and from regional flood depth-drainage area relationships. Starting elevations for Mahantango Creek were obtained from the FIS for the Township of Upper Paxton, Dauphin County, Pennsylvania (Reference 50).

Starting elevations for West Branch Susquehanna River in the Borough of Watsontown and the Townships of Delaware and Turbot were obtained by the SRBC during a study of the Township of Kelly, Union County, Pennsylvania (Reference 65).

Starting elevations of Shamokin Creek in the Township of Upper Augusta were obtained from the Borough of Selinsgrove, Snyder County, Pennsylvania FIS, located about 6.8 miles downstream from the City of Sunbury.

Starting elevations for South Branch Roaring Creek were obtained from existing data presented in the FIS for Cleveland Township, Columbia County, Pennsylvania (Reference 66).

Starting elevations for the West Branch Susquehanna River in the Township of Point were obtained from the Borough of Northumberland FIS (Reference 67) at the first river section located at the downstream boundary of the Township of Point.

Starting water-surface elevations for Delaware Run and Dry Run in the Township of Delaware , Quaker Run in the Borough of Kulpmont, and Mahanoy Creek, Mouse Creek and Schwaben Creek in the Township of Jackson, Mahanoy Creek and Zerbe Run in the Township of Little Mahanoy, Boile Run in the Township of Lower Augusta, Dalmatia Creek and Fidlers Run in the Township of Lower Mahanoy, Shamokin Creek in the Borough of Milton, Shamokin Creek and North Branch in the Township of Mount Carmel, and Shamokin Creek in the Township of Ralpho were determined by the slope area method.

Starting elevations for Limestone Run in the Borough of Milton, Shamokin Creek, Coal Run and Carbon Run in the City of Shamokin, Shamokin Creek in the Township of Shamokin, Limestone Run and Tributary No. 1 to Limestone Run in the Township of Turbot, Zerbe Run in the Township of Zerbe, and for Limestone Run at the confluence with the West Branch Susquehanna River were obtained using normal depth calculations developed by SRBC.

Starting elevations for Spring Run in the Borough of Watsontown and Muddy Run in the Township of Turbot were obtained using critical depth calculations developed by SRBC.

Starting elevations for Pocahontas Creek in the Township of Ralpho were obtained from the Shamokin Creek profiles.

Roughness Factors

Channel roughness factors (Manning's "n" values) used in the hydraulic computations were assigned on the basis of aerial and ground level photographs, field observations, topographic maps and engineering judgment.

The "n" values were selected from tables published by Ven Te Chow (Reference 68) and the Bureau of Public Roads (Reference 69), based on channel conditions and over bank vegetation or land use. The channel and over bank "n" values are listed below in Table 5. For the USACE study (Reference 28), roughness factors for the Susquehanna River were chosen by engineering judgment and were based on inspection of the aerial photography and field visits (see Table 6).

The hydraulic analyses for this study are based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail. However, the blockage of bridge or culvert waterway openings during a period of storm water runoff could result in the flooding of areas outside those within the flood delineation lines.

Table 5. "Manning's "n" Values"

	Roughness Coefficients	
Stream Name	Channel	Overbanks
Boile Run	0.032 – 0.056	0.044 – 0.100
Carbon Run	0.040 – 0.050	0.100 – 0.340
Coal Run	0.020 – 0.038	0.058 – 0.300
Chillisquaque Creek	0.040	0.035 – 0.060
Dalmatia Creek	0.45	0.030 – 0.080
Fidlers Run	0.042 – 0.060	0.036 – 0.096
Limestone Run	0.040 – 0.055	0.35 – 0.090
Mahanoy Creek	0.034 – 0.050	0.045 – 0.110
Mahantango Creek	0.036 – 0.038	0.010 – 0.040
Mouse Creek	0.042 – 0.045	0.032 – 0.097
Muddy Run	0.035 – 0.060	0.045 – 0.100
Pocahontas Creek	0.08	0.022 – 0.08
Quaker Run	0.036 – 0.049	0.058 – 0.075
Schwaben Creek	0.037 – 0.042	0.048 – 0.100
Shamokin Creek	0.020 – 0.080	0.022 – 0.100
Spring Run	0.040 – 0.055	0.050 – 0.100
South Branch Roaring Creek	0.075	0.025 – 0.075
Susquehanna River	0.023 - 0.045	0.041 – 0.100
Tributary No. 1 to Limestone Run	0.045 – 0.060	0.050 – 0.070
Warrior Run	0.035 – 0.050	0.050 – 0.080
West Branch Susquehanna River	0.023 – 0.060	0.041 – 0.085
Zerbe Run	0.026 – 0.048	0.040 – 0.110

Table 6. "Manning's "n" Values by Land Use"

Land Use	Manning's "n" Value
River Channel	0.030
City Area	0.120
Open and Farmed Fields	0.050
Forests	0.065
Ponds	0.030

Flood boundaries along streams studied by approximate methods were based upon normal depth calculations at selected locations on the streams; approximate flood limits were then interpolated between each location.

3.3 Vertical Datum

All FIS reports 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 used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD). With the completion of the North American Vertical Datum of 1988 (NAVD), many FIS reports and FIRMs are now prepared using NAVD as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the NGVD and NAVD, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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 the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at 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 report 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 a 1-percent-annual-chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS report 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 community. For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section.

Between cross sections, the boundaries were interpolated using topographic maps at various scales and contour intervals.

The 1- and 0.2-percent-annual-chance floodplain boundaries are shown on the FIRM. On this map, the 1-percent-annual-chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1- and 0.2-percent-annual-chance floodplain boundaries are close together, only the 1-percent-annual-chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations, but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM.

For this revision, floodplain boundaries throughout Northumberland County have been revised based on newer, more up-to-date topographic information than was previously available. The flood elevations, where available were used in conjunction with the updated topographic information to remap the floodplain boundaries. In areas where flood elevations were not available, the existing floodplain boundaries were digitized using effective FIRMs.

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 base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study 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 study 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 (see Table 7, Floodway Data). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

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 base flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

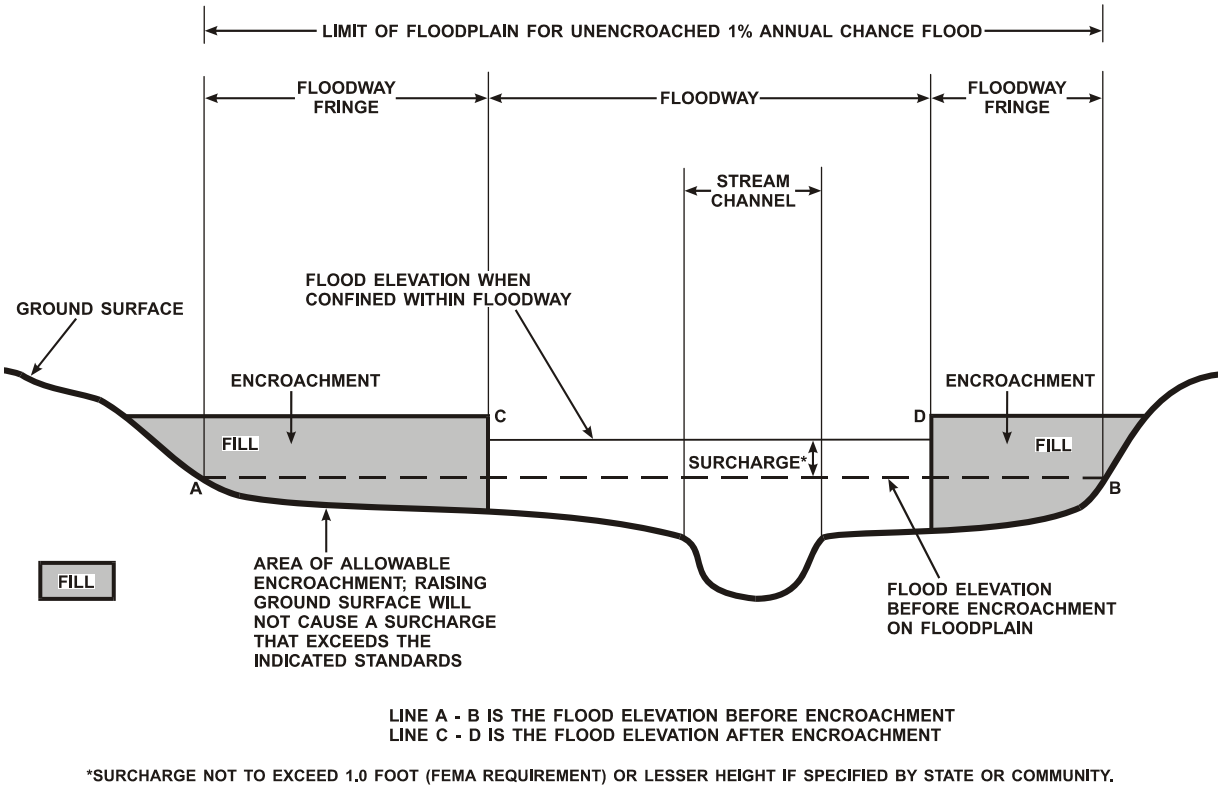

Figure 1 - Floodway Schematic

5.0 INSURANCE APPLICATION

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. These 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 report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base (1-percent-annual-chance) flood elevations (BFEs) 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 report by detailed methods. Whole-foot BFEs 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 areas of 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs 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 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

Zone AR is the flood insurance risk zone that corresponds to an area of special flood hazard formerly protected from the base 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 BFEs 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 BFEs 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 BFEs 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, 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 (sq. mi.), and areas protected from the base flood by levees. No BFEs or depths are shown within this zone.

Zone X (Future Base Flood)

Zone X (Future Base Flood) is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined based on future-conditions hydrology. No BFEs or base flood 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.

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Boile Run								
A				WITHIN SUSQUEHANNA RIVER FLOODWAY [3]				
B	280	45	485	6.2	432.1	414.5 [2]	414.8	0.3
C	380	51	476	6.3	432.1	414.8 [2]	415.8	1.0
D	550	37	216	13.8	432.1	416.4 [2]	416.4	0.0
E	870	26	193	15.5	432.1	423.5 [2]	423.5	0.0
F	950	36	385	8.1	432.1	427.9 [2]	428.3	0.4
G	1,120	46	306	10.0	432.1	428.3 [2]	428.7	0.4
H	1,530	48	299	10.3	432.1	431.6	432.3	0.7
I	1,860	37	264	11.3	434.6	434.6	435.6	1.0
J	2,335	59	270	11.4	441.6	441.6	442.3	0.7
K	2,620	43	235	12.7	446.2	446.2	446.2	0.0
L	2,690	64	525	5.9	450.1	450.1	450.9	0.8
M	2,920	67	418	7.5	450.7	450.7	451.5	0.8
N	3,165	37	257	11.7	451.6	451.6	452.6	1.0
O	3,550	68	345	8.9	456.1	456.1	457.1	1.0
P	3,900	95	440	7.0	465.4	465.4	465.7	0.3
Q	3,935	95	610	5.1	465.6	465.6	466.3	0.7
R	4,235	105	431	7.1	466.5	466.5	467.0	0.5
S	4,530	102	312	9.1	468.9	468.9	469.3	0.4
T	4,960	49	233	12.1	475.2	475.2	475.2	0.0
U	5,015	52	401	6.9	477.5	477.5	478.0	0.5
V	5,295	60	260	10.8	478.7	478.7	479.0	0.3
W	6,315	52	236	11.8	488.4	488.4	488.5	0.1
X	6,360	52	376	7.3	491.7	491.7	492.2	0.5
Y	6,640	44	291	9.4	492.5	492.5	493.3	0.8
Z	7,020	57	318	8.8	495.4	495.4	496.3	0.9

[1] Feet above confluence with Susquehanna River

[2] Elevation computed without consideration of backwater effectes from Susquehanna River

[3] 100-year flood elevation on profile is due to backwater effects from Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

BOILE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Boile Run (continued)								
AA	7,350	55	244	11.7	499.6	499.6	499.6	0.0
AB	8,075	54	283	8.5	507.1	507.1	508.0	0.9
AC	8,710	36	195	12.3	514.2	514.2	514.2	0.0
AD	8,800	37	332	7.2	518.1	518.1	518.1	0.0
AE	9,170	50	261	9.6	518.5	518.5	518.9	0.4
AF	9,910	44	228	11.0	529.3	529.3	529.3	0.0
AG	10,360	44	288	8.8	534.7	534.7	535.1	0.4
AH	11,370	45	196	10.8	547.2	547.2	547.4	0.2
AI	11,865	74	379	5.5	552.9	552.9	553.7	0.8
AJ	12,120	90	401	5.4	554.2	554.2	555.0	0.8
AK	12,195	124	1,018	2.2	557.6	557.6	557.7	0.1
AL	12,290	137	918	2.8	557.7	557.7	557.8	0.1
AM	12,515	80	456	5.2	557.8	557.8	558.0	0.2
AN	12,705	71	347	6.7	559.3	559.3	560.2	0.9
AO	13,735	88	375	5.7	567.6	567.6	568.0	0.4
AP	14,230	150	325	7.3	573.0	573.0	573.2	0.2
AQ	14,430	95	312	5.8	576.1	576.1	576.1	0.0
AR	14,490	85	505	3.3	578.4	578.4	578.4	0.0
AS	14,605	70	305	5.4	578.4	578.4	578.4	0.0
AT	15,185	56	224	7.3	581.7	581.7	582.6	0.9
AU	15,955	49	204	8.0	591.1	591.1	591.5	0.4
AV	16,415	60	188	8.2	596.9	596.9	597.4	0.5
AW	16,500	85	377	4.1	600.0	600.0	600.0	0.0
AX	16,725	62	172	8.9	600.2	600.2	600.4	0.2
AY	17,115	65	228	6.7	605.8	605.8	606.7	0.9
AZ	17,545	65	147	7.6	612.1	612.1	612.1	0.0

[1] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

BOILE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Boile Run (continued)								
BA	17,600	60	378	2.9	615.7	615.7	615.9	0.2
BB	17,945	50	135	8.7	616.6	616.6	616.6	0.0
BC	18,845	26	124	8.0	628.7	628.7	629.6	0.9
BD	18,940	26	171	5.9	632.1	632.1	632.8	0.7
BE	19,540	35	106	9.6	639.5	639.5	639.5	0.0
BF	20,155	35	116	6.6	648.1	648.1	648.7	0.6
BG	20,215	50	403	1.9	656.2	656.2	656.3	0.1
BH	21,170	25	76	9.9	661.0	661.0	661.0	0.0
BI	22,695	50	138	4.4	681.2	681.2	681.7	0.5
BJ	23,015	65	101	6.4	685.3	685.3	685.4	0.1
BK	23,095	67	362	1.7	691.1	691.1	691.1	0.0
BL	23,455	19	55	9.5	691.9	691.9	692.6	0.7
BM	23,915	37	118	4.5	698.3	698.3	699.3	1.0
BN	24,245	25	59	8.8	704.5	704.5	704.6	0.1
BO	24,595	20	74	5.5	710.1	710.1	711.0	0.9
BP	24,965	43	66	6.5	720.2	720.2	720.3	0.1
BQ	25,055	49	205	2.1	723.1	723.1	723.9	0.8
BR	25,385	25	44	7.7	737.9	737.9	738.4	0.5

[1] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

BOILE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Carbon Run								
A	250	26	151	5.1	715.9	713.8 [2]	714.6	0.8
B	468	26	141	5.5	715.9	714.6 [2]	715.1	0.5
C	729	35	180	4.3	715.9	715.9 [2]	716.7	0.8
D	781	34	203	3.8	716.2	716.2	717.2	1.0
E	991	27	117	6.6	716.5	716.5	717.5	1.0
F	1,048	26	120	6.5	717.6	717.6	718.0	0.4
G	1,364	24	138	5.6	719.0	719.0	720.0	1.0
H	1,541	23	121	6.4	720.3	720.3	720.8	0.5
I	1,642	19	102	7.6	721.2	721.2	721.5	0.3
J	1,707	27	153	5.1	722.1	722.1	722.2	0.1
K	2,236	25	94	8.3	725.2	725.2	725.2	0.0
L	2,532	26	132	5.9	728.9	728.9	728.9	0.0
M	2,616	24	129	6.0	729.3	729.3	730.3	1.0

[1] Feet above confluence with Shamokin Creek

[2] Elevation computed without consideration of backwater effects from Shamokin Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

CARBON RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Chillisquaque Creek								
A	2,650	125	1,645	9.1	456.8	441.0 [2]	441.3	0.3
B	2,815	151	1,806	8.3	456.8	441.5 [2]	441.8	0.3
C	3,825	461	3,126	4.8	456.8	443.4 [2]	443.8	0.4
D	4,825	395	2,602	5.8	456.8	444.4 [2]	445.0	0.6
E	5,425	269	1,765	8.5	456.8	444.8 [2]	445.7	0.9
F	6,150	131	1,307	11.5	456.8	448.1 [2]	448.1	0.0
G	6,325	142	1,526	9.8	456.8	449.5 [2]	449.5	0.0
H	7,660	147	1,733	8.7	456.8	452.7 [2]	453.2	0.5
I	9,190	135	1,599	9.4	456.8	455.9 [2]	456.3	0.4
J	10,455	289	3,218	4.7	458.1	458.1	458.9	0.8
K	12,315	226	2,982	5.0	459.3	459.3	460.2	0.9
L	14,555	237	3,205	4.7	460.7	460.7	461.6	0.9
M	16,540	281	4,030	3.7	461.9	461.9	462.8	0.9
N	18,120	525	5,374	2.8	462.7	462.7	463.7	1.0
O	19,970	350	4,260	3.5	463.4	463.4	464.3	0.9
P	21,720	320	3,122	4.8	464.2	464.2	465.2	1.0
Q	22,500	614	7,144	2.1	464.7	464.7	465.7	1.0
R	22,770	607	5,445	2.8	464.9	464.9	465.5	0.6
S	25,485	974	6,026	2.5	465.5	465.5	466.1	0.6
T	28,275	364	2,636	5.7	466.3	466.3	467.1	0.8
U	30,125	632	4,333	3.5	467.7	467.7	468.7	1.0
V	31,580	501	3,693	4.1	468.5	468.5	469.4	0.9
W	32,110	233	2,392	6.3	468.6	468.6	469.6	1.0

[1] Feet above confluence with West Branch Susquehanna River

[2] Elevation computed without consideration of backwater effects of West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

CHILLISQUAQUE CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Coal Run								
A	90	23	82	4.9	726.7	723.4 [2]	724.4	1.0
B	237	24	80	5.0	726.7	724.0 [2]	724.7	0.7
C	253	22	47	8.5	726.7	724.4 [2]	724.7	0.3
D	1,838	22	64	6.3	744.8	744.8	744.8	0.0
E	1,901	32	54	7.5	745.2	745.2	745.2	0.0
F	2,059	15	42	9.6	747.3	747.3	747.5	0.2

[1] Feet above confluence with Shamokin Creek

[2] Elevation computed without consideration of backwater effects from Shamokin Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

COAL RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Dalmatia Creek								
A	192	30	167	7.2	415.8	406.4 [2]	406.4	0.0
B	292	18	109	11.0	415.8	406.7 [2]	406.7	0.0
C	427	28	208	5.8	415.8	409.9 [2]	410.5	0.6
D	552	27	199	6.0	415.8	410.8 [2]	411.8	1.0
E	952	38	203	5.9	415.8	412.4 [2]	412.9	0.5
F	1,682	75	271	4.4	422.2	422.2	422.3	0.1
G	2,925	43	142	9.1	436.9	436.9	437.2	0.3
H	3,562	81	250	5.2	444.4	444.4	445.4	1.0
I	4,367	84	232	5.6	455.1	455.1	455.4	0.3
J	6,052	60	196	6.6	474.5	474.5	474.9	0.4

[1] Feet above confluence with Susquehanna River

[2] Elevation computed without consideration of backwater effectes from Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

DALMATIA CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Delaware Run								
A	8,750	468	3,067	1.7	482.1	467.4 [2]	468.4	1.0
B	9,010	469	3,165	1.7	482.1	467.5 [2]	468.5	1.0
C	9,380	154	970	5.5	482.1	468.2 [2]	469.1	0.9
D	9,680	171	1,138	4.7	482.1	469.0 [2]	469.9	0.9
E	10,010	118	1,087	4.9	482.1	471.9 [2]	472.6	0.7
F	10,140	157	2,061	2.6	482.1	477.6 [2]	477.7	0.1
G	10,740	116	1,522	3.5	482.1	477.6 [2]	477.8	0.2
H	11,060	92	1,376	3.9	482.1	479.8 [2]	480.2	0.4
I	11,210	137	1,955	2.7	482.1	479.9 [2]	480.4	0.5
J	11,830	181	2,231	2.4	482.1	479.9 [2]	480.6	0.7
K	12,250	205	2,352	2.3	482.1	480.0 [2]	480.7	0.7
L	12,460	238	2,490	2.1	482.1	480.0 [2]	480.7	0.7
M	12,910	233	1,935	2.7	482.1	480.1 [2]	480.9	0.8
N	13,185	277	1,904	2.8	482.1	480.2 [2]	481.1	0.9
O	13,430	270	1,966	2.7	482.1	480.3 [2]	481.3	1.0
P	13,745	291	1,715	3.1	482.1	480.7 [2]	481.7	1.0
Q	14,180	324	1,875	2.8	482.1	481.2 [2]	482.2	1.0
R	14,550	311	1,549	3.4	482.1	482.1 [2]	482.6	0.5
S	14,890	270	1,654	3.2	482.5	482.5	483.3	0.8
T	15,180	221	1,422	3.7	482.9	482.9	483.7	0.8
U	15,480	278	1,855	2.9	483.3	483.3	484.1	0.8
V	15,985	244	990	5.4	483.7	483.7	484.4	0.7
W	16,365	194	1,084	4.9	485.1	485.1	485.9	0.8
X	16,810	278	2,070	2.6	486.1	486.1	486.9	0.8
Y	17,230	299	1,602	3.3	486.4	486.4	487.2	0.8
Z	17,650	228	1,449	3.7	487.2	487.2	488.1	0.9

[1] Feet above confluence with West Branch Susquehanna River

[2] Elevation computed without consideration of backwater effects from West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Delaware Run (continued)								
AA	18,045	145	804	6.6	487.6	487.6	488.5	0.9
AB	18,335	175	965	5.5	488.9	488.9	489.8	0.9
AC	18,625	153	957	5.5	489.7	489.7	490.6	0.9
AD	18,975	161	693	7.6	491.0	491.0	491.6	0.6
AE	19,195	154	867	6.1	493.5	493.5	493.9	0.4
AF	19,390	156	984	5.4	496.9	496.9	496.9	0.0
AG	19,740	176	1,060	5.0	497.3	497.3	497.3	0.0
AH	20,100	186	1,370	3.9	497.4	497.4	498.4	1.0

[1] Feet above confluence with West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

DELAWARE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Dry Run								
A	1,890	138	896	2.9	479.1	467.6 [2]	468.3	0.7
B	2,220	134	876	2.9	479.2	470.6 [2]	471.3	0.7
C	2,570	121	724	3.6	479.3	471.0 [2]	471.7	0.7
D	2,775	147	673	3.8	479.3	472.8 [2]	473.5	0.7
E	3,145	116	754	3.4	479.5	473.3 [2]	474.3	1.0
F	3,450	111	691	3.7	479.8	473.8 [2]	474.7	0.9
G	3,750	109	721	3.6	480.0	474.2 [2]	475.2	0.9
H	4,115	150	771	3.3	480.1	475.2 [2]	476.1	0.9
I	4,365	175	878	2.9	480.1	475.6 [2]	476.4	0.8
J	4,620	207	958	2.7	480.2	476.0 [2]	476.7	0.7
K	4,950	223	721	3.6	480.2	476.4 [2]	477.2	0.8
L	5,380	238	1,009	2.6	480.2	477.3 [2]	478.3	1.0
M	5,770	245	2,184	1.2	484.4	484.4	484.4	0.0
N	6,035	194	1,431	1.7	484.4	484.4	484.4	0.0
O	6,425	199	523	4.7	484.5	484.5	484.5	0.0
P	6,675	220	1,297	1.9	484.5	484.5	485.2	0.7
Q	7,045	168	563	4.4	484.8	484.8	485.6	0.8
R	7,550	115	372	6.6	489.0	489.0	489.1	0.1
S	7,930	136	637	3.5	492.5	492.5	492.8	0.3
T	8,200	90	363	6.1	492.8	492.8	493.7	0.9
U	8,600	113	559	3.9	495.6	495.6	496.0	0.4
V	9,050	115	623	3.5	496.6	496.6	497.2	0.6
W	9,420	111	618	3.6	497.4	497.4	498.1	0.7
X	9,870	108	472	4.7	499.4	499.4	500.2	0.8
Y	10,230	113	653	3.4	501.4	501.4	502.1	0.7
Z	10,580	125	674	3.3	502.2	502.2	502.9	0.7

[1] Feet above confluence with Spring Run

[2] Elevation computed without consideration of backwater effects from West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

DRY RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Dry Run (continued)								
AA	10,990	143	575	3.8	503.3	503.3	503.9	0.6
AB	11,410	135	679	3.2	504.0	504.0	504.7	0.7
AC	11,865	185	811	2.3	504.4	504.4	505.2	0.8
AD	12,195	210	928	2.0	504.7	504.7	505.6	0.9
AE	12,485	220	1,279	1.5	506.5	506.5	507.4	0.9
AF	12,915	156	814	2.3	506.6	506.6	507.5	0.9

[1] Feet above confluence with Spring Run

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

DRY RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Fidlers Run								
A	285	109 [2]	788	2.7	465.6	465.6	465.8	0.2
B	1,355	168 [2]	765	2.8	475.4	475.4	476.1	0.7
C	2,320	125 [2]	349	6.1	482.4	482.4	482.8	0.4
D	3,655	173 [2]	482	3.5	491.3	491.3	491.8	0.5
E	4,115	104 [2]	226	7.5	495.4	495.4	495.7	0.3
F	4,245	55 [2]	168	10.0	497.6	497.6	497.6	0.0
G	4,369	58 [2]	219	7.7	500.3	500.3	500.3	0.0
H	4,770	93 [2]	246	6.9	508.2	508.2	508.5	0.3
I	5,105	16 [2]	141	12.0	513.5	513.5	514.3	0.8
J	5,555	30	217	7.8	519.9	519.9	520.6	0.7
K	6,145	94 [2]	438	3.9	524.0	524.0	524.7	0.7
L	6,705	80 [2]	219	7.7	528.7	528.7	529.0	0.3
M	6,945	70	283	2.6	531.5	531.5	532.4	0.9
N	7,290	23	99	7.5	535.8	535.8	536.2	0.4
O	7,855	27	159	4.7	544.8	544.8	545.1	0.3
P	8,720	23	75	10.0	552.8	552.8	553.1	0.3

[1] Feet from Corporate Limits

[2] This width extends beyond Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

FIDLERS RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Limestone Run								
A	819	68	599	4.5	467.8	459.5 [2]	459.5	0.0
B	1,056	69	648	5.0	467.8	460.9 [2]	460.9	0.0
C	1,124	76	764	3.6	467.8	462.4 [2]	462.4	0.0
D	1,312	55	299	9.1	467.8	461.8 [2]	461.8	0.0
E	1,396	67	460	8.3	467.8	463.4 [2]	463.4	0.0
F	1,568	116	629	4.0	467.8	464.7 [2]	464.7	0.0
G	1,813	90	646	3.9	467.8	465.6 [2]	465.8	0.2
H	2,046	159	731	3.5	467.8	466.0 [3]	466.2	0.2
I	2,328	299	1,723	1.5	467.8	467.2 [2]	467.5	0.3
J	2,695	133	671	3.8	467.8	467.4 [2]	467.8	0.4
K	2,961	156	884	2.9	467.8	467.8 [2]	468.1	0.3
L	3,197	58	442	5.8	467.8	467.6 [2]	468.2	0.6
M	3,818	71	533	4.8	468.7	468.7	469.1	0.4
N	4,073	153	789	3.2	469.6	469.6	469.9	0.3
O	4,496	191	928	2.7	469.9	469.9	470.4	0.5
P	5,256	123	594	4.3	470.5	470.5	471.3	0.8
Q	5,464	81	431	5.9	471.0	471.0	471.7	0.7
R	5,687	117	863	2.9	474.3	474.3	474.5	0.2
S	6,404	159	834	3.1	474.6	474.6	475.1	0.5
T	6,947	83	533	4.8	475.0	475.0	475.4	0.4
U	7,427	118	946	2.3	476.2	476.2	476.5	0.3
V	8,473	212	1,234	1.7	476.3	476.3	476.9	0.6
W	9,045	159	1,161	1.8	476.5	476.5	477.2	0.7
X	9,510	144	1,345	1.6	481.4	481.4	482.3	0.9
Y	9,850	154	1,453	1.3	481.5	481.5	482.4	0.9
Z	10,364	93	848	2.3	481.6	481.6	482.5	0.9

[1] Feet above confluence with West Branch Susquehanna River

[2] Elevation computed without consideration of backwater effects of West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

LIMESTONE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Limestone Run (continued)								
AA	11,115	346	2,660	0.7	481.8	481.8	482.7	0.9
AB	11,829	244	1,694	1.2	481.8	481.8	482.8	1.0
AC	12,264	280	1,554	1.3	481.9	481.9	482.9	1.0
AD	12,344	218	1,280	1.5	481.9	481.9	482.9	1.0
AE	12,951	211	1,166	1.7	482.2	482.2	483.1	0.9
AF	13,701	205	1,020	1.9	482.6	482.6	483.6	1.0
AG	13,938	166	747	2.6	482.8	482.8	483.7	0.9
AH	14,068	118	514	3.8	483.4	483.4	484.3	0.9
AI	14,563	356	1,636	1.2	484.0	484.0	485.0	1.0
AJ	15,592	74	358	5.5	484.6	484.6	485.4	0.8
AK	16,633	153	802	2.4	486.9	486.9	487.8	0.9
AL	17,525	179	797	2.5	488.0	488.0	488.9	0.9
AM	18,386	138	609	3.2	489.5	489.5	490.4	0.9
AN	18,720	87	402	4.9	490.4	490.4	491.2	0.8
AO	19,710	148	742	2.6	493.0	493.0	494.0	1.0
AP	20,295	105	512	3.8	494.0	494.0	494.9	0.9
AQ	20,385	80	486	4.0	494.2	494.2	495.2	1.0
AR	20,550	95	520	3.8	495.1	495.1	495.7	0.6
AS	20,800	53	321	6.1	495.3	495.3	496.0	0.7
AT	20,946	42	327	6.0	496.1	496.1	496.7	0.6
AU	21,352	38	335	5.8	497.8	497.8	498.6	0.8
AV	21,652	45	410	4.8	498.8	498.8	499.6	0.8
AW	21,864	78	594	3.3	499.4	499.4	500.2	0.8
AX	22,494	77	633	3.1	500.1	500.1	501.1	1.0
AY	23,984	238	1,357	1.4	501.1	501.1	502.1	1.0
AZ	24,080	261	2,850	1.4	505.1	505.1	506.0	0.9

[1] Feet above confluence with West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

LIMESTONE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Limestone Run (continued)								
BA	24,600	334	2,859	1.4	505.1	505.1	506.1	1.0
BB	24,880	325	2,662	1.5	505.1	505.1	506.1	1.0
BC	25,315	247	1,981	2.0	506.6	506.6	507.6	1.0
BD	25,785	202	1,568	2.5	506.9	506.9	507.9	1.0
BE	26,315	183	1,268	3.1	507.4	507.4	508.4	1.0
BF	26,665	246	1,719	2.3	508.0	508.0	508.9	0.9
BG	27,105	361	2,198	1.8	508.3	508.3	509.2	0.9
BH	27,530	306	2,168	1.7	508.5	508.5	509.4	0.9
BI	28,115	317	1,966	1.8	508.9	508.9	509.8	0.9
BJ	28,525	233	1,431	2.4	509.2	509.2	510.0	0.8
BK	29,375	232	1,086	3.2	510.1	510.1	511.0	0.9
BL	30,355	303	1,298	2.7	511.5	511.5	512.4	0.9
BM	31,625	358	1,424	2.5	513.0	513.0	513.8	0.8
BN	31,915	236	1,066	3.3	515.1	515.1	515.7	0.6
BO	32,405	238	1,222	2.9	516.3	516.3	517.0	0.7
BP	32,850	237	1,150	3.0	517.2	517.2	518.0	0.8
BQ	33,380	272	1,108	3.2	518.7	518.7	519.4	0.7

[1] Feet above confluence with West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

LIMESTONE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mahanoy Creek								
A								
B				WITHIN SUSQUEHANNA RIVER FLOODWAY [3]				
C								
D	1,525	166	2,745	8.5	427.1	422.4 [2]	423.3	0.9
E	1,820	145	2,427	9.8	427.1	422.8 [2]	423.4	0.6
F	2,120	141	2,398	9.8	427.1	423.2 [2]	423.8	0.6
G	2,305	671	5,770	5.7	427.1	424.9 [2]	425.7	0.8
H	3,035	380	4,509	5.7	427.1	425.5 [2]	426.3	0.8
I	4,070	318	3,591	7.3	427.1	426.1 [2]	426.9	0.8
J	4,850	191	2,356	10.4	427.1	426.7 [2]	427.5	0.8
K	5,050	184	2,338	10.0	427.1	427.0 [2]	428.0	1.0
L	5,510	233	3,458	6.9	428.9	428.9	429.5	0.6
M	6,170	394	4,625	5.9	429.8	429.8	430.6	0.8
N	7,115	263	3,081	8.8	431.0	431.0	431.8	0.8
O	7,915	345	3,824	7.2	432.7	432.7	433.6	0.9
P	8,730	557	7,055	4.0	434.2	434.2	435.1	0.9
Q	9,510	997	3,023	7.8	434.6	434.6	435.6	1.0
R	10,160	489	5,737	5.0	436.1	436.1	436.9	0.8
S	10,670	491	5,584	4.3	436.6	436.6	437.4	0.8
T	11,310	447	4,809	6.4	437.0	437.0	437.8	0.8
U	12,975	171	2,384	9.8	438.7	438.7	439.5	0.8
V	14,640	201	2,451	10.6	441.9	441.9	442.8	0.9
W	16,240	408	4,576	5.9	445.3	445.3	446.1	0.8
X	17,205	453	4,354	6.1	446.1	446.1	446.9	0.8
Y	17,975	338	3,491	7.2	446.8	446.8	447.7	0.9
Z	19,580	300	3,304	7.8	448.9	448.9	449.9	1.0

[1] Feet above confluence with Susquehanna River

[2] Elevation computed without consideration of backwater effectes from Susquehanna River

[3] 100-year flood elevation on profile is due to backwater effects from Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MAHANOY CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Mahanoy Creek (continued)								
AA	20,940	297	3,098	9.7	451.1	451.1	452.0	0.9
AB	22,385	325	3,566	8.2	454.2	454.2	455.1	0.9
AC	22,950	161	2,345	10.4	456.0	456.0	456.4	0.4
AD	23,465	138	2,108	11.1	456.5	456.5	457.3	0.8
AE	24,155	202	2,937	9.3	458.8	458.8	459.1	0.3
AF	24,685	432	5,309	6.2	459.9	459.9	460.5	0.6
AG	25,395	539	6,282	5.1	460.6	460.6	461.3	0.7
AH	26,015	441	4,970	6.3	461.0	461.0	461.7	0.7
AI	26,845	405	4,337	6.4	461.9	461.9	462.6	0.7
AJ	28,120	815	7,297	4.0	463.3	463.3	464.2	0.9
AK	28,485	872	6,788	4.3	463.5	463.5	464.4	0.9
AL	29,040	1,015	7,413	4.5	463.8	463.8	464.7	0.9
AM	29,825	820	6,834	4.0	464.6	464.6	465.6	1.0
AN	30,130	487	4,779	5.6	464.8	464.8	465.8	1.0
AO	30,645	522	4,924	6.0	465.2	465.2	466.1	0.9
AP	31,100	480	4,341	8.1	465.5	465.5	466.5	1.0
AQ	31,220	665	5,776	6.0	467.0	467.0	467.4	0.4
AR	32,000	935	7,467	3.6	468.0	468.0	468.6	0.6
AS	32,315	921	6,840	4.1	468.3	468.3	468.9	0.6
AT	32,775	719	5,317	4.7	468.7	468.7	469.4	0.7
AU	33,520	518	3,540	7.7	469.5	469.5	470.3	0.8
AV	33,795	496	4,020	7.6	470.1	470.1	471.0	0.9
AW	34,215	345	3,062	8.1	470.8	470.8	471.7	0.9
AX	34,555	272	2,303	11.0	471.3	471.3	472.2	0.9
AY	35,145	277	3,066	7.8	474.2	474.2	475.1	0.9
AZ	35,550	230	2,606	9.1	474.8	474.8	475.7	0.9

[1] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MAHANOY CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Mahanoy Creek (continued)								
BA	37,250	466	3,595	6.8	478.5	478.5	479.3	0.8
BB	37,930	373	2,871	8.0	479.5	479.5	480.3	0.8
BC	38,235	428	3,847	5.9	482.0	482.0	483.0	1.0
BD	38,790	233	2,009	10.9	482.1	482.1	483.1	1.0
BE	40,170	160	1,960	10.6	487.4	487.4	488.1	0.7
BF	41,390	129	1,713	12.1	491.3	491.3	491.9	0.6
BG	41,935	111	1,522	13.7	493.1	493.1	493.4	0.3
BH	42,430	141	2,422	8.6	496.0	496.0	496.2	0.2
BI	42,880	133	2,027	10.3	496.3	496.3	496.5	0.2
BJ	43,095	354	4,141	5.9	498.5	498.5	498.5	0.0
BK	43,290	363	3,366	6.8	498.6	498.6	498.6	0.0
BL	43,835	449	3,648	8.7	499.1	499.1	499.1	0.0
BM	44,055	496	5,004	5.9	499.8	499.8	500.2	0.4
BN	44,310	555	6,149	4.8	500.0	500.0	500.5	0.5
BO	44,660	476	4,382	6.4	500.2	500.2	500.6	0.4
BP	45,350	631	5,724	5.6	500.9	500.9	501.5	0.6
BQ	45,840	720	5,387	6.0	501.4	501.4	502.0	0.6
BR	46,140	718	5,590	5.9	501.7	501.7	502.4	0.7
BS	46,470	622	4,835	6.8	502.1	502.1	502.8	0.7
BT	46,935	490	3,430	9.3	502.4	502.4	503.2	0.8
BU	47,705	286	2,862	8.8	504.4	504.4	505.1	0.7
BV	48,235	167	2,292	9.1	505.3	505.3	506.1	0.8
BW	49,495	227	2,590	9.9	507.5	507.5	508.2	0.7
BX	50,080	161	2,337	9.8	508.5	508.5	509.4	0.9
BY	50,615	216	3,102	8.1	509.9	509.9	510.7	0.8
BZ	51,025	202	2,818	8.7	510.3	510.3	511.1	0.8

[1] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MAHANOY CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Mahanoy Creek (continued)								
CA	51,635	248	3,367	7.5	511.4	511.4	512.3	0.9
CB	52,230	319	3,528	9.0	511.8	511.8	512.8	1.0
CC	53,300	345	4,386	6.6	514.0	514.0	514.8	0.8
CD	53,895	427	5,520	5.5	514.6	514.6	515.4	0.8
CE	54,545	495	5,995	4.6	515.1	515.1	516.0	0.9
CF	55,490	667	7,566	4.3	515.6	515.6	516.5	0.9
CG	55,760	869	9,563	3.5	515.8	515.8	516.7	0.9
CH	56,140	777	8,322	3.8	515.9	515.9	516.8	0.9
CI	56,745	210	3,112	6.7	516.1	516.1	517.0	0.9
CJ	57,020	1,042	10,107	1.9	517.0	517.0	517.9	0.9
CK	57,050	1,055	10,345	1.8	517.2	517.2	518.1	0.9
CL	57,080	1,058	10,394	1.8	517.2	517.2	518.1	0.9
CM	58,170	755	6,470	4.4	518.0	518.0	518.8	0.8
CN	58,735	712	6,499	4.0	518.4	518.4	519.3	0.9
CO	59,390	686	5,576	4.2	518.8	518.8	519.7	0.9
CP	59,975	556	4,723	5.3	519.1	519.1	520.0	0.9
CQ	60,540	670	5,102	5.2	519.7	519.7	520.6	0.9
CR	61,235	447	3,416	6.6	520.3	520.3	521.2	0.9
CS	62,035	312	3,103	6.9	521.3	521.3	522.2	0.9
CT	62,695	187	2,199	7.8	521.9	521.9	522.9	1.0
CU	63,390	258	2,694	7.8	523.4	523.4	524.0	0.6
CV	63,865	207	2,538	8.0	524.0	524.0	524.7	0.7
CW	64,395	240	2,813	7.5	524.9	524.9	525.6	0.7
CX	65,340	124	1,718	9.9	526.1	526.1	526.9	0.8
CY	66,200	173	2,473	6.9	528.1	528.1	528.9	0.8
CZ	66,870	162	2,105	9.1	528.7	528.7	529.4	0.7

[1] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MAHANOY CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Mahanoy Creek (continued) DA	67,485	157	2,077	8.9	529.7	529.7	530.5	0.8

[1] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

MAHANOY CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.) [2]	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mahantango Creek								
A	1,198	180	1,985	12.5	400.0	393.7 [3]	394.2	0.5
B	3,208	117	1,595	15.5	400.0	400.0 [3]	400.2	0.2
C	3,858	219	2,937	8.7	403.8	403.8	404.5	0.7
D	6,526	318	3,867	7.1	409.5	409.5	410.2	0.7
E	7,758	216	2,576	11.4	410.5	410.5	411.3	0.8
F	9,102	344	3,068	8.9	415.3	415.3	415.7	0.4
G	10,916	333	3,824	7.7	418.3	418.3	418.9	0.6
H	11,990	364	4068	7.0	419.8	419.8	420.6	0.8
I	13,560	156	2,122	11.7	421.0	421.0	421.7	0.7
J	14,310	354	4,454	6.6	423.7	423.7	424.5	0.8
K	16,020	306	3,380	8.4	425.0	425.0	425.7	0.7
L	17,040	159	2,545	9.7	426.1	426.1	427.0	0.9
M	19,000	194	2954	8.6	429.0	429.0	429.9	0.9
N	19,650	410	3,534	7.9	430.0	430.0	430.9	0.9
O	20,905	291	3,204	8.4	431.6	431.6	432.6	1.0
P	25,180	282	4,718	5.1	444.2	444.2	445.2	1.0
Q	26,500	351	5,039	4.8	445.0	445.0	446.0	1.0
R	27,225	338	4,608	5.2	445.6	445.6	446.6	1.0
S	27,720	423	5,394	4.5	446.2	446.2	447.1	0.9
T	28,670	465	4,941	4.9	447.0	447.0	447.9	0.9
U	29,238	318	4,129	5.8	447.4	447.4	448.2	0.8
V	30,156	585	7,358	3.3	449.0	449.0	449.9	0.9
W	31,480	557	6,786	3.5	449.7	449.7	450.5	0.8
X	32,918	453	5,443	4.4	452.2	452.2	452.9	0.7
Y	33,890	363	5,274	4.6	452.9	452.9	453.6	0.7
Z	34,538	171	2,903	8.3	453.1	453.1	453.8	0.7

[1] Feet above confluence with Susquehanna River

[2] This width extends beyond corporate limits

[3] Elevation computed without consideration of backwater effects from Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MAHANTANGO CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.) [2]	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mahantango Creek (continued)								
AA	36,498	180	2,822	8.5	455.4	455.4	456.1	0.7
AB	37,630	307	4,876	4.9	457.9	457.9	458.8	0.9
AC	39,390	382	4,826	5.0	459.3	459.3	460.2	0.9
AD	40,784	335	3,565	6.7	460.5	460.5	461.3	0.8
AE	42,036	328	3,841	6.3	462.6	462.6	463.5	0.9
AF	43,062	454	5,086	4.7	464.3	464.3	465.2	0.9
AG	44,140	262	3,100	7.8	465.5	465.5	466.3	0.8
AH	44,780	275	4,113	5.8	467.2	467.2	468.2	1.0
AI	46,640	233	3,548	6.8	469.2	469.2	470.1	0.9
AJ	48,660	150	2,407	10.0	472.1	472.1	472.9	0.8
AK	48,900	202	3,213	7.5	474.7	474.7	474.7	0.0

[1] Feet above confluence with Susquehanna River

[2] This width extends beyond corporate limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MAHANTANGO CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Mouse Creek								
A			WITHIN SCHWABEN CREEK FLOODWAY [2]					
B	415	160	556	6.8	475.7	475.7	476.3	0.6
C	620	58	332	13.1	477.9	477.9	477.9	0.0
D	810	59	556	6.5	485.7	485.7	485.7	0.0
E	980	77	662	5.4	485.8	485.8	485.8	0.0
F	1,290	80	623	5.8	485.8	485.8	485.8	0.0
G	1,535	78	458	7.8	485.9	485.9	485.9	0.0
H	2,080	99	343	10.5	487.8	487.8	488.7	0.9
I	2,190	198	1,007	3.7	494.0	494.0	494.1	0.1
J	2,380	70	463	7.8	494.0	494.0	494.0	0.0
K	2,555	96	495	7.5	494.1	494.1	494.7	0.6
L	2,895	120	385	9.9	496.7	496.7	496.7	0.0
M	3,550	75	327	11.6	505.8	505.8	506.0	0.2
N	3,605	105	808	4.5	508.7	508.7	509.2	0.5
O	3,935	100	600	6.0	508.8	508.8	509.3	0.5
P	4,350	58	325	10.1	509.2	509.2	509.9	0.7
Q	4,745	75	398	8.3	512.9	512.9	513.3	0.4
R	5,410	86	339	10.5	521.3	521.3	521.7	0.4
S	5,450	80	677	4.9	523.2	523.2	523.6	0.4
T	5,640	100	564	4.9	523.4	523.4	523.8	0.4
U	6,365	62	279	9.9	525.6	525.6	526.0	0.4
V	6,890	65	308	9.0	531.3	531.3	531.3	0.0
W	7,580	210	549	5.5	537.2	537.2	537.9	0.7
X	7,890	330	659	6.3	541.7	541.7	542.4	0.7
Y	7,945	280	1,213	2.1	544.4	544.4	544.4	0.0
Z	8,085	100	582	4.8	544.4	544.4	544.4	0.0

[1] Feet above confluence with Schwaben Creek

[2] 100-year flood elevation on profile is due to Schwaben Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MOUSE CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Mouse Creek (continued)								
AA	8,495	55	219	11.4	545.3	545.3	545.3	0.0
AB	9,310	58	320	8.3	552.9	552.9	553.8	0.9

[1] Feet above confluence with Schwaben Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

MOUSE CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Muddy Run								
Cross section A-J modeled but not shown on Floodway Data Table A-J are controlled by the West Branch Susquehanna River floodway area.								
K	3,735	215	2,285	1.8	471.8	464.4 [2]	465.3	0.9
L	4,070	309	3,105	1.4	471.8	464.4 [2]	465.4	1.0
M	4,560	343	3,355	1.3	471.8	464.5 [2]	465.4	0.9
N	4,900	345	2,818	1.5	471.8	464.5 [2]	465.5	1.0
O	5,145	284	2,297	1.8	471.8	464.5 [2]	465.5	1.0
P	5,550	299	2,579	1.6	471.8	464.6 [2]	465.6	1.0
Q	6,170	171	1,294	3.2	471.8	464.7 [2]	465.7	1.0
R	6,580	129	955	4.4	471.8	465.0 [2]	465.9	0.9
S	6,910	65	564	7.4	471.8	469.3 [2]	469.3	0.0
T	7,300	189	1,730	2.4	471.8	469.4 [2]	469.9	0.5
U	7,635	154	1,234	3.4	471.8	469.4 [2]	470.0	0.6
V	7,835	116	1,151	3.6	471.8	469.5 [2]	470.1	0.6
W	8,070	52	707	5.9	471.9	471.9	472.5	0.7
X	8,340	62	879	4.8	473.9	473.9	474.2	0.3
Y	8,780	111	1,283	3.3	473.9	473.9	474.7	0.8
Z	9,040	193	2,140	2.0	474.0	474.0	474.9	0.9
AA	9,470	196	2,075	1.9	474.0	474.0	475.0	1.0
AB	9,810	245	2,363	1.7	474.2	474.2	475.2	1.0
AC	10,270	282	2,884	1.4	474.4	474.4	475.3	0.9
AD	10,870	288	1,933	2.0	474.6	474.6	475.6	1.0
AE	11,490	235	1,468	2.7	475.2	475.2	476.1	0.9
AF	11,965	199	1,156	3.4	475.7	475.7	476.7	1.0
AG	12,455	128	717	5.4	476.7	476.7	477.5	0.8
AH	12,860	220	1,384	2.8	477.7	477.7	478.6	0.9

[1] Feet above confluence with West Branch Susquehanna River

[2] Elevation computed without consideration of backwater effects of West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

MUDDY RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Muddy Run (continued)								
AI	13,365	134	855	4.6	478.1	478.1	479.0	0.9
AJ	14,190	197	1,234	3.2	479.0	479.0	479.9	0.9
AK	14,610	212	1,266	3.1	479.3	479.3	480.3	1.0
AL	14,860	240	1,326	2.9	479.6	479.6	480.6	1.0
AM	15,555	185	907	4.3	480.3	480.3	481.3	1.0
AN	15,885	200	981	4.0	481.2	481.2	482.1	0.9
AO	16,795	299	1,492	2.6	482.2	482.2	483.2	1.0
AP	17,095	239	1,036	3.8	482.6	482.6	483.5	0.9
AQ	17,195	225	1,549	2.5	485.4	485.4	486.4	1.0
AR	17,765	275	2,231	1.6	486.9	486.9	487.9	1.0
AS	18,035	202	1,484	2.4	486.9	486.9	487.9	1.0
AT	18,270	139	846	4.3	487.0	487.0	487.9	0.9
AU	18,625	79	629	5.7	490.8	490.8	491.3	0.5
AV	18,945	152	1,402	2.6	491.7	491.7	492.6	0.9
AW	19,185	229	2,013	1.8	491.8	491.8	492.7	0.9
AX	19,392	197	1,526	2.4	491.8	491.8	492.8	1.0
AY	19,742	159	1,266	2.8	492.0	492.0	492.9	0.9
AZ	20,122	213	1,204	3.0	492.3	492.3	493.2	0.9
BA	20,612	120	540	6.2	493.0	493.0	493.9	0.9
BB	20,912	136	772	4.3	494.3	494.3	495.2	0.9
BC	21,272	152	824	4.1	494.9	494.9	495.9	1.0
BD	21,692	142	808	4.1	495.7	495.7	496.6	0.9
BE	21,982	157	870	3.9	496.2	496.2	497.1	0.9

[1] Feet above confluence with West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

MUDDY RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Pocahontas Creek								
A	375	260	1,840	1.9	539.2	539.2	540.1	0.9
B	970	325	1,481	2.3	539.6	539.6	540.5	0.9
C	2,315	226	756	4.5	542.0	542.0	542.8	0.8
D	3,285	231	1,054	3.3	546.3	546.3	547.3	1.0
E	4,745	84	418	6.8	550.6	550.6	551.3	0.7
F	5,440	100	537	5.3	553.7	553.7	554.6	0.9
G	6,035	103	494	5.7	555.5	555.5	556.4	0.9
H	7,220	130	437	6.5	559.9	559.9	559.9	0.0
I	8,090	173	726	3.9	564.0	564.0	565.0	1.0
J	9,020	181	631	4.5	567.8	567.8	568.1	0.3
K	10,030	165	782	3.6	571.6	571.6	572.5	0.9
L	11,030	52	216	10.0	576.0	576.0	576.0	0.0
M	11,215	48	279	7.7	577.8	577.8	578.8	1.0
N	14,680	44	150	8.2	602.3	602.3	602.3	0.0
O	15,205	77	305	4.0	605.7	605.7	606.5	0.8
P	15,945	70	182	6.7	610.4	610.4	610.5	0.1

[1] Feet above Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

POCAHONTAS CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Quaker Run								
A	495	24	143	5.3	1065.9	1065.9	1066.1	0.2
B	1,495	46	235	3.2	1069.2	1069.2	1070.0	0.8
C	2,700	35	91	3.1	1080.3	1080.3	1080.6	0.3
D	3,680	17	60	3.7	1092.4	1092.4	1093.3	0.9
E	3,855	17	63	3.5	1094.2	1094.2	1095.0	0.8

[1] Feet above Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

QUAKER RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE** [1]	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Schwaben Creek								
A			WITHIN MAHANOY CREEK FLOODWAY [3]					
B	530	60	599	13.7	468.7	466.1 [2]	467.1	1.0
C	560	60	689	11.9	468.7	467.6 [2]	468.6	1.0
D	890	371	1,936	5.0	470.7	470.7	471.1	0.4
E	1,370	243	1,593	5.9	471.1	471.1	471.6	0.5
F	1,870	201	1,241	8.1	471.7	471.7	472.2	0.5
G	2,245	178	1,254	7.5	472.8	472.8	473.5	0.7
H	2,560	250	1,088	11.2	473.6	473.6	473.7	0.1
I	2,820	250	1,500	7.4	475.9	475.9	476.4	0.5
J	3,050	357	2,383	4.5	476.9	476.9	477.6	0.7
K	3,440	287	1,583	6.2	477.7	477.7	478.3	0.6
L	4,060	151	1,444	5.7	479.3	479.3	480.0	0.7

[1] Feet above confluence with Mahanoy Creek

[2] Elevation computed without consideration of backwater effects from Mahanoy Creek

[3] 100-year flood elevation on profile is due to Mahanoy Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SCHWABEN CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Shamokin Creek								
A	250 [1]	234	3,551	5.1	443.8	436.2 [3]	436.4	1.0
B	1320 [1]	334	3,485	5.2	443.8	437.7 [3]	437.7	0.8
C	3265 [1]	1,063	9,995	1.8	443.8	438.8 [3]	438.6	0.6
D	5170 [1]	270	2,330	7.7	443.8	439.1 [3]	438.7	0.4
E	8415 [1]	336	3,189	5.6	443.8	442.7 [3]	442.5	0.6
F	11240 [1]	1,519	15,034	1.2	444.3	444.3	444.6	0.3
G	17505 [1]	1,115	7,322	2.0	451.9	451.9	452.9	1.0
H	20290 [1]	1,000	4,447	3.4	454.3	454.3	454.9	0.6
I	22353 [1]	135	1,523	9.8	458.2	458.2	458.1	0.0
J	24273 [1]	297	2,656	5.6	462.5	462.5	463.4	0.9
K	27623 [1]	847	6,125	2.4	466.4	466.4	467.3	0.9
L	29463 [1]	846	5,113	2.9	467.7	467.7	468.6	0.9
M	31197 [1]	988	6,198	2.4	469.2	469.2	470.2	1.0
N	33992 [1]	715	3,743	4.0	472.1	472.1	472.9	0.8
O	37612 [1]	194	1,875	7.9	478.1	478.1	478.3	0.2
P	22,170 [2]	111	749	7.1	581.9	581.9	582.9	1.0
Q	22,390 [2]	88	613	8.6	582.3	582.3	583.3	1.0
R	22,810 [2]	88	710	6.7	583.5	583.5	584.4	0.9
S	23,380 [2]	73	570	8.4	585.6	585.6	586.4	0.8
T	23,875 [2]	117	601	7.9	588.7	588.7	589.4	0.7
U	24,430 [2]	130	414	11.5	589.9	589.9	590.8	0.9
V	24,790 [2]	140	590	8.1	592.9	592.9	593.4	0.5
W	25,275 [2]	500	861	5.5	595.2	595.2	595.9	0.7
X	25,690 [2]	483	1,577	3.0	597.2	597.2	598.1	0.9
Y	26,440 [2]	124	377	12.4	599.8	599.8	600.4	0.6
Z	26,925 [2]	122	499	9.4	603.4	603.4	604.3	0.9

[1] Feet above confluence with Susquehanna River

[2] Feet about limit of detailed study in Township of Shamokin

[3] Elevation computed without consideration of backwater effects from Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SHAMOKIN CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Shamokin Creek (continued)								
AA	27,475	96	448	10.5	605.8	605.8	606.3	0.5
AB	28,025	82	427	11.0	609.5	609.5	610.5	1.0
AC	28,640	95	590	7.9	615.6	615.6	615.6	0.0
AD	40,940	61	507	8.7	712.7	712.7	712.7	0.0
AE	41,180	78	611	7.2	713.1	713.1	713.3	0.2
AF	41,280	65	481	9.2	713.1	713.1	713.3	0.2
AG	41,330	64	610	7.3	715.1	715.1	715.3	0.2
AH	41,900	77	538	6.8	716.1	716.1	716.2	0.1
AI	41,920	77	682	5.3	717.7	717.7	717.9	0.2
AJ	42,240	69	524	7.0	717.7	717.7	717.9	0.2
AK	42,280	69	551	6.6	718.0	718.0	718.2	0.2
AL	42,610	66	419	8.7	718.1	718.1	718.3	0.2
AM	42,670	67	427	8.6	718.3	718.3	718.4	0.1
AN	42,760	67	489	7.5	719.1	719.1	719.3	0.2
AO	42,920	48	269	13.6	719.6	719.6	719.6	0.0
AP	43,170	61	451	8.1	721.4	721.4	721.4	0.0
AQ	43,420	68	387	9.4	721.5	721.5	721.5	0.0
AR	43,525	70	522	7.0	722.3	722.3	723.3	1.0
AS	43,975	62	302	12.1	723.3	723.3	723.5	0.2
AT	44,270	65	297	12.3	724.6	724.6	724.6	0.0
AU	44,370	62	408	8.9	726.1	726.1	727.1	1.0
AV	44,590	60	377	8.6	728.0	728.0	728.0	0.0
AW	44,825	43	296	11.0	729.5	729.5	729.5	0.0
AX	44,890	46	289	11.3	729.8	729.8	729.8	0.0
AY	45,040	46	247	13.2	730.3	730.3	730.3	0.0
AZ	45,400	50	291	11.2	734.7	734.7	734.7	0.0

[1] Feet above confluence with Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

SHAMOKIN CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Shamokin Creek (continued)								
BA	45,760 [1]	71	365	8.9	736.5	736.5	737.0	0.5
BB	46,160 [1]	45	306	10.6	738.5	738.5	739.1	0.6
BC	46,440 [1]	114	428	7.6	740.8	740.8	741.7	0.9
BD	46,680 [1]	153	392	8.3	743.3	743.3	743.4	0.1
BE	46,820 [1]	105	489	6.7	743.9	743.9	744.8	0.9
BF	47,230 [1]	50	339	9.6	744.6	744.6	745.5	0.9
BG	47,320 [1]	43	241	13.5	746.9	746.9	746.9	0.0
BH	47,325 [1]	54	423	7.7	747.7	747.7	748.1	0.4
BI	47,410 [1]	54	445	7.3	748.1	748.1	748.5	0.4
BJ	47,510 [1]	47	338	9.6	748.2	748.2	748.5	0.3
BK	47,570 [1]	40	235	13.8	748.5	748.5	748.5	0.0
BL	3,960 [2]	40	269	4.8	1049.0	1049.0	1049.8	0.8
BM	5,450 [2]	135	424	2.8	1053.0	1053.0	1053.9	0.9
BN	5,750 [2]	21	186	5.4	1054.5	1054.5	1055.1	0.6
BO	6,950 [2]	137	236	4.2	1057.7	1057.7	1058.0	0.3
BP	7,280 [2]	174	451	2.2	1059.1	1059.1	1060.1	1.0
BQ	7,860 [2]	166	755	1.2	1061.4	1061.4	1062.4	1.0
BR	8,180 [2]	80	485	1.8	1061.7	1061.7	1062.7	1.0
BS	8,860 [2]	35	180	4.6	1063.6	1063.6	1064.3	0.7
BT	10,120 [2]	50	112	9.4	1072.4	1072.4	1072.4	0.0

[1] Feet above confluence with Susquehanna River

[2] Feet above limit of detailed study in Township of Mt. Carmel

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SHAMOKIN CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [2]**	**WIDTH [1] (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
South Branch Roaring Creek								
A	50	182/65	1,409	6.8	603.5	603.5	603.7	0.2
B	810	392/350	2,362	4.1	606.3	606.3	607.2	0.9
C	1,500	725/390	3,674	2.6	609.4	609.4	610.4	1.0
D	2,230	410/280	2,927	2.4	613.6	613.6	614.6	1.0
E	2,690	317/45	2,176	3.2	617.2	617.2	617.9	0.7
F	3,410	280/15	1,520	4.6	618.7	618.7	619.5	0.8
G	4,130	375/15	2,311	3.0	621.6	621.6	622.6	1.0
H	4,755	491/14	1,413	5.0	626.8	626.8	627.3	0.5
I	5,355	639/35	2,210	3.2	632.2	632.2	633.0	0.8
J	6,095	520/135	1,241	5.6	638.8	638.8	639.7	0.9
K	7,275	95/20	796	8.8	648.8	648.8	649.3	0.5
L	7,835	149/15	906	7.7	653.5	653.5	654.2	0.7
M	8,235	228/20	1,276	5.5	657.2	657.2	657.7	0.5
N	9,390	72/50	714	9.8	664.6	664.6	665.4	0.8
O	9,950	134/100	1,485	4.7	670.2	670.2	671.2	1.0
P	10,815	138/60	1,292	5.4	671.9	671.9	672.9	1.0
Q	11,765	250/20	1,347	5.2	677.1	677.1	677.9	0.8
R	12,765	222/210	1,082	6.5	684.1	684.1	685.0	0.9
S	13,295	100/60	706	9.9	688.1	688.1	688.8	0.7
T	13,965	315/300	1,735	4.0	693.5	693.5	694.4	0.9
U	14,375	237/237	1,081	6.5	695.5	695.5	696.1	0.6
V	15,125	134/40	889	7.9	701.1	701.1	702.0	0.9
W	15,765	227/60	1,155	6.1	706.9	706.9	707.8	0.9
X	16,655	205/70	950	7.4	714.3	714.3	715.3	1.0

[1] Width/Width within County

[2] Feet above Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SOUTH BRANCH ROARING CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Spring Run								
A	1,315	90	449	2.6	478.1	462.2 [2]	463.0	0.8
B	1,865	31	112	10.4	478.1	466.5 [2]	466.5	0.0
C	2,292	29	141	8.3	478.1	472.5 [2]	473.5	1.0
D	2,697	53	199	5.9	478.1	477.4 [2]	477.4	0.0
E	3,022	90	358	3.3	478.9	478.9	478.9	0.0
F	3,361	201	286	4.1	484.9	484.9	484.9	0.0
G	3,547	380	2,279	0.5	486.1	486.1	487.1	1.0
H	3,709	235	1,234	0.8	486.1	486.1	487.1	1.0
I	4,079	64	395	2.5	486.1	486.1	487.1	1.0
J	4,369	32	170	5.9	486.2	486.2	487.2	1.0
K	4,927	15	91	11.1	494.5	494.5	494.5	0.0
L	5,107	34	217	4.6	496.2	496.2	497.0	0.8
M	5,306	79	637	1.3	497.7	497.7	498.5	0.8
N	5,806	55	356	2.4	497.8	497.8	498.6	0.8
O	6,276	61	123	7.0	498.9	498.9	499.3	0.4
P	6,896	89	367	2.0	501.4	501.4	502.2	0.8
Q	7,621	49	102	7.2	504.5	504.5	504.6	0.1
R	8,406	69	199	3.7	509.9	509.9	510.7	0.8
S	8,856	34	88	5.2	511.7	511.7	512.4	0.7
T	9,186	23	73	6.2	513.8	513.8	514.8	1.0
U	9,506	47	89	4.2	516.9	516.9	517.4	0.5
V	9,860	161	738	0.5	524.1	524.1	524.9	0.8
W	10,260	105	305	1.2	524.1	524.1	524.9	0.8
X	10,665	53	65	5.8	525.5	525.5	525.9	0.4
Y	10,975	48	92	4.1	528.5	528.5	529.4	0.9
Z	11,380	28	25	5.2	532.2	532.2	532.4	0.2

[1] Feet above confluence with West Branch Susquehanna River

[2] Elevation computed without consideration of backwater effects of West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SPRING RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Spring Run (continued)								
AA	11,740	35	45	2.9	535.7	535.7	535.8	0.1
AB	12,145	25	25	5.2	540.2	540.2	541.0	0.8
AC	12,565	44	45	2.9	545.7	545.7	546.0	0.3

[1] Feet above confluence with West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

SPRING RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River								
A	100	4,229	78,806	6.7	399.4	399.4	400.4	1.0
B	704	4,269	67,180	7.8	399.5	399.5	400.5	1.0
C	1,353	4,469	72,052	7.2	400.2	400.2	401.2	1.0
D	1,806	4,543	69,915	7.5	400.4	400.4	401.4	1.0
E	2,124	4,516	68,290	7.6	400.6	400.6	401.6	1.0
F	2,502	4,480	65,671	7.9	401.0	401.0	402.0	1.0
G	2,903	4,156	62,897	8.3	401.4	401.4	402.4	1.0
H	3,475	3,885	69,801	7.5	401.9	401.9	402.9	1.0
I	4,044	3,396	63,079	8.3	402.2	402.2	403.2	1.0
J	4,409	3,988	69,471	7.5	402.5	402.5	403.5	1.0
K	4,870	3,767	66,850	7.8	402.8	402.8	403.8	1.0
L	5,289	3,362	56,864	9.2	402.8	402.8	403.8	1.0
M	5,586	3,134	57,110	9.1	403.0	403.0	404.0	1.0
N	5,974	3,029	65,933	7.9	403.7	403.7	404.7	1.0
O	6,594	2,602	60,027	8.7	404.0	404.0	404.9	0.9
P	7,269	2,498	55,724	9.4	404.1	404.1	405.2	1.0
Q	8,068	2,675	53,232	9.8	404.6	404.6	405.6	0.9
R	9,477	2,565	53,816	9.6	405.7	405.7	406.7	1.0
S	10,380	2,419	49,763	10.4	406.3	406.3	407.2	0.9
T	11,551	2,363	48,512	10.7	407.3	407.3	408.1	0.8
U	12,684	2,724	55,152	9.4	408.7	408.7	409.4	0.7
V	13,693	3,168	60,096	8.6	409.9	409.9	410.7	0.8
W	14,911	3,560	66,270	7.8	411.8	411.8	412.6	0.8
X	15,799	4,273	77,809	6.7	412.7	412.7	413.5	0.9
Y	16,680	4,350	74,611	7.0	413.2	413.2	414.0	0.8
Z	17,486	4,431	76,151	6.8	413.7	413.7	414.4	0.7

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
AA	18,024	4,522	78,777	6.6	414.1	414.1	414.8	0.7
AB	19,213	4,840	89,039	5.8	415.1	415.1	415.6	0.5
AC	20,060	5,070	93,598	5.5	415.6	415.6	416.1	0.5
AD	21,193	4,686	96,597	5.4	416.1	416.1	416.6	0.5
AE	22,483	4,191	98,485	5.3	416.4	416.4	416.9	0.5
AF	23,692	3,725	94,744	5.5	416.7	416.7	417.1	0.4
AG	24,298	3,432	87,232	5.9	416.7	416.7	417.2	0.5
AH	24,816	3,259	91,481	5.7	416.9	416.9	417.3	0.4
AI	25,468	3,210	90,619	5.7	417.0	417.0	417.4	0.4
AJ	26,052	3,139	88,753	5.8	417.1	417.1	417.5	0.4
AK	26,746	3,161	85,549	6.1	417.2	417.2	417.6	0.4
AL	27,608	3,338	85,012	6.1	417.4	417.4	417.8	0.4
AM	28,757	3,313	78,818	6.6	417.8	417.8	418.2	0.4
AN	29,577	3,411	78,545	6.6	418.1	418.1	418.5	0.4
AO	30,361	3,835	88,441	5.9	418.5	418.5	418.9	0.4
AP	31,676	4,093	97,857	5.3	418.8	418.8	419.3	0.5
AQ	32,920	3,928	92,647	5.6	419.0	419.0	419.5	0.5
AR	33,853	3,899	83,333	6.2	419.2	419.2	419.8	0.6
AS	34,817	4,005	83,637	6.2	419.7	419.7	420.2	0.5
AT	35,780	4,154	85,995	6.0	419.9	419.9	420.6	0.7
AU	36,665	4,077	85,953	6.0	420.3	420.3	420.8	0.5
AV	37,713	4,058	83,333	6.2	420.6	420.6	421.2	0.6
AW	38,737	4,003	87,106	6.0	421.0	421.0	421.6	0.6
AX	39,730	3,824	81,108	6.4	421.3	421.3	421.8	0.5
AY	41,038	4,645	86,962	6.0	421.8	421.8	422.4	0.6
AZ	42,079	4,713	80,194	6.5	422.1	422.1	422.7	0.6

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
BA	42,934	4,802	78,912	6.6	422.5	422.5	423.0	0.5
BB	43,582	4,763	76,135	6.8	423.0	423.0	423.5	0.5
BC	44,264	4,642	77,904	6.7	423.7	423.7	424.2	0.5
BD	44,883	4,549	77,137	6.7	424.3	424.3	424.7	0.4
BE	45,495	4,539	78,836	6.6	424.9	424.9	425.3	0.4
BF	46,162	4,460	78,419	6.6	425.6	425.6	425.9	0.3
BG	46,950	4,122	74,919	6.9	426.4	426.4	426.7	0.3
BH	47,748	3,789	73,303	7.1	426.9	426.9	427.1	0.2
BI	48,438	3,180	65,391	7.9	427.2	427.2	427.3	0.1
BJ	50,009	2,828	70,782	7.1	427.8	427.8	428.1	0.3
BK	51,686	3,495	86,324	5.9	428.3	428.3	428.9	0.6
BL	53,023	4,311	109,300	4.6	428.7	428.7	429.4	0.7
BM	53,889	4,364	93,228	5.4	428.7	428.7	429.4	0.7
BN	54,723	4,481	95,698	5.3	429.1	429.1	429.8	0.7
BO	55,625	4,651	86,993	5.8	429.5	429.5	430.2	0.7
BP	56,786	5,071	88,937	5.7	430.0	430.0	430.6	0.6
BQ	57,555	5,396	91,125	5.5	430.4	430.4	431.0	0.6
BR	58,062	5,561	93,419	5.4	430.9	430.9	431.4	0.5
BS	58,836	5,046	96,252	5.3	431.2	431.2	431.7	0.5
BT	59,638	4,243	84,103	6.0	431.4	431.4	431.8	0.4
BU	60,248	4,468	92,712	5.5	431.7	431.7	432.1	0.4
BV	60,727	4,364	90,614	5.6	431.8	431.8	432.2	0.4
BW	61,408	4,515	93,563	5.4	432.0	432.0	432.5	0.5
BX	61,810	4,488	94,771	5.3	432.1	432.1	432.6	0.5
BY	62,205	4,421	99,608	5.1	432.3	432.3	432.8	0.5
BZ	62,710	4,315	93,075	5.4	432.3	432.3	432.9	0.6

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
CA	63,475	4,139	92,250	5.5	432.5	432.5	433.0	0.5
CB	64,171	3,997	92,090	5.5	432.6	432.6	433.2	0.6
CC	64,781	3,903	92,708	5.5	432.7	432.7	433.3	0.6
CD	65,542	3,646	89,967	5.6	432.8	432.8	433.4	0.6
CE	66,398	3,270	79,648	6.3	433.1	433.1	433.6	0.5
CF	67,007	3,170	79,555	6.4	433.2	433.2	433.9	0.7
CG	67,579	3,180	81,012	6.2	433.4	433.4	434.1	0.7
CH	68,095	3,183	82,318	6.1	433.5	433.5	434.2	0.7
CI	68,669	3,238	84,880	6.0	433.6	433.6	434.4	0.8
CJ	69,303	3,033	77,856	6.5	433.7	433.7	434.5	0.8
CK	69,889	2,923	74,928	6.7	433.8	433.8	434.6	0.8
CL	70,396	2,833	71,929	7.0	433.9	433.9	434.8	0.9
CM	70,792	2,870	70,365	7.2	434.0	434.0	434.9	0.9
CN	71,126	2,959	72,055	7.0	434.3	434.3	435.0	0.7
CO	71,416	2,976	69,813	7.2	434.4	434.4	435.0	0.6
CP	71,751	3,040	76,049	6.6	434.7	434.7	435.3	0.6
CQ	72,156	3,055	68,431	7.4	434.7	434.7	435.3	0.6
CR	72,583	3,114	72,578	7.0	434.8	434.8	435.5	0.7
CS	73,091	3,193	72,266	7.0	434.9	434.9	435.7	0.8
CT	73,567	3,226	73,846	6.8	435.0	435.0	435.9	0.9
CU	74,148	3,207	74,717	6.8	435.3	435.3	436.1	0.8
CV	74,782	3,121	74,973	6.7	435.6	435.6	436.4	0.8
CW	75,229	3,059	72,956	6.9	435.7	435.7	436.5	0.8
CX	75,751	2,970	68,482	7.4	436.0	436.0	436.8	0.8
CY	76,334	3,050	74,629	6.8	436.4	436.4	437.1	0.7
CZ	76,805	3,112	72,637	7.0	436.5	436.5	437.2	0.7

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
DA	77,800	3,237	72,994	6.9	437.1	437.1	437.8	0.7
DB	78,441	3,266	76,282	6.6	437.7	437.7	438.4	0.7
DC	79,296	3,349	75,185	6.7	438.0	438.0	438.7	0.7
DD	79,742	3,553	87,044	5.8	438.3	438.3	439.0	0.7
DE	80,353	3,301	83,595	6.0	438.4	438.4	439.1	0.7
DF	80,720	3,153	84,172	6.0	438.6	438.6	439.2	0.6
DG	81,084	3,005	81,181	6.2	438.6	438.6	439.3	0.7
DH	81,755	2,834	76,156	6.6	438.7	438.7	439.4	0.7
DI	82,299	2,880	78,761	6.4	438.9	438.9	439.5	0.6
DJ	82,662	2,818	75,253	6.7	439.0	439.0	439.6	0.6
DK	83,215	2,763	68,502	7.4	439.2	439.2	439.8	0.6
DL	83,601	2,778	69,065	7.3	439.4	439.4	440.0	0.6
DM	84,200	2,826	74,411	6.8	439.6	439.6	440.3	0.7
DN	84,858	2,963	76,670	6.6	439.9	439.9	440.5	0.6
DO	85,276	3,059	77,518	6.5	440.0	440.0	440.6	0.6
DP	85,663	3,074	79,860	6.3	440.1	440.1	440.8	0.7
DQ	86,056	3,168	78,959	6.4	440.2	440.2	440.8	0.6
DR	86,474	3,199	79,879	6.3	440.3	440.3	441.0	0.7
DS	86,834	3,317	79,761	6.3	440.4	440.4	441.0	0.6
DT	87,213	3,233	80,262	6.3	440.6	440.6	441.2	0.6
DU	87,642	3,335	81,512	6.2	440.7	440.7	441.3	0.6
DV	87,993	3,361	80,173	6.3	440.8	440.8	441.4	0.6
DW	88,383	3,238	79,191	6.4	440.9	440.9	441.5	0.6
DX	88,835	3,296	79,022	6.4	441.0	441.0	441.6	0.6
DY	89,225	3,306	78,370	6.4	441.1	441.1	441.7	0.6
DZ	89,611	3,310	76,320	6.6	441.2	441.2	441.8	0.6

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Susquehanna River (continued)								
EA	89,959	3,356	75,098	6.7	441.3	441.3	441.9	0.6
EB	90,466	3,360	71,448	7.1	441.5	441.5	442.0	0.5
EC	91,064	3,403	74,228	6.8	441.8	441.8	442.3	0.5
ED	91,494	3,443	75,526	6.7	441.9	441.9	442.5	0.6
EE	91,796	3,478	76,033	6.6	442.0	442.0	442.6	0.6
EF	92,114	3,503	78,400	6.4	442.2	442.2	442.7	0.5
EG	92,426	3,523	85,244	5.9	442.4	442.4	442.9	0.5
EH	92,738	3,723	92,144	5.5	442.6	442.6	443.1	0.5
EI	93,373	3,776	94,022	5.4	442.7	442.7	443.2	0.5
EJ	93,962	3,546	88,975	5.7	442.8	442.8	443.3	0.5
EK	94,404	3,473	86,475	5.8	442.9	442.9	443.4	0.5
EL	94,843	3,498	88,436	5.7	443.1	443.1	443.6	0.5
EM	95,226	3,443	86,688	5.8	443.2	443.2	443.6	0.4
EN	95,638	3,385	86,010	5.9	443.3	443.3	443.7	0.4
EO	96,015	3,388	88,166	5.7	443.4	443.4	443.8	0.4
EP	96,437	3,451	90,529	5.6	443.5	443.5	443.9	0.4
EQ	96,876	3,814	97,299	5.2	443.6	443.6	444.1	0.5
ER	97,255	3,822	96,898	5.2	443.7	443.7	444.1	0.4
ES	97,663	3,224	88,803	5.7	443.7	443.7	444.1	0.4
ET	98,032	3,074	88,153	5.7	443.8	443.8	444.2	0.4
EU	98,440	2,915	80,995	6.2	443.8	443.8	444.2	0.4
EV	98,848	3,022	83,204	6.1	443.9	443.9	444.4	0.5
EW	99,235	2,836	86,723	5.8	444.1	444.1	444.5	0.4
EX	100,073	2,527	82,373	6.1	444.2	444.2	444.6	0.4
EY	100,462	2,464	80,906	6.2	444.3	444.3	444.7	0.4
EZ	100,877	2,382	76,520	6.6	444.3	444.3	444.7	0.4

[1] Distance in feet above Snyder County boundary

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FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
FA	101,373	2,396	67,813	7.5	444.3	444.3	444.7	0.4
FB	101,864	2,333	68,529	7.4	444.4	444.4	444.8	0.4
FC	102,349	2,304	68,665	7.4	444.6	444.6	445.0	0.4
FD	102,967	2,341	70,645	7.2	444.8	444.8	445.2	0.4
FE	103,462	2,330	71,421	7.1	444.9	444.9	445.3	0.4
FF	104,428	2,359	73,048	6.9	445.2	445.2	445.6	0.4
FG	105,211	2,441	75,209	6.7	445.4	445.4	445.8	0.4
FH	105,804	2,414	74,083	6.8	445.5	445.5	445.9	0.4
FI	106,415	2,261	69,264	7.3	445.6	445.6	445.9	0.3
FJ	106,957	2,176	66,109	7.6	445.7	445.7	446.0	0.3
FK	107,458	2,072	60,884	8.3	445.7	445.7	446.1	0.4
FL	107,901	2,036	59,357	8.5	445.8	445.8	446.2	0.4
FM	108,713	1,928	59,834	8.4	446.1	446.1	446.5	0.4
FN	110,313	1,036	29,633	6.2	447.5	447.5	447.8	0.3
FO	110,895	923	26,133	7.0	447.5	447.5	447.8	0.3
FP	111,160	948	30,726	6.0	447.7	447.7	448.1	0.3
FQ	111,402	1,202	33,735	5.5	448.0	448.0	448.3	0.3
FR	111,748	1,363	36,547	5.0	448.1	448.1	448.4	0.4
FS	112,163	1,361	36,298	5.0	448.2	448.2	448.5	0.3
FT	112,520	1,297	34,535	5.3	448.2	448.2	448.5	0.3
FU	113,071	1,249	33,333	5.5	448.3	448.3	448.6	0.3
FV	113,507	1,147	31,797	5.8	448.4	448.4	448.6	0.3
FW	113,788	1,221	31,930	5.7	448.4	448.4	448.7	0.3
FX	114,150	1,193	31,441	5.8	448.5	448.5	448.8	0.3
FY	114,585	1,202	30,601	6.0	448.5	448.5	448.8	0.3
FZ	114,972	1,175	28,616	6.4	448.6	448.6	448.9	0.3

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
GA	115,332	1,134	27,853	6.6	448.7	448.7	449.0	0.3
GB	115,763	1,107	30,253	6.0	448.7	448.7	449.2	0.4
GC	116,167	1,185	31,128	5.9	448.8	448.8	449.3	0.4
GD	116,542	1,196	31,057	5.9	448.9	448.9	449.3	0.4
GE	116,916	1,201	30,851	5.9	449.0	449.0	449.4	0.4
GF	117,348	1,229	30,984	5.9	449.0	449.0	449.4	0.4
GG	117,760	1,172	30,410	6.0	449.2	449.2	449.6	0.4
GH	118,164	1,261	31,210	5.9	449.2	449.2	449.7	0.5
GI	118,547	1,350	34,556	5.3	449.4	449.4	449.9	0.5
GJ	118,952	1,357	32,758	5.6	449.4	449.4	449.9	0.5
GK	119,702	2,038	53,925	5.3	449.6	449.6	450.1	0.4
GL	120,131	1,851	49,700	5.8	449.7	449.7	450.1	0.4
GM	120,506	1,750	45,768	6.3	449.7	449.7	450.1	0.4
GN	120,906	1,625	42,740	6.7	449.7	449.7	450.1	0.4
GO	121,293	1,659	42,730	6.7	449.8	449.8	450.2	0.4
GP	121,697	1,651	43,927	6.5	449.9	449.9	450.3	0.5
GQ	122,133	1,701	45,325	6.3	450.0	450.0	450.5	0.5
GR	122,518	1,647	44,771	6.4	450.2	450.2	450.5	0.3
GS	122,933	1,653	46,135	6.2	450.2	450.2	450.6	0.5
GT	123,339	1,650	45,869	6.2	450.2	450.2	450.7	0.5
GU	123,689	1,673	46,991	6.1	450.3	450.3	450.8	0.5
GV	124,127	1,746	49,047	5.8	450.4	450.4	450.9	0.5
GW	124,500	1,757	49,965	5.7	450.5	450.5	451.0	0.5
GX	124,927	1,845	52,294	5.5	450.6	450.6	451.1	0.5
GY	125,317	1,990	53,713	5.3	450.7	450.7	451.2	0.5
GZ	125,715	1,975	53,503	5.4	450.7	450.7	451.3	0.6

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
HA	126,144	1,963	52,665	5.4	450.8	450.8	451.3	0.5
HB	126,528	1,960	51,210	5.6	450.8	450.8	451.4	0.5
HC	126,950	1,939	52,135	5.5	450.9	450.9	451.4	0.5
HD	127,327	1,937	51,414	5.6	451.0	451.0	451.5	0.5
HE	127,729	1,947	51,500	5.6	451.0	451.0	451.5	0.5
HF	128,136	1,963	50,615	5.7	451.1	451.1	451.6	0.5
HG	128,531	1,932	49,233	5.8	451.1	451.1	451.7	0.5
HH	128,912	1,543	44,136	6.5	451.2	451.2	451.6	0.4
HI	129,336	1,511	42,590	6.7	451.2	451.2	451.7	0.4
HJ	129,713	1,500	41,244	6.9	451.3	451.3	451.7	0.5
HK	130,337	1,595	41,824	6.8	451.5	451.5	451.9	0.5
HL	130,930	1,652	44,457	6.4	451.6	451.6	452.1	0.5
HM	131,315	1,590	44,267	6.5	451.7	451.7	452.2	0.5
HN	131,733	1,603	44,606	6.4	451.7	451.7	452.3	0.6
HO	132,127	1,623	45,138	6.3	451.8	451.8	452.4	0.6
HP	132,531	1,666	45,159	6.3	451.9	451.9	452.5	0.6
HQ	132,940	1,712	48,052	6.0	451.9	451.9	452.6	0.7
HR	133,328	1,765	49,538	5.8	452.0	452.0	452.7	0.7
HS	133,720	1,841	50,236	5.7	452.1	452.1	452.8	0.8
HT	134,156	2,073	52,073	5.5	452.2	452.2	452.9	0.8
HU	134,552	1,981	52,603	5.4	452.2	452.2	453.0	0.8
HV	134,891	1,832	50,459	5.7	452.3	452.3	453.0	0.7
HW	135,313	1,728	47,722	6.0	452.3	452.3	453.0	0.7
HX	135,725	1,797	48,128	6.0	452.4	452.4	453.1	0.7
HY	136,366	1,885	52,531	5.5	452.5	452.5	453.3	0.9
HZ	136,944	1,993	57,024	5.0	452.6	452.6	453.5	0.8

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
IA	137,431	2,083	55,261	5.2	452.7	452.7	453.5	0.8
IB	137,790	2,090	53,171	5.4	452.7	452.7	453.6	0.8
IC	138,153	2,018	54,152	5.3	452.8	452.8	453.6	0.9
ID	138,524	2,001	53,489	5.4	452.8	452.8	453.7	0.9
IE	138,921	1,988	54,685	5.2	452.9	452.9	453.7	0.9
IF	139,352	1,926	55,169	5.2	453.0	453.0	453.8	0.9
IG	139,729	1,827	52,590	5.4	453.0	453.0	453.8	0.8
IH	140,143	1,753	48,180	5.9	453.0	453.0	453.8	0.8
II	140,544	1,689	47,142	6.1	453.0	453.0	453.9	0.8
IJ	140,923	1,689	47,609	6.0	453.1	453.1	454.0	0.8
IK	141,331	1,675	47,348	6.0	453.2	453.2	454.0	0.8
IL	141,742	1,621	44,796	6.4	453.2	453.2	454.1	0.8
IM	142,133	1,569	43,171	6.6	453.3	453.3	454.1	0.8
IN	142,545	1,472	41,269	6.9	453.3	453.3	454.1	0.8
IO	142,917	1,443	38,987	7.3	453.3	453.3	454.2	0.8
IP	143,281	1,453	40,198	7.1	453.5	453.5	454.3	0.8
IQ	143,733	1,466	40,666	7.0	453.6	453.6	454.5	0.8
IR	144,147	1,482	42,112	6.8	453.8	453.8	454.6	0.8
IS	144,523	1,502	43,596	6.6	453.9	453.9	454.7	0.8
IT	144,931	1,497	43,083	6.6	454.0	454.0	454.8	0.8
IU	145,302	1,528	40,987	7.0	454.0	454.0	454.8	0.8
IV	145,716	1,577	42,290	6.8	454.2	454.2	455.0	0.8
IW	146,121	1,613	45,806	6.2	454.4	454.4	455.2	0.8
IX	146,543	1,615	45,572	6.3	454.4	454.4	455.3	0.8
IY	146,887	1,627	45,812	6.2	454.5	454.5	455.3	0.8
IZ	147,329	1,668	44,689	6.4	454.6	454.6	455.4	0.8

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
JA	147,770	1,656	43,430	6.6	454.7	454.7	455.5	0.8
JB	148,143	1,730	45,020	6.4	454.8	454.8	455.6	0.8
JC	148,560	1,780	45,067	6.4	454.9	454.9	455.7	0.8
JD	148,905	1,881	46,767	6.1	455.0	455.0	455.8	0.8
JE	149,349	1,858	48,337	5.9	455.1	455.1	455.9	0.8
JF	149,721	1,868	45,389	6.3	455.2	455.2	456.0	0.8
JG	150,108	1,932	46,724	6.1	455.3	455.3	456.1	0.8
JH	150,526	1,929	45,506	6.3	455.4	455.4	456.1	0.8
JI	150,962	2,041	46,384	6.2	455.5	455.5	456.3	0.8
JJ	151,342	1,846	42,903	6.7	455.5	455.5	456.3	0.8
JK	151,720	1,848	43,737	6.5	455.7	455.7	456.4	0.8
JL	152,114	1,873	43,186	6.6	455.8	455.8	456.5	0.8
JM	152,566	1,753	44,419	6.4	455.9	455.9	456.7	0.8
JN	152,930	1,549	42,224	6.8	456.0	456.0	456.7	0.7
JO	153,321	1,332	37,073	7.7	456.0	456.0	456.6	0.7
JP	153,914	1,223	33,752	8.5	456.0	456.0	456.7	0.7
JQ	154,396	1,181	32,230	8.9	456.1	456.1	456.8	0.8
JR	154,786	1,222	31,756	9.0	456.2	456.2	456.9	0.7
JS	155,228	1,210	32,221	8.9	456.5	456.5	457.2	0.7
JT	155,537	1,169	30,574	9.4	456.5	456.5	457.2	0.7
JU	155,865	1,117	29,971	9.5	456.7	456.7	457.3	0.7
JV	156,269	1,134	30,707	9.3	456.9	456.9	457.6	0.7
JW	156,740	1,172	33,039	8.7	457.2	457.2	458.0	0.7
JX	157,294	1,213	34,857	8.2	457.5	457.5	458.3	0.8
JY	157,713	1,156	34,920	8.2	457.6	457.6	458.4	0.8
JZ	158,096	1,166	35,684	8.0	457.8	457.8	458.6	0.7

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
KA	158,516	1,184	37,048	7.7	458.0	458.0	458.7	0.7
KB	158,905	1,174	37,232	7.7	458.1	458.1	458.8	0.7
KC	159,326	1,198	38,201	7.5	458.3	458.3	459.0	0.7
KD	159,735	1,247	39,152	7.3	458.3	458.3	459.1	0.8
KE	160,126	1,256	39,769	7.2	458.5	458.5	459.2	0.8
KF	160,525	1,283	37,105	7.7	458.5	458.5	459.3	0.8
KG	160,909	1,286	37,254	7.7	458.6	458.6	459.4	0.8
KH	161,315	1,303	36,898	7.8	458.7	458.7	459.5	0.8
KI	161,720	1,359	37,828	7.6	458.9	458.9	459.6	0.8
KJ	162,334	1,247	36,676	7.8	459.0	459.0	459.8	0.7
KK	162,903	1,283	39,309	7.3	459.3	459.3	460.0	0.7
KL	163,584	1,393	39,371	7.3	459.5	459.5	460.2	0.7
KM	164,157	1,542	42,181	6.9	459.7	459.7	460.4	0.7
KN	164,735	1,480	42,068	7.4	459.8	459.8	460.5	0.7
KO	165,357	1,300	36,811	7.8	460.0	460.0	460.6	0.7
KP	165,979	1,120	32,115	8.9	460.1	460.1	460.6	0.5
KQ	166,537	1,352	38,257	7.5	460.4	460.4	461.2	0.8
KR	166,955	1,190	34,602	8.2	460.4	460.4	461.2	0.8
KS	167,341	1,313	37,736	7.6	460.7	460.7	461.5	0.8
KT	167,741	1,321	38,508	7.4	460.9	460.9	461.6	0.8
KU	168,179	1,317	38,498	7.4	461.0	461.0	461.7	0.7
KV	168,660	1,383	39,560	7.2	461.2	461.2	461.9	0.7
KW	169,147	1,388	39,539	7.2	461.3	461.3	462.0	0.7
KX	169,532	1,369	39,342	7.3	461.4	461.4	462.1	0.7
KY	170,376	1,358	40,934	7.0	461.8	461.8	462.5	0.7
KZ	170,548	1,349	39,223	7.3	461.8	461.8	462.5	0.7

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
LA	170,863	1,407	40,613	7.0	461.9	461.9	462.6	0.7
LB	171,367	1,393	38,093	7.5	462.0	462.0	462.7	0.7
LC	171,848	1,456	40,145	7.1	462.2	462.2	462.9	0.7
LD	172,529	1,375	37,638	7.6	462.3	462.3	463.0	0.7
LE	172,966	1,280	34,840	8.2	462.3	462.3	463.0	0.7
LF	173,332	1,314	35,481	8.0	462.5	462.5	463.2	0.6
LG	173,653	1,375	38,040	7.5	462.8	462.8	463.4	0.6
LH	174,135	1,442	39,267	7.3	463.0	463.0	463.6	0.6
LI	174,542	1,385	36,946	7.7	463.0	463.0	463.6	0.6
LJ	174,931	1,322	36,067	7.9	463.1	463.1	463.7	0.6
LK	175,313	1,281	34,998	8.1	463.2	463.2	463.8	0.6
LL	175,739	1,301	34,744	8.2	463.3	463.3	463.9	0.6
LM	176,155	1,347	37,219	7.7	463.7	463.7	464.2	0.5
LN	176,558	1,391	38,497	7.4	463.9	463.9	464.4	0.5
LO	176,976	1,439	39,078	7.3	464.1	464.1	464.5	0.5
LP	177,290	1,481	40,473	7.0	464.2	464.2	464.7	0.5
LQ	177,622	1,512	41,722	6.8	464.3	464.3	464.8	0.5
LR	177,959	1,554	42,947	6.6	464.4	464.4	464.9	0.5
LS	178,303	1,543	41,647	6.8	464.5	464.5	464.9	0.5
LT	178,611	1,516	41,896	6.8	464.6	464.6	465.0	0.5
LU	178,927	1,467	39,995	7.1	464.6	464.6	465.0	0.5
LV	179,323	1,426	38,466	7.4	464.6	464.6	465.1	0.5
LW	179,770	1,338	35,379	8.1	464.7	464.7	465.1	0.5
LX	180,190	1,340	35,134	8.1	464.8	464.8	465.3	0.5
LY	180,598	1,414	39,130	7.3	465.2	465.2	465.6	0.5
LZ	180,863	1,434	39,433	7.2	465.2	465.2	465.7	0.5

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Susquehanna River (continued)								
MA	181,126	1,424	40,094	7.1	465.3	465.3	465.8	0.5
MB	181,408	1,394	39,444	7.2	465.3	465.3	465.8	0.5
MC	181,718	1,406	38,731	7.4	465.4	465.4	465.9	0.5
MD	182,131	1,459	37,922	7.5	465.4	465.4	466.0	0.6
ME	182,566	1,517	41,021	6.9	465.7	465.7	466.2	0.5
MF	182,917	1,627	43,476	6.6	465.9	465.9	466.4	0.5
MG	183,383	1,676	44,198	6.4	466.0	466.0	466.5	0.5
MH	183,749	1,706	46,007	6.2	466.1	466.1	466.7	0.5
MI	184,092	1,784	48,866	5.8	466.3	466.3	466.8	0.5
MJ	184,546	1,841	46,456	6.1	466.3	466.3	466.8	0.5
MK	184,967	1,833	46,991	6.1	466.4	466.4	466.9	0.5
ML	185,479	1,886	46,067	6.2	466.5	466.5	467.0	0.5
MM	185,988	1,949	45,846	6.2	466.6	466.6	467.1	0.5
MN	186,380	1,966	45,908	6.2	466.7	466.7	467.2	0.5
MO	186,852	1,745	48,338	5.9	466.9	466.9	467.4	0.5
MP	187,332	1,678	51,362	5.6	467.1	467.1	467.5	0.4
MQ	187,708	1,566	46,244	6.2	467.1	467.1	467.5	0.4
MR	188,116	1,442	41,342	6.9	467.1	467.1	467.5	0.4
MS	188,539	1,435	40,412	7.1	467.1	467.1	467.5	0.4
MT	188,931	1,366	37,395	7.6	467.2	467.2	467.6	0.4
MU	189,334	1,293	37,126	7.7	467.3	467.3	467.7	0.4
MV	189,730	1,212	34,600	8.2	467.3	467.3	467.7	0.4
MW	190,103	1,088	32,389	8.8	467.4	467.4	467.7	0.3
MX	190,521	1,110	32,978	8.6	467.5	467.5	467.9	0.4

[1] Distance in feet above Snyder County boundary

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Tributary No.1 Limestone Run								
A	940	25	112	6.0	475.7	474.9 [2]	475.9	1.0
B	1,295	29	124	5.4	478.2	478.2	478.9	0.7
C	1,580	36	171	3.9	479.2	479.2	480.0	0.8
D	1,820	30	147	4.6	479.7	479.7	480.6	0.9
E	1,995	26	144	4.7	482.9	482.9	483.1	0.2
F	2,280	31	167	4.0	484.7	484.7	485.0	0.3
G	2,460	44	346	1.9	487.2	487.2	487.9	0.7
H	2,700	45	363	1.8	487.3	487.3	487.9	0.6
I	3,070	39	210	3.2	487.3	487.3	488.1	0.8
J	3,380	37	229	2.9	490.3	490.3	491.1	0.8
K	3,705	40	175	3.8	490.6	490.6	491.5	0.9
L	3,955	35	123	5.4	491.7	491.7	492.5	0.8
M	4,220	29	140	4.8	493.4	493.4	494.4	1.0
N	4,545	39	190	3.5	498.5	498.5	499.4	0.9
O	4,730	43	197	3.4	498.8	498.8	499.8	1.0

(1) Feet above confluence with Limestone Run
(2) Elevation computed without consideration of backwater effects of Limestone Run

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY NO. 1 TO LIMESTONE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY [2]	WITH FLOODWAY	INCREASE
Warrior Run								
A	150	73	793	9.3	475.2	450.7	450.8	0.1
B	280	48	1,221	6.1	475.2	464.1	464.1	0.0
C	880	282	6,122	1.2	475.2	470.7	470.9	0.2
D	1,315	320	7,004	1.1	475.2	470.7	470.9	0.2
E	1,595	235	5,344	1.4	475.2	470.7	470.9	0.2
F	2,025	390	8,285	0.9	475.2	470.7	470.9	0.2
G	2,175	305	6,399	1.2	475.2	470.9	471.0	0.1
H	2,685	216	3,678	2.0	475.2	470.9	471.1	0.2
I	2,995	255	4,443	1.7	475.2	470.9	471.1	0.2
J	3,295	259	4,243	1.7	475.2	470.9	471.2	0.3
K	3,585	248	3,983	1.9	475.2	470.9	471.2	0.3
L	3,910	225	3,637	2.0	475.2	470.9	471.3	0.4
M	4,230	206	3,350	2.2	475.2	471.0	471.4	0.4
N	4,625	300	4,661	1.6	475.2	471.0	471.5	0.5
O	4,920	312	4,510	1.6	475.2	471.0	471.5	0.5
P	5,230	218	3,115	2.4	475.2	471.0	471.5	0.5
Q	5,595	257	3,452	2.1	475.2	471.1	471.7	0.6
R	5,865	288	3,699	2.0	475.2	471.1	471.8	0.7
S	6,230	285	3,285	2.3	475.2	471.2	471.9	0.7
T	6,500	268	3,176	2.3	475.2	471.2	472.0	0.8
U	6,820	222	2,600	2.8	475.2	471.3	472.1	0.8
V	7,210	422	3,553	2.1	475.2	471.6	472.5	0.9
W	7,560	390	2,875	2.6	475.2	471.8	472.7	0.9
X	7,840	341	2,482	3.0	475.2	472.0	473.0	1.0
Y	8,210	266	1,741	4.3	475.2	472.4	473.3	0.9
Z	8,415	202	1,413	5.2	475.2	473.0	473.8	0.8

[1] Feet above confluence with West Branch Susquehanna River

[2] Elevation computed without consideration of backwater effects of West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

WARRIOR RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Warrior Run (continued)								
AA	8,635	150	1,067	6.9	475.2	473.4 [2]	474.2	0.8
AB	9,350	153	1,284	5.8	479.4	479.4	479.4	0.0
AC	9,830	179	1,730	4.3	479.4	479.4	480.2	0.8
AD	10,180	454	3,782	2.0	479.8	479.8	480.8	1.0
AE	10,435	337	2,968	2.5	479.9	479.9	480.9	1.0
AF	10,785	407	3,478	2.1	480.2	480.2	481.2	1.0
AG	11,305	533	4,046	1.8	480.4	480.4	481.4	1.0
AH	11,655	445	3,360	2.2	480.5	480.5	481.5	1.0
AI	12,155	413	2,685	2.8	480.9	480.9	481.8	0.9
AJ	12,535	479	2,512	2.6	481.3	481.3	482.2	0.9
AK	12,805	313	1,917	3.4	481.5	481.5	482.4	0.9
AL	13,165	315	2,120	3.1	482.3	482.3	483.1	0.8
AM	13,480	344	2,041	3.2	482.9	482.9	483.6	0.7
AN	13,805	328	2,178	3.0	483.5	483.5	484.2	0.7
AO	14,125	362	1,772	3.7	484.0	484.0	484.6	0.6
AP	14,425	385	2,457	2.7	484.7	484.7	485.4	0.7
AQ	14,725	342	2,180	3.0	485.1	485.1	485.8	0.7
AR	15,025	355	2,382	2.8	485.4	485.4	486.2	0.8
AS	15,445	335	1,883	3.5	485.6	485.6	486.4	0.8
AT	15,785	363	1,944	3.4	486.1	486.1	486.9	0.8
AU	16,365	416	2,559	2.6	486.8	486.8	487.5	0.7
AV	16,580	405	2,262	2.9	487.0	487.0	487.6	0.6
AW	16,740	386	2,168	3.0	487.1	487.1	487.8	0.7
AX	16,880	356	1,860	3.5	487.3	487.3	488.0	0.7
AY	16,980	362	1,861	3.5	488.4	488.4	488.5	0.1
AZ	17,170	341	1,814	3.6	488.7	488.7	488.9	0.2

[1] Feet above confluence with West Branch Susquehanna River

[2] Elevation computed without consideration of backwater effects of West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

WARRIOR RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Warrior Run (continued)								
BA	17,380	329	1,678	3.9	489.0	489.0	489.4	0.4
BB	17,595	394	2,195	3.0	489.4	489.4	490.0	0.6
BC	17,995	390	2,450	2.7	489.9	489.9	490.5	0.6
BD	18,195	380	2,605	2.5	490.1	490.1	490.8	0.7
BE	18,400	375	2,553	2.6	490.2	490.2	491.0	0.8
BF	18,590	480	3,021	2.2	490.4	490.4	491.2	0.8
BG	18,830	430	2,429	2.5	490.5	490.5	491.4	0.9
BH	19,000	412	2,490	2.4	490.7	490.7	491.6	0.9
BI	19,280	312	1,498	3.8	491.0	491.0	492.0	1.0

[1] Feet above confluence with West Branch Susquehanna River

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

WARRIOR RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH [2] (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
West Branch Susquehanna River								
A	5,840	1,413	38,388	8.3	451.5	451.5	452.2	0.7
B	8,080	1,706	50,648	6.3	452.5	452.5	453.3	0.8
C	10,590	1,728	46,341	6.9	452.9	452.9	453.9	1.0
D	13,730	2,113	53,578	6.0	453.9	453.9	454.9	1.0
E	17,160	1,953	52,064	6.1	454.7	454.7	455.7	1.0
F	20,110	2,093	59,626	5.4	455.4	455.4	456.4	1.0
G	23,310	2,254	59,407	5.4	456.0	456.0	457.0	1.0
H	26,910	2,428	59,605	5.4	456.7	456.7	457.7	1.0
I	29,870	2,627	57,135	5.6	456.5	456.5	457.5	1.0
J	32,820	3,871	66,994	4.8	457.3	457.3	458.3	1.0
K	35,745	4,197	60,553	5.3	457.9	457.9	458.9	1.0
L	38,645	3,877	59,509	5.4	458.5	458.5	459.5	1.0
M	40,585	3,461	61,623	5.2	459.1	459.1	460.1	1.0
N	41,110	3,994	65,256	4.9	459.6	459.6	460.6	1.0
O	42,210	6,447	118,129	2.7	460.2	460.2	461.2	1.0
P	43,785	4,772	67,492	4.7	460.2	460.2	461.2	1.0
Q	47,010	3,645	57,357	5.5	460.9	460.9	461.9	1.0
R	49,935	3,125	46,929	6.7	461.5	461.5	462.5	1.0
S	52,710	2,167	47,859	6.6	462.8	462.8	463.8	1.0
T	54,135	2,009	39,949	7.9	463.0	463.0	463.9	0.9
U	55,705	1,567	35,711	8.9	463.3	463.3	464.3	1.0
V	59,020	1,833	45,897	6.9	465.8	465.8	466.8	1.0
W	62,170	2,236	62,143	5.1	468.1	468.1	467.1	1.0
X	63,240	2,499	67,128	4.7	468.4	468.4	467.4	1.0
Y	64,460	2,361	56,104	5.6	468.7	468.7	467.7	1.0
Z	66,695	2,331	61,972	5.1	468.7	468.7	469.7	1.0

[1] Feet from Corporate Limits (Township of Point and Township of Upper Augusta)

[2] Portion of floodway located outside Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

WEST BRANCH SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH [2] (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
West Branch Susquehanna River (continued)								
AA	69,280	2,203	55,698	5.7	470.2	470.2	471.2	1.0
AB	71,800	2,017	51,824	6.1	471.3	471.3	472.2	0.9
AC	72,980	1,489	45,025	7.0	471.8	471.8	472.7	0.9
AD	75,350	2,004	53,542	5.9	473.2	473.2	474.2	1.0
AE	77,765	2,393	62,929	5.0	474.3	474.3	475.2	0.9
AF	79,495	2,759	69,013	4.6	474.9	474.9	475.9	1.0
AG	81,815	2,336	58,399	5.3	475.5	475.5	476.4	0.9
AH	83,830	2,063	56,375	5.5	476.1	476.1	477.1	1.0
AI	84,430	2,478	61,405	5.0	476.6	476.6	477.6	1.0
AJ	86,960	1,929	53,023	5.8	477.6	477.6	478.6	1.0
AK	89,210	1,659	50,994	6.1	478.4	478.4	479.4	1.0
AL	91,750	1,977	62,490	5.0	479.6	479.6	480.6	1.0
AM	93,750	2,138	63,319	4.9	480.2	480.2	481.2	1.0
AN	94,755	2,480	67,887	4.6	480.6	480.6	481.6	1.0
AO	96,924	2,100	59,273	5.2	481.8	481.8	482.6	0.8
AP	98,274	1,793	54,093	5.7	482.2	482.2	483.1	0.9
AQ	100,164	1,800	50,864	6.1	482.9	482.9	483.9	1.0
AR	101,664	1,677	51,051	6.1	483.7	483.7	484.6	0.9
AS	103,144	1,790	49,520	6.3	484.3	484.3	485.3	1.0
AT	105,174	2,310	57,103	5.4	485.3	485.3	486.3	1.0
AU	106,454	2,700	62,864	4.9	486.0	486.0	487.0	1.0
AV	107,454	2,588	66,025	4.7	486.6	486.6	487.5	0.9
AW	108,239	2,356	72,388	4.3	486.9	486.9	487.8	0.9
AX	108,794	2,671	76,416	4.1	487.1	487.1	488.0	0.9
AY	109,629	2,715	68,535	4.5	487.2	487.2	488.1	0.9
AZ	110,709	2,465	62,333	5.0	487.5	487.5	488.5	1.0

[1] Feet from Corporate Limits (Township of Point and Township of Upper Augusta)

[2] Portion of floodway located outside Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

WEST BRANCH SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH [2] (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
West Branch Susquehanna River (continued)								
BA	111,949	1,573	43,620	7.1	487.8	487.8	488.8	1.0
BB	113,489	1,272	45,628	6.8	488.8	488.8	489.8	1.0
BC	114,119	1,250	46,222	6.7	489.1	489.1	490.0	0.9
BD	114,939	1,250	45,713	6.8	489.3	489.3	490.2	0.9
BE	115,954	1,470	51,903	6.0	490.4	490.4	491.2	0.8
BF	117,104	1,799	55,376	5.6	490.8	490.8	491.6	0.8

[1] Feet from Corporate Limits (Township of Point and Township of Upper Augusta)

[2] Portion of floodway located outside Corporate Limits

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

WEST BRANCH SUSQUEHANNA RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE [1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Zerbe Run								
A								
B			WITHIN MAHANOY CREEK FLOODWAY [3]					
C								
D	1,155	200	930	7.4	517.0	515.0 [2]	515.5	0.5
E	1,285	280	1,864	3.4	517.0	515.8 [2]	516.5	0.7
F	1,455	250	1,320	5.0	517.0	515.9 [2]	516.5	0.6
G	1,740	270	1,278	5.5	517.0	516.3 [2]	517.0	0.7
H	2,310	270	1,651	3.7	517.6	517.6	518.4	0.8
I	2,460	270	1,578	3.8	517.7	517.7	518.6	0.9
J	3,035	307	1,269	6.2	518.7	518.7	519.6	0.9
K	3,440	245	857	9.1	520.7	520.7	521.1	0.4
L	4,060	200	948	9.5	526.6	526.6	526.6	0.0
M	4,105	184	1,144	7.3	527.5	527.5	527.8	0.3
N	4,325	133	1,107	4.8	528.4	528.4	529.2	0.8
O	4,625	250	829	9.7	530.2	530.2	530.2	0.0
P	4,665	270	1,181	6.8	531.2	531.2	531.7	0.5
Q	4,945	261	1,207	4.8	532.7	532.7	533.3	0.6
R	5,330	193	807	7.5	533.7	533.7	534.7	1.0
S	5,805	100	552	0.6	536.7	536.7	537.5	0.8
T	6,250	70	506	10.0	539.6	539.6	540.4	0.8
U	6,520	90	474	13.4	542.3	542.3	542.6	0.3
V	6,960	107	748	9.4	547.2	547.2	547.9	0.7
W	7,025	125	946	7.4	548.1	548.1	548.8	0.7
X	7,565	85	565	9.4	550.9	550.9	551.7	0.8
Y	8,190	55	512	10.7	554.5	554.5	555.5	1.0
Z	8,655	156	1,000	6.1	558.4	558.4	558.7	0.3

[1] Feet above confluence with Mahanoy Creek

[2] Elevation computed without consideration of backwater effectes from Mahanoy Creek

[3] 100-year flood elevation on profile is due to Mahanoy Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA

(ALL JURISDICTIONS)

FLOODWAY DATA

ZERBE RUN

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	**DISTANCE [1]**	**WIDTH (FT.)**	**SECTION AREA (SQ. FT.)**	**MEAN VELOCITY (F.P.S)**	**REGULATORY**	**WITHOUT FLOODWAY**	**WITH FLOODWAY**	**INCREASE**
Zerbe Run (continued)								
AA	8,935	160	939	6.3	559.1	559.1	559.7	0.6
AB	9,200	223	1,013	5.5	560.1	560.1	560.8	0.7
AC	9,395	200	815	7.0	560.9	560.9	561.7	0.8
AD	9,925	230	1,029	6.5	564.2	564.2	565.1	0.9
AE	10,150	232	1,235	5.1	565.4	565.4	566.4	1.0
AF	10,670	160	585	10.3	568.4	568.4	568.7	0.3
AG	10,985	150	802	7.4	571.8	571.8	572.1	0.3
AH	11,725	144	764	7.6	576.4	576.4	577.3	0.9
AI	12,130	170	829	7.7	579.6	579.6	580.6	1.0
AJ	12,605	160	826	7.6	583.3	583.3	584.3	1.0
AK	13,075	133	514	11.6	589.7	589.7	590.2	0.5
AL	13,735	100	587	9.8	598.1	598.1	598.9	0.8
AM	14,135	81	552	8.6	602.1	602.1	602.5	0.4
AN	14,455	116	569	10.2	604.2	604.2	604.9	0.7
AO	14,850	203	1,087	5.9	607.8	607.8	608.7	0.9
AP - AZ	No Floodway Data Computed							

[1] Feet above confluence with Mahanoy Creek

TABLE 7

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

FLOODWAY DATA

ZERBE RUN

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 BFEs or average depths. Insurance agents use zones and BFEs 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.

The countywide FIRM presents flooding information for the entire geographic area of Northumberland County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. 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 are presented in Table 8, "Community Map History".

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Northumberland County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FIS reports, FIRMs, and/or FBFMs for all jurisdictions within Northumberland County.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Division, Sixth Floor, 615 Chestnut Street, Philadelphia, Pennsylvania 19106-4404.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATES	FIRM EFFECTIVE DATES	FIRM REVISIONS DATES
Coal, Township of	September 20, 1974	October 15, 1976	July 3, 1990	None
Delaware, Township of	August 5, 1977	None	November 19, 1980	None
East Cameron, Township of	September 6, 1974	July 16, 1976	September 1, 1986	None
East Chillisquaque, Township of	February 7, 1975	None	May 4, 1987	None
Herndon, Borough of	January 23, 1974	May 21, 1976	August 1, 1979	None
Jackson, Township of	September 20,1974	May 21, 1976	August 15, 1979	None
Jordan, Township of	October 29, 1976	None	April 1, 1986	None
Kulpmont, Borough of	May 31, 1974	None	May 1,1978	None
Lewis, Township of	January 31, 1975	None	April 1, 1986	None
Little Mahanoy, Township of	September 13, 1974	September 24, 1976	September 5, 1979	None
Lower Augusta, Township of	May 17, 1974	January 9, 1976	August 1, 1979	None
Lower Mahanoy, Township of	September 20, 1974	July 16, 1976	August 2, 1982	None
Marion Heights, Borough of	N/A	N/A	N/A	N/A
McEwensville, Borough of	December 27, 1974	None	September 1, 1986	None
Milton, Borough of	March 10, 1972	None	March 10, 1972	December 31, 1974 October 10, 1975 November 28, 1975 February 2, 1980
Mount Carmel, Borough of	January 14, 1977	None	July 17, 1978	June 19, 1985
Mount Carmel, Township of	September 6, 1974	July 2, 1976	May 3, 1990	None
Northumberland, Borough of	June 28, 1974	None	February 2, 1977	None

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATES	FIRM EFFECTIVE DATES	FIRM REVISIONS DATES
Point, Township of	March 15, 1974 June 18, 1976	None	May 2, 1977	None
Ralpho, Township of	June 28, 1974	None	February 15, 1979	None
Riverside, Borough of	March 29, 1974 June 11, 1974	None	April 15, 1977	None
Rockefeller, Township of	August 9, 1974	August 20, 1976	April 1, 1986	None
Rush, Township of	September 6, 1974	June 18, 1976	January 28, 1977	None
Shamokin, City of	May 10, 1974	May 28, 1976	December 16, 1980	None
Shamokin, Township of	September 20, 1974	May 2[illegible]976	March 5, 1990	None
Snydertown, Borough of	October 21, 1977	None	September 1, 1986	None
Sunbury, City of	July 27, 1973	None	July 18, 1977	None
Turbot, Township of	June 15, 1973	June 4, 1976	August 15, 1979	None
Turbotville, Borough of	N/A	N/A	N/A	N/A
Upper Augusta, Township of	January 16, 1974 June 11, 1976	None	May 2, 1977	None
Upper Mahanoy, Township of	September 20, 1974	June 18, 1976	September 1, 1986	None
Washington, Township of	November 1, 1974	None	December 15, 1978	None
Watsontown, Borough of	March 8, 1974	November 26, 1976	January 2, 1980	None
West Cameron, Township of	September 20, 1974	May 21, 1976	January 17,1990	None
West Chillisquaque, Township of	May 10, 1974 June 4, 1976	None	April 15, 1977	None
Zerbe, Township of	September 20, 1974	May 14, 1976	January 17, 1990	None

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

NORTHUMBERLAND COUNTY, PA
(ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

9.0 BIBLIOGRAPHY AND REFERENCES

1. Federal Emergency Management Agency, Flood Insurance Study, Township of Coal, Northumberland County, Pennsylvania, July 3, 1990.

2. Federal Emergency Management Agency, Flood Insurance Study, Township of Deleware, Northumberland County, Pennsylvania, May 1980.

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