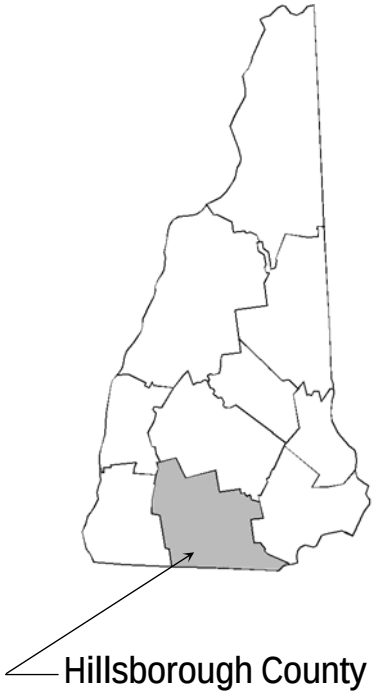
FLOOD INSURANCE STUDY

VOLUME 1 OF 5

HILLSBOROUGH COUNTY, NEW HAMPSHIRE
(ALL JURISDICTIONS)

COMMUNITY NAME	COMMUNITY NUMBER
AMHERST, TOWN OF	330081
ANTRIM, TOWN OF	330082
BEDFORD, TOWN OF	330083
BENNINGTON, TOWN OF	330084
BROOKLINE, TOWN OF	330180
DEERING, TOWN OF	330085
FRANCESTOWN, TOWN OF	330086
GOFFSTOWN, TOWN OF	330087
GREENFIELD, TOWN OF	330209
GREENVILLE, TOWN OF	330088
HANCOCK, TOWN OF	330089
HILLSBOROUGH, TOWN OF	330090
HOLLIS, TOWN OF	330091
HUDSON, TOWN OF	330092
LITCHFIELD, TOWN OF	330093
LYNDEBOROUGH, TOWN OF	330218
MANCHESTER, CITY OF	330169
MASON, TOWN OF	330221
MERRIMACK, TOWN OF	330095
MILFORD, TOWN OF	330096
MONT VERNON, TOWN OF	330224
NASHUA, CITY OF	330097
NEW BOSTON, TOWN OF	330098
NEW IPSWICH, TOWN OF	330099
PELHAM, TOWN OF	330100
PETERBOROUGH, TOWN OF	330101
SHARON, TOWN OF	330192
TEMPLE, TOWN OF	335781
WEARE, TOWN OF	330235
WILTON, TOWN OF	330102
WINDSOR, TOWN OF	335780



Initial Countywide FIS Effective Date: September 25, 2009

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
33011CV001A

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

Initial Countywide FIS Effective Date: September 25, 2009

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FLOOD INSURANCE STUDY
HILLSBOROUGH COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS)

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) investigates the existence and severity of flood hazards in or, revises and updates a previous FIS/Flood Insurance Rate Map (FIRM) for the geographic area of Hillsborough County, including the Towns of Amherst, Antrim, Bedford, Bennington, Brookline, Deering, Francestown, Goffstown, Greenfield, Greenville, Hancock, Hillsborough, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, New Boston, New Ipswich, Pelham, Peterborough, Sharon, Temple, Weare, Wilton, and Windsor, and the Cities of Manchester and Nashua. This information will be used by Hillsborough County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP). The information will also be used by local and regional planners to further promote sound land use and floodplain development. This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This FIS has developed flood risk data for various areas of the county that will be used to establish actuarial flood insurance rates. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Regulations at 44 CFR, 60.3.

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

1.2 Authority and Acknowledgments

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

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

Amherst, Town of:	for the January, 1979, FIS report, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols and Company, Inc., for the Federal Emergency Management Agency (FEMA), under Contract No. H-3989. This work was completed in September 1977.

Antrim, Town of:	for the October 1, 1980, FIS, the hydrologic and hydraulic analyses were prepared by U.S. Army Corps of Engineers (USACE) for FEMA, under Inter-Agency Agreement No. IAA-H-10-77. This work was completed in June 1979.
Bedford, Town of:	for the original October 1978 FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols and Company, Inc., for FEMA, under Contract No. H-3862. This work was completed in July 1977. for the May 2, 1994, revision, the hydrologic and hydraulic analyses were prepared by Roald Haestad, Inc., for FEMA, under Contract No. EMW-90-C-3126. This work was completed in May 1993.
Bennington, Town of:	for the October 18, 1982, FIS, the hydrologic and hydraulic analyses for this study were prepared by the Soil Conservation Service (SCS) for FEMA, under Inter-Agency Agreement No. IAA-H-11-79, Project Order No. 4 This work was completed in February 1981.
Deering, Town of:	for the February 1979 FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-3989. This work was completed in October 1977.
Goffstown, Town of:	for the December 1978 FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-3989. This work was completed in November 1977.
Greenfield, Town of:	for the November 1979 FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-3989. This work was completed in April 1978.

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Greenville, Town of:	for the November 19, 1980, FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-4589. This work was completed in October 1978.
Hancock, Town of:	for the October 4, 1982, FIS, the hydrologic and hydraulic analyses for this study were prepared by the SCS for FEMA, under Inter-Agency Agreement No. IAA-H-11-79, Project Order No. 4. This work was completed in April 1981.
Hillsborough, Town of:	for the December 1978 FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols & Company, Inc., for FEMA, under Contract No. H-3989. This work was completed in October 1977.
Hollis, Town of:	for the October 1978 FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols & Company, Inc., for FEMA, under Contract No. H-3862. This work was completed in July 1977.
Hudson, Town of:	for the February 1978 FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols & Company, Inc., for FEMA, under Contract No. H-3862. This work was completed in June 1977.
Litchfield, Town of:	for the January 1979 FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols & Company, Inc., for FEMA, under Contract No. H-3862. This work was completed in June 1977.
Manchester, City of:	for the August 18, 1980, FIS, the hydrologic and hydraulic analyses were prepared by the USACE, New England Division, for FEMA, under Inter-Agency Agreement No. IAA-H-7-76, Project Order No. 25. This work was completed in May 1978.
Merrimack, Town of:	for the January 1979 FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols & Company, Inc., for

	FEMA, under Contract No. H-3862. This work was completed in July 1977.
Milford, Town of:	for the November 1979 FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-3989. This work was completed in January 1978.
Nashua, City of:	for the December 1978 FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols & Company, Inc., for FEMA, under Contract No. H-3862. This work was completed in September 1977.
New Boston, Town of:	for the original November 19, 1980, FIS, the hydrologic and hydraulic analyses were prepared by Anderson-Nichols and Company, Inc., for FEMA, under Contract No. H-4589. This work was completed in October 1978.
	for the May 21, 2001, revision, the hydrologic and hydraulic analyses for the South Branch Piscataquog River were prepared by the U.S. Geological Survey (USGS), for FEMA, under Inter-Agency Agreement No. EMW-97-IA-0155. This work was completed on October 18, 1998.
New Ipswich, Town of:	for the May 15, 1991, FIS, the hydrologic and hydraulic analyses for this study were prepared by the SCS for FEMA, under Inter-Agency Agreement No. EMW-88-E-2736, Project Order No. 2. This work was completed in September 1989.
Pelham, Town of:	for the September 1979 FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-3989. This work was completed in April 1978.
Peterborough, Town of:	for the November 1979 FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-3989. This work was completed in March 1978.

Weare, Town of:	for the June 2, 1993, FIS, the hydrologic and hydraulic analyses for Daniels Lake, Everett Lake, Weare Reservoir (Lake Horace), and the Piscataquog River were prepared by the USGS, for FEMA, under Contract No. EMW-88-2738, Project Order No. 4. This work was completed in September 1991.
Wilton, Town of:	for the October 1979 FIS, the hydrologic and hydraulic analyses for this study were prepared by Anderson-Nichols & Company, Inc. for FEMA, under Contract No. H-3989. This work was completed in March 1978.

The authority and acknowledgments for the Towns of Brookline, Francestown, Lyndeborough, Mason, Mont Vernon, Sharon, Temple, and Windsor, are not available because no FIS reports were ever published for those communities.

For this countywide study, the hydrologic and hydraulic analyses for the revised portions of the Baboosic Brook, Chase Brook, Merrimack River, Naticook Brook, Nesenkeag Brook, Souhegan River, and Tributary B No. 1 were prepared by the USGS, New Hampshire/Vermont District Office, for FEMA under Inter-Agency Agreement No. EMW-2003-IA-0282. This work was completed in November 2004. The hydrologic and hydraulic analyses for the revised portions of Gumpas Road Brook, Pennichuck Brook, Salmon Brook, and Second Brook were prepared by the USGS, New Hampshire/Vermont District Office, for FEMA under Inter-Agency Agreement No. EMW-2002-IA-0115. The work for Pennichuck, Salmon, and Second Brooks was completed in December 2003. The work for Gumpas Road Brook was completed in July 2003. The revised hydraulic and hydrologic analyses for Contoocook River, Nubanusit Brook, and Otter Brook were prepared by Delta Environmental Services, Inc., and SFC Engineering Partnership. This work was completed in January 2000.

Base map information shown on this FIRM was derived from USGS Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photography dated 1998 or later. These images were recast by the New Hampshire Geographically Referenced Analysis and Information Transfer System (NH GRANIT) onto the New Hampshire State Plane coordinate system. The projection used in the preparation of this map was New Hampshire State Plane, FIPSZONE 2800. The horizontal datum was NAD 83, GRS80 spheroid.

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 jurisdictions within Hillsborough County are shown in Table 1, "Initial and Final CCO Meetings."

TABLE 1 – INITIAL AND FINAL CCO MEETINGS

Community Name	Initial CCO Date	Final CCO Date
Town of Amherst	March 1976	August 17, 1978
Town of Antrim	August 1976	March 3, 1980
Town of Bedford	June 9, 1993[1]	*
Town of Bennington	November 21, 1978	May 13, 1982
Town of Deering	March 1976	August 14, 1978
Town of Goffstown	March 1976	July 20, 1978
Town of Greenfield	March 1976	September 18, 1978
Town of Greenville	July 1977	July 10, 1979
Town of Hancock	November 21, 1978	May 10, 1982
Town of Hillsborough	March 1976	July 27, 1978
Town of Hollis	March 1976	March 23, 1978
Town of Hudson	January 1976	August 9, 1977
Town of Litchfield	March 1976	October 31, 1977
City of Manchester	December 1975	March 11, 1980
Town of Merrimack	March 1976	January 23, 1978
Town of Milford	March 1976	September 25, 1978
City of Nashua	September 16, 1998	November 9, 2000
Town of New Boston	July 15, 1997	*
Town of New Ipswich	September 1, 1987	May 29, 1990
Town of Pelham	March 1976	January 10, 1979
Town of Peterborough	March 1976	October 30, 1978
Town of Weare	September 1, 1987	June 24, 1992
Town of Wilton	March 1976	October 11, 1978

[1]Notified by letter
*Data not available

For this countywide study, initial CCO meetings were held on April 18, 2002, May 28, 2002, and July 31, 2002. The Final CCO meeting was held on June 7, 2006. The meetings were attended by representatives of the communities, USGS and FEMA.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Hillsborough County, New Hampshire.

All or portions of the flooding sources listed in Table 2, "Streams Studied by Detailed Methods," were studied by detailed methods.

TABLE 2 – STREAMS STUDIED BY DETAILED METHODS

Autumn Brook
Baboosic Brook
Bartemus Brook
Beards Brook
Beaver Brook No. 1
Beaver Brook No. 2
Bettys Brook
Black Pond Brook
Bog Brook
Bowman Brook
Caesars Brook
Chase Brook
Contoocook River
Deering Reservoir
East Branch of Baboosic Brook
Ferguson Brook
Gambol Brook
Golden Brook
Gorham Brook
Great Brook No. 1
Great Brook No. 2
Great Cohas Brook
Gumpas Pond Brook
Gumpas Road Brook
Hartshorn Brook
Hassells Brook
Holts Brook
Hosley Brook
Island Pond Brook
Joe English Brook
Limit Brook
Lyle Reed Brook
McQuade Brook
McQuade Brook Split Flow
Merrimack River
Middle Branch Piscataquog River
Mill Brook
Moose Brook
Nashua River
Naticook Brook
Nesenkeag Brook
New Meadow Brook
Nissitissit Brook
North Branch
North Branch Contoocook River
North Channel
Piscataquog River
Nubanusit Brook
Otter Brook
Otter Lake Brook
Ox Brook
Parkhurst Brook
Peacock Brook
Pennichuck Brook
Piscataquog River
Pointer Club Brook
Pulpit Brook
Purgatory Brook
Riddle Brook
Salmon Brook
Sand Brook
Second Brook
Shedd Brook
Sherburn Mill Brook
Simpson Mill Brook
Souhegan River
South Branch Piscataquog River
Spit Brook
Stony Brook
Tioga Brook
Tributary A
Tributary B No. 1
Tributary B No. 2
Tucker Brook
Witches Brook

Table 3, "Scope of Revision," presents the status of each detailed study stream and the study limits for each. For many of these streams, the study limits include backwater from the receiving stream.

TABLE 3 – SCOPE OF REVISION

Community	Flooding Source	Coverage Area
City of Nashua	Salmon and Pennichuck Brooks	From their confluence with the Merrimack River to their upstream corporate limits.
	Merrimack River	From the downstream to upstream corporate limits.
Town of Hudson	Second Brook	From the confluence with the Merrimack River to the headwaters at Wassen and Bush Hill Roads.
	Merrimack River	From the downstream to upstream corporate limits.
Town of Pelham	Gumpas Road Brook	From Debbie Drive to Marsh Road (State Route 111A) (approximately 1.3 miles).
Town of Merrimack	Baboosic Brook	From the upstream corporate limits to its mouth (approximately 12.1 miles).
	Naticook Brook	From Naticook Lake, through Green Pond, to its mouth (approximately 3.4 miles).
	Naticook Lake	Entire shoreline.
	Souhegan River	From the downstream to upstream corporate limits (approximately 7.5 miles).
	Merrimack River	From the downstream to upstream corporate limits (approximately 8.1 miles).
Town of Litchfield	Chase Brook	From Pilgrim Road to its mouth (approximately 3.4 miles).
	Tributary B No. 1	From State Route 102 to its mouth (approximately 1.4 miles).
	Nesenkeag Brook	From Pilgrim Road to its mouth (approximately 3.4 miles).
	Merrimack River	From the downstream to upstream corporate limits (approximately 8.4 miles).
Town of Peterborough	Contoocook River	From the upstream corporate limits to the downstream corporate limits.
	Nubanusit Brook	From its confluence with the Contoocook River to a breached dam just downstream of Edward McDowell Dam.
	Otter Brook	From its confluence with the Contoocook River to the upstream corporate limits.

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

TABLE 4 – LETTERS OF MAP CORRECTION

Community	Flooding Source(s)/Project Identifier	Date Issued	Type
Town of Peterborough	Contoocook River	August 4, 2005	LOMR
Town of Hollis	Nashua River	June 13, 2001	LOMR
Town of Bedford	McQuade Brook	July 15, 1999	LOMR
Town of Amherst	Souhegan River	March 13, 1997	LOMR
Town of Wilton	Souhegan River	June 1, 1988	LOMR

Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2). The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

Tributary A in the Town of Merrimack has been renamed Sherburn Mill Brook to match the stream name in the Town of Amherst. In Hillsborough County, there are two Beaver Brooks, two Great Brooks, and two Tributary B's. For clarification purposes, they have been renamed in the FIS as follows: Beaver Brook in the Towns of Hudson and Pelham is Beaver Brook No. 1; Beaver Brook in the Town of Amherst is Beaver Brook No. 2; Great Brook in the Town of Antrim is Great Brook No. 1; Great Brook in the Town of Milford is Great Brook No. 2; Tributary B in the Town of Litchfield is Tributary B No. 1; Tributary B in the Town of Greenfield is Tributary B No. 2.

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

2.2 Community Description

Hillsborough County is located in southern New Hampshire. In Hillsborough County, there are 31 communities. The Towns of Brookline, Greenville, Hollis, Hudson and Mason, the City of Nashua, and the Towns of New Ipswich and Pelham are located in the southern portion of the county. The Towns of Deering,

Goffstown and Hillsborough, the City of Manchester, and the Towns of Weare and Windsor are located in the northern portion of the county. The Towns of Amherst, Antrim, Bedford, Bennington, Francestown, Greenfield, Hancock, Hudson, Litchfield, Lyndeborough, Merrimack, Milford, Mont Vernon, New Boston, New Ipswich, Peterborough, Sharon, Temple and Wilton are located in the center of Sullivan County.

Hillsborough County is bordered to the north by Towns of Bradford, Dunbarton, Henniken, Hopkinton, and Hooksett in Merrimack County. To the west, the county is bordered by the Town of Washington in Sullivan County; and the Towns of Dublin, Harrisville, Jaffrey, Nelson, Rindge, and Stoddard in Cheshire County. It is bordered to the east by the Towns of Auburn, Londonderry, Salem, and Windham in Rockingham County. To the south, the county is bordered by the Town of Ashburnham in Worcester County, Massachusetts; the Towns of Ashby, Dracut, Dunstable, Pepperell, Townsend, and Tyngsborough in Middlesex County, Massachusetts; and the City of Methuen in Essex County, Massachusetts.

According to the 2000 U.S. Census, the land area in Hillsborough County was 876 square miles and the population of Hillsborough County was 380,841 in 2000 (U.S. Census Bureau, 2005).

The topography of Hillsborough County varies from gentle rolling hills, valley areas, to steep mountains. The climate of the county is typical of southern New Hampshire, with warm summers and cool winters. The average temperatures during the month of July range from a high of 80 degrees Fahrenheit (°F) to a low of 55°F. The average temperatures during the month of January range from a high of 30°F to a low of 10°F. The average annual precipitation is 42 inches, of which approximately 15 percent is in the form of snowfall.

2.3 Principal Flood Problems

Major floods have occurred on the Souhegan River and Contoocook River during spring, fall, and winter. The most severe floods have been caused in early spring by snowmelt and heavy rains, in conjunction with ice jams. Autumn is another critical season for flood danger because of heavy rainfall and the possibility of storms of tropical origin. However, the possibility of major flooding can occur during all seasons of the year. Serious levels of flooding on the Souhegan River have occurred in 1896, 1924, 1936, 1938, 1944, and 1955. The 1936 event is the flood of record for the Souhegan River with an estimated period of over 100 years (U.S. Department of Agriculture, Soil Conservation Service, 1976). This flood produced a stage of approximately six feet above Dam No. 4. With the addition of flood control structures, a series of storms such as that occurred in 1936 would no longer produce a stage of this magnitude. The flood of record for the Contoocook River is the 1938 event.

The greatest flood recorded on the Merrimack River was the March 1936 event. It was marked by two distinct peaks spaced six days apart, resulting from a combination of runoff from melting snow and two extraordinarily heavy rainstorms over the basin. The runoff following the first storm removed the snow

cover from the lower portion of the basin, leaving the soil in a highly saturated state conducive to a high rate of runoff. In the northern portion of the basin, the remaining snow was left in a state of high density. The second storm thus produced a much greater basin-wide flood. At the USGS stream gaging station at Goff's Falls in Manchester, the Merrimack River rose to a record peak discharge of 150,000 cubic feet per second (cfs) and an elevation of 144.5 feet. The Piscataquog River reached a peak discharge of 19,900 cfs and a stage of 16.0 feet at the USGS gage at Goffstown. Many of the bridges in Manchester at that time were obstructive to flow. Floatable materials, including two 55,000 gallon oil tanks, were lodged at one bridge, further increasing the flood stage. Velocities in the main channel were between 6 and 16 feet per second. The high water marks varied from 12 to 33 feet above the low flow profile. In many cases, overbank flow reached 10 feet and more in depth.

The flood of record for the Piscataquog River is the September 1938 event. It resulted from torrential rain accompanying a tropical hurricane, which passed over the Merrimack basin at a time when the ground was already highly saturated from an earlier storm. Only minor flooding was experienced on the tributaries in the eastern portion of the basin, while the tributaries in the western portion experienced floods approaching and, in some areas, exceeding the severity of the March 1936 flood. At the Goffs Falls gage in Manchester, the Merrimack River peaked at a discharge of 102,500 cfs, reaching an elevation of 135.1 feet. The USGS gage at Goffstown on the Piscataquog River rose to a gage height of 17.5 feet with a record peak discharge of 21,900 cfs which exceeded the discharge experienced in the March 1936 flood. During this event, the Weare Reservoir failed.

A maximum stage of 415.8 feet occurred in Everett Lake during the 1987 flood. This is the highest the lake has risen since the flood control project was placed in full operation in January 1962. The 1987 flood elevation in Everett Lake was 10.3 feet higher than the previous maximum elevation, which occurred in June 1984. In Weare Reservoir, the 1987 flood reached an elevation of 656.9 feet, or 1.5 feet over the main spillway. Since 1971, the maximum elevation in Weare Reservoir is 657.4 feet or 2.0 feet over the main spillway in May 1988.

2.4 Flood Protection Measures

There are five dams designed for flood control and low flow augmentation for the Merrimack River. They were constructed and are being operated by the USACE. These structures are the Franklin Falls Dam on the Pemigewassett River, the Edward McDowell Dam on the Nubanusit River (flood control only), the Blackwater Dam on Blackwater River (flood control only), and two dams controlling Hopkinton Lake: Everett Dam on the Piscataquog River and Hopkinton Dam on the Contoocook River. The potential for flooding along the Merrimack River has been substantially reduced since the construction of these dams.

Everett Lake, which was completed in January 1962, is a major flood control project operated by the USACE (USACE, 1977). At the emergency spillway,

crest elevations of 418 feet, approximately 91,500 acre-feet of flood control storage, is available in the lake. During extreme floods, water from the Hopkinton Lake flood control complex is diverted into Everett Lake. Hopkinton Dam is located on the Contoocook River at West Hopkinton. The USACE has flow easements up to an elevation of 420 feet for the reservoir complex.

Downstream from Everett Lake, along the Piscataquog River, the USACE has obtained flowage easements for a maximum discharge of 1,500 cubic feet per second. Discharges are kept below this limit in all but extreme floods.

Only the Hopkinton-Everett Lakes system would provide flood control on the Piscataquog River. Within the Piscataquog River watershed, this system has a storage capacity of 86,500 acre-feet.

The Public Service Company Dam at Deering Reservoir is not a flood control structure. It can provide some excess storage capacity for the Piscataquog River when the pool has been drawn down.

Pennichuck Brook contains four water supply ponds and large amounts of natural upstream storage. These storage areas serve to significantly reduce the flooding on Pennichuck Brook.

Since 1961, the Soil Conservation Service has built four flood-retarding structures on the Souhegan River and its tributaries within the Town of New Ipswich. A series of storms with conditions similar to those produced by the 1936 flood would produce much smaller flood peaks today. Smaller events are also controlled by holding back excess runoff in these structures and releasing the stored water slowly over a period of time. These dams have eliminated most of the flood problems in New Ipswich.

Baboosic Brook has significant natural storage in the vicinity of Baboosic Lake. This storage effectively reduces peak floods and attenuates flooding on Baboosic Brook.

The lower reach of Ferguson Brook, in Hancock, downstream from the vicinity of Davis Brook is controlled by a flowage easement. This easement was obtained by the USACE so that spillway flows from MacDowell Reservoir can be diverted out of their natural watershed into Ferguson Brook. Subject to these flowage easements, flows in excess of about once in 35 years to an excess of once in 200 years (3,000 cubic feet per second) will be contained within the easement (USACE, 1974).

As the Contoocook River flows through Bennington, it passes over four dams that lower the river to a total of 70 feet in 1.2 miles. The backwater from Powder Mill Dam creates Powder Mill Pond, which extends nearly 3 miles upstream, well beyond the Bennington town line and along the boundary between Hancock and Greenfield. The next two dams are power dams that are closely spaced and near the center of Bennington. Both Monadnock Dam and Pierce Dam are still operated by the Monadnock Paper Company. The last dam, called High Gate

Dam, includes a sluiceway for intake water for the Monadnock Paper Company operations, which is immediately downstream. These dams are not flood control structures.

3.0 ENGINEERING METHODS

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

3.1 Hydrologic Analyses

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

For each community within Hillsborough County that has a previously printed FIS report, the hydrologic analyses described in those reports have been compiled and are summarized below.

Precountywide Analysis

Flood discharges for Autumn Brook, Baboosic Brook, Beaver Brook No. 1, Beaver Brook No. 2, Bettys Brook, Bog Brook, Bowman Brook, Caesars Brook, Chase Brook, Gorham Brook, Joe English Brook, Limit Brook, McQuade Brook, Nesenkeag Brook, Otter Brook, Otter Lake Brook, Parkhurst Brook, Peacock Brook, Pointer Club Brook (from the confluence with the Merrimack River to Back River Road), Pulpit Brook, Riddle Brook, Second Brook, Sherburn Mill Brook, Stony Brook (in Greenfield), Tioga River, Tributary B, were computed using regional discharge-frequency equations developed by Manuel Benson (U.S. Department of the Interior, Geological Survey, 1962). The Manuel Benson regional equation parameters include drainage area, average slope, percent of storage (ponding only), and rainfall intensity within a 24-hour period. However, the effect of the natural storage on Otter Lake Brook in the vicinity of Otter Lake was accounted for by use of a numerical iteration reservoir routing analysis

(Viessman, 1972). Discharges for Second Brook were modified to include the storage effects of Second Pond also using this analysis.

Discharges for Gumpas Road Brook, New Meadow Brook, Simpson Mill Brook, were determined by averaging the results of the regional equation developed by Johnson and Tasker (U.S. Department of the Interior, Geological Survey, 1974), and an area-weighted transposition with an adjusted log-Pearson Type III frequency analysis of the gages at Hop Brook (no. 01174000), Bungay Brook (no. 01112300), and East Meadow Brook (no. 01100700) in Massachusetts (U.S. Water Resources Council, 1976). The regional equations developed by Johnson and Tasker consist of parameters which include drainage area, ground slope, and average rainfall per year. Golden Brook, Gumpas Pond Brook, and Island Pod Brook were modified to include storage effects. This modification utilizes a numerical reservoir routing technique known as the Unit Hydrograph Method, which developed an inflow hydrograph (Viessman, 1972). Downstream decreases in discharge Beaver Brook No. 2 and Golden Brook result from a decrease in channel slope and an increase in overbank storage due to a wide floodplain and several large swamps. The floodwater surfaces for Gumpas Pond were determined using the above-referenced reservoir routing technique (Viessman, 1972).

Peak discharge values for Pennichuck Brook upstream of NH Route 101-A were calculated from regional frequency-related equations (U.S. Department of the Interior, 1974). These values were then routed through one natural storage area and four reservoirs; Holt's Pond, Bowers Pond, Harris Pond, and Supply Pond, using a reservoir routing method (Viessman, 1972). Peak discharges for the lower portions of the Pennichuck Brook were developed from the routed results. The peak discharges for Pennichuck Brook were coordinated with historical data supplied by the Pennichuck Water Works for Holt's Pod Dam and published frequency-discharge data (Hamilton Engineers Association, 1975).

Peak discharges for Bartemus Brook were based on regional discharge-frequency equations in conjunction with comparisons to USGS stream gages in basins of similar characteristics. For the Nashua River in the City of Nashua, the principal sources of information were frequency-discharge values developed for the Nashua River, USGS gaging station at Pepperell, Massachusetts (gage no. 01096500) and regional discharge-frequency equations (U.S. Department of the Interior, 1974).

Discharges for the Nissitissit River were derived by combining the results of Johnson and Tasker equations (U.S. Department of the Interior, 1974) and discharge-frequency relationships transposed from stream gage records of nearby basins with similar characteristics. Discharges for Witches Brook were derived solely from the Johnson and Tasker equations.

On Naticook Brook, the discharges at the outlets to Green Pond and Naticook Lake were calculated by the SCS inflow hydrograph method in conjunction with a numerical iteration routing method (Viessman, 1972). Below the outlet of Greens Pond, the regional equations developed by Manuel Benson were used.

For the Merrimack River, the principal sources of information were the discharges from the Flood Plain Information Studies published by the USACE (USACE, 1972, 1973, 1976), the rating curves from the Master Regulation Manual for flood control reservoirs (USACE, 1953), and the Water Resources Investigation publication for the Merrimack River (USACE, 1972). The discharge values were evaluated by a comparison with those developed by a log-Pearson Type III analysis of the flow records of the USGS stream gaging station at Goffs Falls Dam. All discharge values were modified to reflect the effect of the five existing flood control structures mentioned in Section 2.4.

For the Souhegan River in the Town of Merrimack, the principal sources of information were the discharges published by the USACE and by the SCS (USACE, 1973; U.S. Department of Agriculture, 1976). For the Town of New Ipswich, discharge-frequency data was developed using a synthetic runoff procedure shown in Technical Release 20 that relies on regionalized climatological data coupled with the individual stream physical characteristics for input (U.S. Department of Agriculture, 1965).

For the Piscataquog River in the Town of New Boston, for the 1980 FIS, discharge values were obtained from values used in the Flood Plain Information Study published by the USACE (USACE, 1976). The USACE study used a log-Pearson Type III methodology to determine discharge values with information taken from gage no. 01091000, located near the mouth of South Branch Piscataquog River (U.S. Water Resources Council, 1976). In addition, for the South Branch Piscataquog River and Middle Branch Piscataquog River up to the confluence of Peacock Brook, the study contractor used the same method and transferred discharges from the gage analysis to stream stations removed from the gage by the formula:

$$Q/Q_g=(A/A_g)^{0.75}$$

where Q and Q_g are the discharges at the station and the gage respectively; and A and A_g are the drainage areas at these locations (Johnstone and Cross, 1949).

For the 2001 revision, the hydrologic analyses consisted of transferring established discharges from the 1980 FIS to upstream ungaged sites on the South Branch Piscataquog River using the same method as described above.

In the Town of Weare, the primary source of peak-flow data used to determine flood discharges on the Piscataquog River, downstream from Everett Lake, were streamflow records for the USGS gage no. 01090800, located at the base of Everett Dam. The drainage area at the gage is 63.1 square miles. Peak discharges were developed for this station using a log-Pearson Type III analysis of annual peak flow for the period 1963-1990 (U.S. Department of the Interior, 1981). The peak discharge determined for the Piscataquog River at the USGS gage was used for the entire reach from the Everett Dam downstream to the Weare corporate limits. The drainage area increases approximately 9.4 percent in the reach from Everett Dam to the Weare corporate limits. However, the timing of localized runoff from this intervening area would be significantly different than the

regulated outflow from Everett Lake. As a result, peak discharges would not increase significantly.

For the North Branch Contoocook River, a peak discharge analysis was performed using data from a USGS gaging station near Antrim. The period of record for this gage extends from 1924 to 1970, when it was discontinued. Flood discharges are modified somewhat by Highland Lake, a large lake located about 10 miles upstream of the gage. This modifying effect was reflected in the computed discharges. Somewhat higher discharges for the North Branch Contoocook River were developed for a FIS for the Town of Hillsborough (FEMA, 1980). In this study, peak inflow discharges were developed for the Jackman Reservoir, located several miles downstream of the USGS gage. The Jackman flows, when multiplied by a factor equal to the ratio of the drainage areas, were found to fall within the established confidence limits of the computed frequencies at the USGS gage and were therefore adopted for the Antrim study.

There are no discharge records for Great Brook No. 1. Peak discharges were derived by using procedures presented in the report published by the USGS (U.S. Department of the Interior, 1978). Resulting flow values were also compared with statistically analyzed gage records in the region and were found to be in general agreement.

Discharge-frequency data for Ferguson Brook, Moose Brook, and Hosley Brook were developed using synthetic rainfall-runoff procedures that rely on regionalized climatological data coupled with the physical characteristics of the individual reservoirs and streams for input (U.S Department of Agriculture, 1965; U.S. Department of the Interior, 1978).

For the Contoocook River in the Town of Greenfield, floodflow-frequency data were based on statistical analysis of discharge records at the Peterborough, New Hampshire, gaging station operated by the USGS. The analyses followed the standard log-Pearson Type III method (U.S. Water Resources Council, 1976). All discharge values were modified to reflect the effect of the existing flood control structure. Natural storage on the Contoocook River in the vicinity of Powder Mill Pond was accounted for by use of a numerical iteration reservoir routing analysis (Viessman, 1972).

For other areas, the principal sources of information concerning the discharges for Contoocook River were the two Hillsborough Flood Plain Studies (USACE, 1974) and a log-Pearson Type III analysis (U.S. Water Resources Council, 1976) weighted with historical floodflows at USGS gage no. 01082000, located on the Contoocook River in Peterborough.

Discharges for Nubanusit Brook were obtained directly from the USACE, New England Division, and reflect the maximum releases that would be expected as discharges from Edward MacDowell Dam for floods of the various recurrence intervals.

Discharges for Gambol Brook and Mill Brook were determined by averaging results from regional discharge-frequency equations (U.S. Department of the Interior, 1962), New England Hill and Lowland equations of the U.S. Bureau of Public Roads (U.S. Bureau of Public Roads, 1960), peak discharge method of the U.S. Soil Conservation Service (U.S. Department of Agriculture, 1972), and runoff from small watersheds method of the U.S. Soil Conservation Service (U.S. Department of Agriculture, 1971) and applying the release rates from the applicable flood-control reservoirs to these results.

Flood discharges for the lower reaches of Souhegan River and Stony Brook (in Wilton) were computed by the U.S. Soil Conservation Service using the convex routing method (U.S. Department of Agriculture, 1972). Discharges for the upper reaches of these streams, in Wilton, were determined from regional discharge-frequency equations (U.S. Department of the Interior, 1962).

For McQuade Brook Split Flow, a rating curve for the low ridge separating the McQuade Brook watershed from the Baboosic Brook watershed was established using the USACE HEC-2 step-backwater computer program (USACE, 1991). A 100-year flow of 165 cubic feet per second was established using this model.

Great Cohas Brook has a total drainage area of approximately 68 square miles. Of the total area, 45.5 square miles of the upper portion of the watershed drains into Massabesic Lake, a water supply reservoir with numerous short tributaries. There are no discharge records for Great Cohas Brook. A comparison was made of frequency statistics for selected gaged rivers in the Merrimack River basin that were considered applicable to Great Cohas Brook. Based on the comparison of drainage area, slope, and vegetation, a discharge frequency curve was developed for the lower portion of the watershed using a skew coefficient of 0.8, a standard deviation of 0.21, and a mean of 2.9. The outflow of Massabesic Lake concurrent with peak discharges from the lower drainage area was estimated by developing a hypothetical inflow hydrograph. This inflow hydrograph was routed through the surcharge storage assuming the lake elevation at the top of flashboards at the start of runoff. The resulting outflow hydrograph was then added to the hypothetical discharge hydrograph from the lower area (Chow, 1964). It was determined by this analysis that the peak outflow from Massabesic Lake would be considerably less than, and occur several hours after, the peak discharge from the lower area. The 10-year discharge of Great Cohas Brook is the Massabesic Lake peak discharge at the upstream side of Canal Avenue dam. At the downstream side of the Canal Avenue dam on Great Cohas Brook, the 10-year discharge is the Massabesic Lake discharge contribution to the downstream peak. Massabesic Lake acts as a storage basin in reducing and desynchronizing peak discharges.

For the Town of Milford, the peak discharges for the 10-, 50-, 100-, and 500-year floods for the Souhegan River, Purgatory Brook, Great Brook No. 2 downstream of Osgood Pond, and Tucjer Brook downstream of Service Road "A" were computed by the SCS using the convex routing method described in Section 4 of Hydrology, National Engineering Handbook (U.S. Department of Agriculture, 1972). The reasonableness of these discharges was checked using regional discharge-frequency equations developed by Manuel Benson and by the USGS

(U.S. Department of the Interior, 1962). Discharges for the remaining portions of Great Brook No. 2, Tucker Brook, and Ox Brook were determined by averaging results from regional discharge-frequency equations by Manuel Benson and by the USGS. The discharges for Hartshorn Brook were obtained by averaging results of the regional equations by Benson and an area-weighted transposition with an adjusted log-Pearson frequency analysis of the gage at Hop Brook in Massachusetts (gage no. 01174000).

Peak discharges for North Branch, Shedd Brook, and Black Pond Brook were derived from a weighted average between values predicted by Manuel Benson's regional discharge-frequency equations (USGS, 1962) and discharge-frequency relationships from the gage at Beards Brook (Gage No. 084500). Peak discharges for Sand Brook and for the approximate study streams in the Town of Hillsborough were derived from values predicted by Manuel Benson's discharge-frequency equations (USGS, 1962).

Discharge-frequency data for the outlets of Weare Reservoir and Daniels Lake and the Piscataquog River between Weare Reservoir and Everett Lake were determined from equations based on multiple-regression analyses of data from the USGS gaged sites in New Hampshire and adjoining areas of bordering states (U.S. Department of the Interior, 1978). The equations contain the independent variables basin drainage area, main-channel slope, and a precipitation intensity index.

The analysis of Everett Lake was based on a log-Pearson Type III distribution of annual peak elevation data (U.S. Department of the Interior, 1981). The source of data for Everett Lake were records of lake elevations maintained by the USACE for the period 1962-1991. In the analysis, an historic period of 53 years was assigned to the 1987 flood peak. USGS stream gage data indicate that the 1987 flood was the greatest since at least the 1938 flood in the vicinity of the Town of Weare.

Part of the log-Pearson Type III analysis involves the calculation of the sample standard deviation. G. D. Tasker and E. J. Gilroy of American Geophysical Union have noted that when hydrologic time series data, such as annual-peak lake elevation data, exhibit a significant serial correlation, the sample estimate of the standard deviation is biased (American Geophysical Union, 1982). To account for this potential bias, Tasker and Gilroy published a table of correction factors based on serial correlation coefficient of 0.019. Based on the correlation coefficient of 0.019 and 29 years of record, the sample standard deviation should be adjusted by less than one percent. This adjustment was considered insignificant and no changes to the computed 100-year flood for Everett Lake were made.

Countywide Analysis

For this countywide study, hydrologic analyses were conducted to establish the peak discharge frequency relationships for floods of the selected recurrence intervals for Baboosic Brook, Chase Brook, Gumpas Road Brook, Merrimack

River, Naticook River, Nesenkeag Brook, Pennichuck Brook, Second Brook, Salmon Brook, Souhegan River, and Tributary B No. 1.

For this study, the discharge values for Second Brook were used from the 1978 FIS for the Town of Hudson.

The discharges used in the 1979 FIS for the Town of Merrimack for Baboosic Brook were determined to be appropriate for use in this revision.

Discharge values for Gumpas Road Brook were obtained from the previous FIS for the Town of Pelham (FEMA, 1979) and from regional regression equations for estimating peak-flow discharges in New Hampshire (LeBlanc, 1978; U.S. Department of the Interior, Geological Survey, 2003).

Discharge values for Pennichuck Brook and Salmon Brook were obtained from regional frequency-related equations (U.S. Department of Interior, 1978). For Pennichuck Brook, discharges were routed through Hollis Pond but it was found that the relatively small storage per square mile of drainage area had little effect on peak discharges. As routed flood outflows were similar to flood inflows, the more conservative non-routed flood flows as determined with the USGS regional regression equations for New Hampshire were used to determine flood discharge values. For Salmon Brook, the discharge values as determined for the previous 1979 FIS and subsequent 2002 revision for the City of Nashua were, in general, more conservative and were used again for this study.

It was concluded that the discharges used in the 1979 Merrimack FIS for the Merrimack River and Baboosic Brook were appropriate for use in this study.

The discharges used in the 1979 Litchfield FIS for Nesenkeag Brook were updated for this study based on regional regression equations developed for unregulated, rural streams in New Hampshire (U.S. Department of the Interior, 1978). It was concluded that the discharges used in the 1979 FIS for Chase Brook and Tributary B No. 1 were appropriate for use in this study.

For Naticook Brook, peak-flows were estimated using regional regression equations developed for small, unregulated, rural streams in Massachusetts (U.S. Department of the Interior, 1983). The Storage Indication Method (Roberson et al, 1988) was used to route the peak discharges though Naticook Lake and Green Pond.

For the Souhegan River, peak discharges at the USGS gaging station in Merrimack, New Hampshire (Gage No. 01094000) were based on frequency-discharge values determined using the USGS log-Pearson Type III analysis (U.S. Department of the Interior, 1977). Discharge values at other locations on the Souhegan River were based upon a drainage area relationship with USGS Gage No. 01094000. Flood protection measures in the upper Souhegan watershed were considered in the analysis.

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

TABLE 5 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
AUTUMN BROOK					
At confluence with Piscataquog River	1.3	150	320	370	640
At confluence with 2nd Tributary	1.1	130	280	320	550
BABOOSIC BROOK					
Mouth of Souhegan River	48.6	1,570	2,720	3,340	5,250
Upstream of confluence with Riddle Brook	37.2	1,310	2,270	2,790	4,370
Upstream of confluence with McQuade Brook	28.3	990	1,710	2,100	3,300
At dam at Merrimack corporate limits	22.6	900	1,560	1,920	3,020
At Amherst-Bedford corporate limits	16.9	540	1,230	1,520	2,610
At Baboosic Lake Outlet	3.1	30	70	90	160
BARTEMUS BROOK					
At confluence with Nashua River	1.19	130	253	305	505
BEARDS BROOK					
At confluence with Contoocook River	120.0	4,000	6,700	8,200	12,000
Upstream junction with North Branch Brook at USGS Gage Station	55.0	2,300	3,900	4,800	7,100
Downstream junction with Shedd Brook at Station 2.16	54.9	2,285	3,875	4,770	7,055
Upstream junction with Shedd Brook at Station 2.17	33.7	1,585	2,690	3,310	4,890
Downstream junction with Loon Pond Outlet at Station 3.80	30.5	1,470	2,490	3,065	4,535
Downstream junction with Contention Pond outlet at Station 6.20	26.0	1,300	2,210	2,720	4,020
Downstream junction with Tributary A at Station 7.40	21.9	1,145	1,940	2,390	3,540

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
BEARDS BROOK (continued)					
Upstream junction with Tributary A at Station 7.42	18.0	990	1,680	2,065	3,055
Bradford Town line	11.1	690	1,165	1,435	2,120
BEAVER BROOK NO. 1					
Pelham-Dracut town line	83.7	1,655	3,130	3,720	6,050
Just downstream of New Meadow Brook	82.9	1,665	3,155	3,750	6,080
Just upstream of New Meadow Brook	79.1	1,580	3,010	3,515	5,750
Just downstream of Gumpas Road Brook	77.6	1,590	3,040	3,611	5,800
Just upstream of Gumpas Road Brook	75.6	1,550	2,965	3,525	5,620
Just downstream of Golden Brook	74.5	1,545	2,955	3,515	5,600
Just upstream of Golden Brook	56.2	1,615	2,755	3,420	5,295
Pelham-Windham town line	51.0	1,505	2,560	3,185	4,925
Pelham-Windham-Hudson town line	48.6	1,450	2,470	3,070	4,750
At confluence with Robinson Brook	48.29	1,400	2,430	3,010	4,670
BEAVER BROOK NO. 2					
At confluence with Souhegan River	12.4	940	2,300	2,800	4,600
Downstream of confluence with Tributary D	10.2	910	2,200	2,800	4,500
Downstream of confluence with Caesars Brook	8.2	770	1,900	2,400	4,000
BETTYS BROOK					
At confluence with Joe English Brook	2.3	130	380	470	890
At State Highway 101	1.4	100	300	370	690
BLACK POND BROOK					
At confluence with Shedd Brook	8.7	530	950	1,190	1,810
At Windsor Town line	5.2	420	765	940	1,450

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
BOG BROOK					
At confluence with Piscataquog River	9.2	640	1,250	1,470	2,350
BOWMAN BROOK					
At confluence with Merrimack River	6.0	430	800	990	1,630
At State Route 114	2.59	230	440	540	900
CAESARS BROOK					
At confluence with Beaver Brook	2.8	460	1,300	1,600	2,800
At Amherst Road	1.6	260	760	940	1,700
CHASE BROOK					
At confluence with Merrimack River	7.7	320	600	740	1,170
Downstream of confluence with Campbell Brook	7.25	300	570	700	1,110
Downstream of confluence with Tributary B No. 1	6.13	280	520	640	1,020
At upstream Litchfield corporate limit	2.95	170	330	400	660
CONTOOCOOK RIVER					
Contoocook Valley Paper Company Dam	374.5	9,100	17,000	21,600	32,000
Hillsborough Manufacturing Company Dam	348.4	8,760	16,360	20,780	30,800
Antrim-Hillsborough Town line	221.2	6,380	11,900	15,120	22,400
At the Town of Antrim-Town of Deering corporate limits	212	6,200	11,560	14,700	21,800
At the Town of Antrim-Town of Hancock corporate limits	193	5,800	10,800	13,750	20,400
At Bennington Bridge	190	5,600	10,500	13,400	20,000
At the B&M Railroad	184	5,250	9,800	12,600	19,000
At Forest Road	165	4,200	7,900	10,500	16,700
At Cavender Road	151	3,510	6,580	9,150	15,070

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
CONTOOCOOK RIVER (continued)					
At Greenfield-Hancock-Peterborough corporate limits	107.0[1]	2,890	5,420	7,500	12,415
At Transcript Dam	79.9[1]	2,660	4,990	7,150	11,430
At USGS Gage	68.1	2,300	4,310	5,700	9,890
At downstream confluence with Gridley River	54.0	1,850	3,470	4,300	7,950
FERGUSON BROOK					
At Link Road	8.6	650	1,200	1,460	2,350
At State Route 137	3.4	290	550	690	1,110
GAMBOL BROOK					
At confluence with Souhegan River	16.2	550	1,180	1,450	2,580
Downstream of Miller Brook	13.3	430	760	950	1,510
GOLDEN BROOK					
At the mouth	17.8	390	860	1,025	1,880
Just downstream of Island Pond Brook	17.4	405	895	1,060	1,940
Just upstream of Island Pond Brook	14.1	345	780	925	1,670
Just downstream of Simpson Mill Brook	12.8	315	720	860	1,550
Pelham-Windham town line	11.6	100	550	705	1,490
GORHAM BROOK					
At confluence with Piscataquog River	6.9	310	590	750	1,220
At confluence with 1st Tributary	5.9	260	490	630	1,040
GREAT BROOK NO. 1					
At mouth	10.0	680	1,250	1,550	2,400

[1]Effective drainage area equals total drainage area minus 44 square miles controlled by Edward MacDowell Dam on Nubanusit Brook

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
GREAT BROOK NO. 2					
At mouth	10.5	575	860	1,010	1,670
At Osgood Pond outlet	5.4	300	390	450	800
GREAT COHAS BROOK					
At Brown Avenue	68.0	1,850	3,100	3,800	6,000
At South Willow Street	66.0	1,700	3,000	3,600	5,600
Downstream side of Canal Avenue dam	45.5	325	520	620	900
Upstream side of Mill Pond dam	45.5	600	1,000	1,200	1,800
GUMPAS POND BROOK					
At Pelham-Dracut town line	3.7	200	345	425	715
Just downstream of Sherburne Road Brook	3.6	195	340	420	710
Just downstream of Tributary G	2.5	150	265	325	565
Outlet of Gumpas Pond	1.7	17	72	90	540
GUMPAS ROAD BROOK					
At the mouth	1.3	54	78	88	114
Just upstream of Marsh Road	1.1	48	69	77	100
At Buras Road	0.6	33	61	74	96
HARTSHORN BROOK					
At Jennison Road	4.1	330	580	670	1,180
HASSELLS BROOK					
At confluence with Salmon Brook	2.22	130	220	270	390
At confluence with Hale and Harris Brooks	1.74	90	160	190	300
HOLTS BROOK					
Upstream of confluence with Souhegan River	1.1	80	240	290	500
At Merrimack Road	0.8	70	210	260	500
HOSLEY BROOK					
At Hunts Pond Brook	1.6	145	240	290	490

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
ISLAND POND BROOK					
At the mouth	3.2	70	135	165	285
Just downstream of Tributary D	2.8	65	130	155	270
Just upstream of Tributary D and Tributary E	1.5	7	28	33	148
Outlet of Island Pond	1.3	7	28	33	148
JOE ENGLISH BROOK					
At State Highway 101	12.7	770	1,840	2,500	3,850
At Horace Greeley Road	8.6	490	1,200	1,500	2,500
LIMIT BROOK					
At Hudson, NH-Tyngsborough, MA boundary	7.54	420	820	980	1,570
LYLE REED BROOK					
At confluence with Nashua River	2.04	90	170	220	370
At confluence with Tumble Brook	1.53	70	140	180	300
McQUADE BROOK					
At mouth of Baboosic Brook	8.66	600	1,120	1,370	2,270
At State Route 101	6.16	470	880	1,080	1,790
At pond at North Amherst Road	3.87	330	610	760	1,250
MERRIMACK RIVER					
At Lowell USGS gage station #01100000	4,635	56,000	88,000	108, 000	153,000
At Nashua U.S. Weather Bureau Gage (Route 111 bridge)	3,982	53,000	85,000	102,000	148,000
At Merrimack-Nashua boundary	3,410	45,000	74,000	90,000	136,000
At Goffs Falls USGS gage 0109200	3,092	44,000	56,000	69,000	127,000
At Amoskeag Dam	2,854	42,000	51,000	65,000	122,000

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
MIDDLE BRANCH PISCATAQUOG RIVER					
At mouth	41.0	1,505	2,770	3,320	5,145
Just upstream of Otter Brook	31.1	1,115	2,390	2,900	4,725
Just upstream of Meadow Brook	25.6	780	1,720	2,090	3,350
Just upstream of Peacock Brook	16.3	570	1,290	1,570	2,500
Just downstream of Buxton Brook	14.5	4,259	90	1,200	2,000
MILL BROOK					
At confluence with Stony Brook	9.6	360	630	800	1,230
At upstream detailed study limit	6.9	165	227	289	386
MOOSE BROOK					
At Longview Road	7.8	500	930	1,260	2,000
NASHUA RIVER					
At confluence with Merrimack River	413.0	8,550	15,750	20,180	34,500
At Massachusetts State Line	390.0	8,300	14,300	17,800	28,300
NATICOOK BROOK					
At mouth	3.91	150	248	298	457
Upstream of confluence with Horseshoe Pond	3.23	126	209	252	389
Upstream of Unnamed Tributary approximately 225 feet upstream of Executive Park Drive	2.35	89	150	181	284
Outlet of Greed Pond	1.34	16	31	37	65
NESENKEAG BROOK					
At confluence with Merrimack River	9.59	368	611	737	1,110
At Brickyard Drive	9.03	345	574	693	1,050
At Albuquerque Boulevard	8.07	307	510	616	931

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
NEW MEADOW BROOK					
At the mouth	3.7	184	275	345	510
At Jerico Road	2.6	140	210	260	385
At upstream study limit	1.9	110	165	205	300
NISSITISSIT RIVER					
Pepperell-Massachusetts Town boundary	48.7	1,360	2,040	2,690	3,930
NORTH BRANCH					
At confluence with Beards Brook	64.0	2,700	4,700	5,850	8,605
At outlet from Lake Franklin Pierce	62.5	2,230	4,205	5,290	7,885
NORTH BRANCH CONTOOCOOK RIVER					
At USGS gage	54.8	2,500	4,780	5,600	8,400
At Loneren Mills	51.8	2,370	4,520	5,300	8,000
At the Town of Antrim-Town of Stoddard corporate limits	47.0	2,150	4,100	4,800	7,200
NORTH CHANNEL PISCAQUOG RIVER					
USGS gaging station just west of Henry Street	202	5,300	9,700	12,500	21,000
NUBANUSIT BROOK					
At confluence with Contoocook River	49.0[1]	650	700	800	900
OTTER BROOK					
At confluence with Contoocook River	15.4	440	1,070	1,300	2,820
A confluence with Otter Brook	3.9	130	140	150	170
At Boston and Maine Railroad Bridge	2.0	110	310	380	780

[1]Of 49 square miles total drainage area, 44 are controlled by Edward MacDowell Dam

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
OTTER LAKE BROOK					
At confluence with Otter Brook	3.9	130	140	150	170
OX BROOK					
At Armory Road	2.8	215	440	535	885
PARKHURST BROOK					
At confluence with Joe English Brook	1.7	150	450	560	910
At Schoolhouse Road	0.9	90	270	340	600
PEACOCK BROOK					
At confluence with Witches Brook	2.2	215	444	503	830
At State Highway 122	1.9	208	433	485	825
PENNICHUCK BROOK					
At confluence of Merrimack River	25.76	821	1,300	1,550	2,240
Supply Pond Dam	25.45	769	1,200	1,430	2,070
Harris Pond Dam	24.92	696	1,070	1,270	1,820
Bower Pond Dam	23.00	629	967	1,150	1,640
Holts Pond Dam	19.95	539	830	984	1,410
Upstream of Holts Pond Dam	18.83	532	826	982	1,410
Confluence with Witches Brook	5.29	185	307	369	558
PISCATAQUOG RIVER					
At Goffstown USGS Gage #01091500	138.0	5,300	9,700	12,500	21,000
At confluence with Bog Brook	129.7	4,500	7,500	9,400	13,500
At the Riverdale Dam	69.0	*	*	2,200	*
At the outlet of Everett Lake and USGS gage No. 01090800	63.1	*	*	2,200	*
At the inlet to Everett Lake	41.0	*	*	3,860	*
Upstream from the confluence of Center Brook	34.2	*	*	3,380	*
At the outlet of Weare Reservoir	27.5	*	*	2,880	*

*Data not available

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
PISCATAQUOG RIVER (continued)					
At confluence with South Branch	15.1	280	520	730	1,100
At eastern Deering corporate limit	11.55	435	800	1,080	1,700
Downstream of confluence with unnamed tributary near mile 0.80	11.26	410	760	1,030	1,620
Upstream of confluence with unnamed tributary at mile 0.800	10.67	390	715	970	1,550
Downstream of confluence with unnamed tributary at mile 1.250	10.24	340	630	865	1,450
Upstream of confluence with unnamed tributary at mile 1.250	9.95	330	605	835	1,400
Downstream of confluence with unnamed tributary at mile 1.930	9.78	315	585	810	1,350
Upstream of confluence with unnamed tributary at mile 1.930	9.0	285	530	735	1,250
Downstream of confluence with unnamed tributary at mile 2.800	8.59	235	440	620	1,000
At outlet to Deering Reservoir	4.54	210	400	545	860
POINTER CLUB BROOK					
At confluence with Merrimack River	3.61	200	370	460	740
At dirt road (Station 1.67)	1.20	90	150	190	290
At Back River Road	1.19	75	125	155	235
At Gravel Road	0.80	50	85	105	160
At Meadowcrest Drive	0.62	40	65	80	125
At Southgate Drive	0.48	30	50	65	95
At Northgate Drive	0.29	20	30	40	60
At Forest Drive	0.26	15	25	35	50

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
PULPIT BROOK					
At confluence with Baboosic Brook	5.21	430	770	920	1,480
At downstream Amherst-Bedford corporate limits	4.6	410	740	880	1,420
At upstream Amherst-Bedford corporate limits	1.6	185	340	400	465
PURGATORY BROOK					
At mouth	13.4	1,550	2,820	3,400	5,150
RIDDLE BROOK					
At confluence with Baboosic Brook	8.43	580	1,110	1,390	2,360
At State Route 101	5.55	450	860	1,060	1,820
SALMON BROOK					
At confluence with Merrimack River	30.34	670	1,110	1,350	1,940
Downstream of confluence with Hassells Brook	28.82	660	1,110	1,350	1,920
Upstream of confluence with Hassells Brook	27.08	630	1,050	1,280	1,850
At Massachusetts State line	22.36	550	920	1,120	1,620
SAND BROOK					
At outlet of Gould Pond	10.0	170	355	415	820
At inlet of Gould Pond	8.8	470	1,135	1,425	2,725
At confluence with Nelson Brook	7.9	430	1,040	1,310	2,500
SECOND BROOK					
At confluence with Merrimack River	4.94	240	430	510	770
Upstream of Pelham Road bridge	4.43	225	395	480	715
Cross section O	3.95	205	360	435	645
SHEDD BROOK					
At confluence with Beards Brook	21.2	1,050	1,840	2,320	3,525
Downstream junction with Black Pond Brook at Station 2.685	20.0	975	1,715	2,170	3,250

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
SHERBURN MILL BROOK					
Mouth of Souhegan River (Merrimack)	3.69	190	505	630	1,300
At Amherst-Merrimack corporate limits (near Thornton Ferry Road)	3.5	170	350	450	750
At Spring Road	1.9	120	250	320	540
SIMPSON MILL BROOK					
At the mouth	1.3	75	105	120	150
Just downstream of Tributary F	1.0	60	85	95	120
SOUHEGAN RIVER					
At the mouth	220	8,000	12,940	15,540	22,980
Confluence with Baboosic Brook	171	6,210	10,050	12,070	13,840
Confluence with brook at Turkey Hill	168	6,130	9,910	11,900	17,590
Confluence with Tributary A	165	5,980	9,670	11,610	17,160
At Amherst-Merrimack corporate limits	159	5,780	9,360	11,240	16,610
At Wilton-Milford boundary	102.0	3,740	6,360	7,550	11,000
At confluence with Hartshorn Brook	120.0	4,500	7,800	9,300	13,600
At Amherst-Milford boundary	144.0	5,150	9,020	10,800	16,000
From upstream Stony Brook to downstream Gambol Brook	66.8[1]	3,217	5,500	6,500	9,200
From upstream Gambol Brook to upstream detailed study limit	45.7[1]	2,670	4,320	5,050	6,620
Downstream limit of detailed study	31.9	955	1,560	1,885	3,600
At downstream corporate limits	29.88	*	*	1,885	*
At confluence with Furnace Brook	27.59	*	*	1,555	*
At confluence with the West Branch of the Souhegan River	22.78	*	*	1,190	*
At Flood Control Site 19 Dam	11.57	*	*	230	*

[1]Drainage area at the downstream limit of the reach
*Data not available

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
SOUTH BRANCH PISCATAQUOG RIVER					
At confluence with Piscataquog River	104.8	3,800	6,100	7,100	10,400
At Goffstown corporate limit	104.7	3,690	5,910	6,990	10,220
Upstream of confluence with Middle Branch Piscataquog River	58.9	2,295	3,845	4,570	7,050
Upstream of Route 113 bridge at RM9	54.1	2,150	3,610	4,290	6,610
Upstream of confluence with Meadow Brook	47.3	1,950	3,260	3,880	5,980
Upstream of confluence with Lords Brook	42.0	1,780	2,980	3,550	5,470
SPIT BROOK					
At confluence with Merrimack River	1.42	150	290	350	570
At confluence with Side Tributary	1.25	130	240	290	470
STONY BROOK[1]					
From confluence with Souhegan River to downstream Beaver Dam Brook	34.7[2]	2,900	4,700	5,700	8,100
From upstream Beaver Mill Brook to downstream Mill Brook	27.2[2]	2,760	4,470	5,400	7,620
From upstream Mill Brook to upstream detailed study limit	17.4[2]	1,570	3,155	3,915	6,440
At Greenfield-Lyndeborough corporate limits	4.0	225	480	540	960
At Boston and Maine Railroad bridge	0.7	90	275	335	730

[1]Reach discharges determined by U.S. Soil Conservation Service
[2]Drainage area at the downstream limit of the reach

TABLE 5 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
TIOGA RIVER					
At confluence with Merrimack River	3.32	220	350	415	620
At U.S. Route 3	2.87	190	305	365	545
At Patten Road	2.13	160	250	300	450
TRIBUTARY A					
At mouth at Souhegan River (Greenville)	1.1	115	185	225	340
TRIBUTARY B NO. 1					
At confluence with Chase Brook	1.96	120	230	300	490
At Litchfield corporate limit	1.14	80	150	190	310
TRIBUTARY B NO. 2					
At Greenfield-Lyndeborough corporate limits	3.1	355	1,100	1,375	2,965
At Miner Road	2.3	305	850	1,030	2,060
TUCKER BROOK					
At mouth	4.1	330	640	780	1,230
At new State Route 101	2.6	270	550	640	1,070
WITCHES BROOK					
Mouth of Pennichuck Brook	11.98	340	575	700	1,020
Amherst Town boundary	5.41	200	330	400	570

The stillwater elevations have been determined for the 10-, 50-, 100-, and 500-year floods for the flooding sources studied by detailed methods and are summarized in Table 6, “Summary of Stillwater Elevations.”

TABLE 6 - SUMMARY OF STILLWATER ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION (FEET NAVD*) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
BABOOSIC LAKE				
Entire shoreline	233.4	235.7	236.7	240.2
DANIELS LAKE				
Entire shoreline	**	**	376.2	**
EVERETT LAKE				
Entire shoreline	**	**	415.1	**
GUMPAS POND				
Entire shoreline	201.7	203.1	203.5	205.7
NATICOOK LAKE				
Entire shoreline	207.4	207.6	207.7	207.9
WATER LOOM POND				
Entire shoreline	**	**	930.9	**
WEARE RESERVOIR (LAKE HORACE)	**	**	656.7	**

*North American Vertical Datum of 1988 (NAVD)
**Not determined

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. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the revised FIRM (Exhibit 2).

Cross sections were determined from topographic maps and field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry. All topographic mapping used to determine cross sections is referenced in Section 4.1.

Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals.

The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Precountywide Analyses

For each community within Hillsborough County that has a previously printed FIS report, the hydraulic analyses described in those reports have been compiled and are summarized below.

The valley portions for the cross-section data for Baboosic Brook (in Bedford), Bartemus Brook, Bowman Brook, Chase Brook, Hassells Brook, Lyle Reed Brook, McQuade Brook, Merrimack River, Nashua River, Nesenkeag Brook, Nissitissit River, Pennichuck Brook, Pulpit Brook (in Bedford), Riddle Brook, Salmon Brook, Spit Brook, Tioga River, Tributary B, Witches Brook, were obtained from maps photogrammetrically prepared by Geod Aerial Mapping, Inc.(Geod Aerial Mapping, 1976). For Autumn Brook, Baboosic Brook, Beards Brook, Beaver Brook No. 1, Beaver Brook No. 2, Bettys Brook, Black Pond Brook, Bog Brook, Caesars Brook, Contoocook River, Golden Brook, Gorham Brook, Gumpas Pond Brook, Gumpas Road Brook, Hartshorn Brook, Holts Brook, Island Pond Brook, Joe English Brook, New Meadow Brook, North Branch, Otter Brook, Otter Lake Brook, Ox Brook, Parkhurst Brook, Peacock Brook, Piscataquog River, Pulpit Brook, Sand Brook, Shedd Brook, Sherburn Mill Brook, Simpson Mill Brook, Souhegan River, South Branch Piscataquog River, Stony Brook, Tributary B (in Greenfield) this data was photogrammetrically prepared by James B. Sewall Company (James W. Sewall Company, 1976); the below water portions were obtained by field measurements.

For the November 19, 1980, FIS, for the Town of Greenville, the overbank portions of cross-section data for the Souhegan River and Tributary A were obtained from mapping provided by Geod Aerial Mapping, Inc. (Geod Aerial Mapping, 1978). The portions of the cross sections contained within the limits of the channel were obtained by field survey by Kenneth A. LeClair Associates (Kenneth A. LeClair, 1978).

For the 1980 FIS for the Town of New Boston, the overbank portions of the cross-section data for the Piscataquog River, Middle Branch Piscataquog River, and South Branch Piscataquog River, as well as the portions of the of the cross sections contained within the limits of the channel were obtained by Kenneth A. LeClair Associates (Kenneth A. LeClair, 1977). For the May 21, 2001, revision, the overbank portions of the cross-section data, as well as the portions of the cross sections contained within the limits of the channel, were obtained by field survey by the USGS in the fall of 1997.

For the November 1979 FIS for the Town of Peterborough, the valley portions of the cross-section data for Contoocook River, Nubanusit Brook, and Otter Brook,

were obtained using photogrammetric maps at scales of 1:4800 and 1:2400, with a contour interval of 5 feet (State of New Hampshire, 1977; USGS, 1960). The below-water portions were obtained by field measurement by Thomas F. Moran, Inc. Bridge Plans and structure surveys from the Flood Plain Information Report (USACE, 1974) were utilized to obtain elevation data and structural geometry.

For the June 2, 1993, FIS for the Town of Weare, the 100-year flood elevations for the Piscataquog River and Daniels Lake were computed by applying the WSPRO step-backwater computer model (Federal Highway Administration, 1986, 1990). The 100-year flood elevation for Weare Reservoir was computed by applying flow over broad-crested weir formulas (U.S. Department of the Interior, 1967). The starting water-surface elevations for the 100-year discharge on the Piscataquog River at the corporate limits near Riverdale was computed using the slope-conveyance method (Federal Highway Administration, 1986, 1990). Riverdale Dam was modeled assuming the bascule gate was completely lowered (USACE, 1977). The starting water-surface elevation for Piscataquog River upstream from Everett Lake was determined to be the 100-year flood elevation for Daniels Lake. Daniels Lake dam was modeled with flash-boards in place. Critical flow was computed at the dam and the WSPRO model was used to calculate the corresponding lake elevation.

For the October 4, 1982, FIS for the Town of Hancock, for the Contoocook River, all cross section and bridge data were obtained from basic data used in the FIS for the Town of Greenfield (FEMA, 1979). Cross-section data for Moose Brook, Ferguson Brook, and Hosley Brook were obtained from topographic maps prepared by photogrammetric methods (Eastern Topographics, 1979).

Cross-section data for Pointer Club Brook from Back River Road to Forest Drive were obtained from field surveys and a USGS topographic map enlarged to a scale of 1:6,000 with a contour interval of 10 feet (U.S. Department of the Interior, 1968, 1985). Cross-section information for McQuade Brook Split Flow was taken from field surveys and topographic maps (Thomas F. Moran, 1983).

Cross sections of the Great Cohas Brook analyses were field surveyed and were located at close intervals above and below bridges and dams in order to compute representative profiles.

In the FIS for the City of Manchester, typical cross sections for the Merrimack River and the Piscataquog River were developed from topographic maps (U.S. Department of the Interior, Geological Survey, 1968, 1969) and bridge plans used in the Flood Information Report (USACE, 1976). Two typical cross sections, one for each river in the City of Manchester, were taken from photogrammetric maps (City of Manchester, 1965, 1976).

For McQuade Brook Split Flow, the HEC-2 model used to create the rating curve was used to establish base (100-year) flood elevations from McQuade Brook to a point approximately 300 feet downstream of Gage Girls Road. A 15-inch pipe beneath Gage Girls Road allows a small stream to pass beneath the road under normal conditions; however, this pipe was partially blocked with sediment at the

time of survey and was not considered as part of this analysis. Downstream of the reach affected by this analysis, an approximate 100-year floodplain has been delineated. Water-surface elevations at several crossings of this stream were calculated manually, and floodplain boundaries were delineated using available subdivision plans (Thomas F. Moran, Inc., 1983). However, because these plans were not finalized and those calculations ignore any flow resulting from the watershed of the stream itself, the calculations were not used to establish base (100-year) flood elevations.

Along certain portions of McQuade Brook Split Flow, a profile base line is shown on the maps to represent channel distances as indicated on the flood profiles and floodway data tables.

Water-surface elevations of floods of the selected recurrence intervals were computed for most streams using the USACE HEC-2 step backwater computer program (USACE, 1991). For the Towns of Bennington, Hancock, Milford, New Ipswich, and Wilton, water-surface elevations for selected recurrence intervals on the Contoocook River, Ferguson Brook, Gambol Brook, Great Brook No. 2, Hartshorn Brook, Hosley Brook, Mill Brook, Moose Brook, Ox Brook, Purgatory Brook, Souhegan River, Stony Brook, and Tucker Brook, were computed using the SCS-WSP-2 step-backwater program (U.S. Department of Agriculture, Soil Conservation Service, 1976).

For the Town of Amherst, upstream of river mile 12.318, water-surface elevations were taken directly from the Flood Hazard Analysis for the Town of Milford (U.S. Department of Agriculture, Soil Conservation Service, 1976).

Starting water-surface elevations for the North Branch Contoocook River were based on flow over a weir.

Starting water-surface elevations for the Souhegan River were taken from the Merrimack River profiles. In the Town of Greenville, the starting water-surface elevation for the Souhegan River was determined by normal depth analysis.

Starting water-surface elevations for the Contoocook River were obtained from the Hillsborough Flood Plain Information Study (USACE, 1974). In the Towns of Greenfield and Hancock, the starting water-surface elevations for the Contoocook River were taken from a stage-discharge rating curve developed at Powder Mill Pond in Bennington, New Hampshire.

Starting water-surface elevations for the Merrimack River were calculated by an interpolation of stage-discharge curves located at the upstream and downstream Hudson town boundary and the upstream and downstream Nashua city boundary.

For the Towns of Goffstown and New Boston, starting water-surface elevations for the Piscataquog River were obtained from a rating curve at Kelly's Falls Dam located downstream of Goffstown in Manchester. Water-surface elevations were also adjusted to agree with the rating curve of the USGS Gaging Station #01091500 near Henry Bridge Road.

For the City of Manchester, starting water-surface elevations for the Piscataquog River and the North Channel Piscataquog River were determined on coincident flood elevations on the Merrimack River. Water-surface elevations on the Merrimack River, the North Channel Piscataquog River, and Piscataquog River were taken from a previously published Flood Plain Information Report (USACE, 1976).

For the Town of Deering, starting water-surface elevations for the Piscataquog River were determined through normal depth analysis. The elevations for Deering Reservoir were determined from a rating curve based on the characteristics of the spillway of the reservoir.

Starting water-surface elevations for Spit Brook and Hassells Brook were taken from discharge-elevation curves calculated for the culverts at the streams' respective downstream study limits.

Starting water-surface elevations were developed by normal depth analysis for Beaver Brook No. 1, Beaver Brook No. 2 (except in the Town of Pelham), Black Pond Brook, Lyle Reed Brook, Salmon Brook, Pennichuck Brook, Nashua River, Naticook Brook, Bartemus Brook, Tioga River, Pointer Club Brook, Bowman Brook, Autumn Brook, Bog Brook, Gorham Brook, Caesars Brook, Bettys Brook, Holts Brook, Parkhurst Brook, Golden Brook, Island Pond Brook, Gumpas Pond Brook, Gumpas Road Brook, New Meadow Brook, North Branch, Sand Brook, Shedd Brook, Simpson Mill Brook, Nissitissit River, Tributary A (for the Town of Greenville), Gambol Brook, Great Brook No. 2, Tucker Brook, Hartshorn Brook, Tucker Brook, Purgatory Brook, Stony Brook, Otter Brook, Nubanusit Brook, and Ox Brook.

For Baboosic Brook, the starting water-surface elevations were taken from the Souhegan River profiles.

For Riddle Brook, Pulpit Brook, Joe English Brook, and McQuade Brook, the starting water-surface elevations were taken from the Baboosic Brook profiles.

For Witches Brook, the starting water-surface elevations were taken from the Pennichuck Brook profiles.

For Tributary A, the starting water-surface elevations were taken from the Mean Annual Flood profiles for the Souhegan River.

For South Branch Piscataquog River, the starting water-surface elevations were taken from the Piscataquog River profiles.

For Nesenkeag Brook and Chase Brook, starting water-surface elevations were taken from the Merrimack River mean annual Flood profile.

For Tributary B, the starting water-surface elevations were taken from the Chase Brook profiles.

For Peacock Brook, the starting water-surface elevations were taken from the Witches Brook profiles.

For Limit Brook and Second Brook, the starting water-surface elevations were taken from the Merrimack River profiles.

The starting water-surface elevations for Sherburn Mill Brook were taken from the FIS for the Town of Merrimack (FEMA, 1977).

Starting water-surface elevations for Ferguson Brook and Moose Brook were determined using slope-conveyance techniques based on field measurements. Starting water-surface elevations for Hosley Brook were developed using critical depth at the downstream cross section.

Starting water-surface elevations for Great Brook No. 1 were calculated using the slope/area method.

Countywide Analyses

For the revised portions of the Merrimack River, Baboosic Brook, Gumpas Road Brook, Pennichuck Brook, Salmon Brook, Second Brook, and Souhegan River, water-surface elevations for floods of the selected recurrence intervals were computed through the use of the USACE, HEC-RAS River Analysis System (USACE, 2003). Starting water-surface elevations for the Merrimack River were calculated by an interpolation of stage-discharge curves located upstream and downstream of the Hudson town line. Starting water-surface elevations for Pennichuck Brook, Salmon Brook, Second Brook, and Souhegan River, were based on normal depth analysis. Starting water-surface elevations for Gumpas Road Brook step-backwater computations were taken from the previous FIS for the Town of Pelham just downstream of Marsh Road (FEMA, 1979). The computed water-surface elevations were then used along with the USGS topographic maps, digital raster graphs, and digital orthophoto quadrangles to determine the extent of flooding (U.S. Department of the Interior, Geological Survey, 1979, 2003). For Pennichuck Brook and Salmon Brook, the water-surface elevations determined were used along with digital photogrammetry for Nashua (City of Nashua, 1998) and Merrimack (Alan H. Swanson, Inc., 1976) to determine the extent of flooding. Normal depth was assumed for the starting water-surface elevations for Baboosic Brook and Naticook Brook step-backwater computations. The computed water-surface elevations were then used along with the Town of Merrimack contour maps, USGS Digital Orthophoto Quadrangles, and USGS Digital Raster Graphs to determine the extent of flooding (Lockwood Mapping, 1976; U.S. Department of the Interior, 1998; U.S. Department of the Interior, 2003). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. In those areas where the analysis indicated supercritical flow conditions, critical depth was assumed for the flood elevation due to the inherent instability of supercritical flow. For Second Brook, the water-surface elevations determined were used along with digital photogrammetry (Town of Hudson, 2000) to determine the extent of flooding. For the Merrimack River, the water-surface elevations determined were used

along with digital photogrammetry (Town of Hudson, 2000; City of Nashua, 1998) to determine the extent of flooding. Normal depth was assumed for the starting water-surface elevations for the Baboosic Brook, Chase Brook, and Nesenkeag Brook step-backwater computations. The peak water-surface elevations of Chase Brook at the confluence of Tributary B No. 1 were used as the starting water-surface elevation for Tributary B No. 1. The computed water surface elevations were then used along with a digitial 4-foot contour coverage (Aerometric, Inc., 2004)) to determine the extent of flooding as shown on the Flood Insurace Rate Map.

Roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and were based on field observations of the streams and floodplain areas. Roughness factors for all streams studied by detailed methods are shown in Table 7, "Manning's "n" Values."

TABLE 7 – MANNING'S "n" VALUES

Stream	Channel "n"	Overbank "n"
Autumn Brook	0.030-0.050	0.050-0.120
Baboosic Brook	0.025-0.060	0.035-0.090
Bartemus Brook	0.050-0.060	0.040-0.100
Beards Brook	0.030-0.055	0.04-0.09
Beaver Brook No. 1	0.025-0.050	0.060-0.090
Beaver Brook No. 2	0.026-0.064	0.055-0.200
Betty's Brook	0.025-0.050	0.060-0.090
Black Pond Brook	0.035	0.080
Bog Brook	0.030-0.050	0.050-0.120
Bowman Brook	0.030-0.040	0.070-0.090
Caesar's Brook	0.025-0.050	0.060-0.090
Chase Brook	0.035-0.100	0.035-0.125
Contoocook River	0.020-0.060	0.030-0.150
Ferguson Brook	0.035-0.070	0.060-0.150
Gambol Brook	0.030-0.045	0.050-0.075
Golden Brook	0.030-0.050	0.055-0.090
Gorham Brook	0.030-0.050	0.050-0.120
Gumpas Pond Brook	0.030-0.050	0.055-0.090
Gumpas Road Brook	0.040-0.100	0.035-0.100
Great Brook No. 1	0.030-0.035	0.070
Great Brook No. 2	0.025-0.068	0.040-0.120
Great Cohas Brook	0.035	0.060
Hartshorn Brook	0.030	0.060-0.090
Hassells Brook	0.015-0.040	0.015-0.100
Holts Brook	0.025-0.050	0.060-0.090
Hosley Brook	0.045-0.080	0.060-0.120
Island Pond Brook	0.030-0.050	0.055-0.090
Joe English Brook	0.025-0.050	0.060-0.090
Limit Brook	0.026-0.064	0.060-0.200

TABLE 7 – MANNING'S "n" VALUES - continued

Stream	Channel "n"	Overbank "n"
Lyle Reed Brook	0.015-0.040	0.015-0.100
McQuade Brook	0.025-0.070	0.055-0.200
Merrimack River	0.025-0.070	0.060-0.200
Middle Branch Piscataquog Brook	0.030-0.040	0.040-0.120
Mill Brook	0.030-0.045	0.050-0.075
Moose Brook	0.050-0.090	0.080-0.150
Nashua Brook	0.025-0.070	0.060-0.100
Naticook Brook	0.025-0.070	0.055-0.100
Nesenkeag Brook	0.030-0.060	0.070-0.100
New Meadow Brook	0.030-0.050	0.055-0.090
Nissitissit River	0.045-0.050	0.060-0.100
North Branch	0.030-0.035	0.080
North Branch Contoocook River	0.030-0.035	0.070
North Channel Piscataquog River	0.035-0.070	0.065-0.100
Nubanusit Brook	0.014-0.040	0.020-0.100
Otter Brook	0.020-0.040	0.040-0.090
Otter Lake Brook	0.030-0.040	0.040-0.060
Ox Brook	0.030	0.060
Parkhurst Brook	0.025-0.050	0.060-0.090
Peacock Brook	0.025-0.050	0.060-0.090
Pennichuck Brook	0.015-0.070	0.015-0.100
Piscataquog River	0.030-0.070	0.045 -0.120
Pointer Club Brook	0.040-0.100	0.070-0.100
Pulpit Brook	0.025-0.050	0.060-0.090
Purgatory Brook	0.037-0.050	0.050-0.150
Riddle Brook	0.025-0.070	0.055-0.100
Salmon Brook	0.015-0.040	0.015-0.100
Sand Brook	0.025-0.030	0.080
Second Brook	0.026-0.064	0.060-0.200
Shedd Brook	0.035	0.080
Sherburn Mill Brook	0.025-0.050	0.060-0.090
Simpson Mill Brook	0.030-0.050	0.055-0.090
Souhegan River	0.020-0.070	0.055-0.150
South Branch Piscataquog River	0.030-0.060	0.035-0.120
Stony Brook	0.030-0.045	0.050-0.075
Spit Brook	0.015-0.040	0.015-0.100
Tioga River	0.030-0.040	0.070-0.090
Tributary A	0.025-0.070	0.055-0.100
Tributary B No. 1	0.060-0.150	0.045-0.200
Tributary B No. 2	0.030-0.050	0.060-0.100
Tucker Brook	0.030-0.050	0.060-0.120
Witches Brook	0.025-0.070	0.055-0.100

Qualifying bench marks within a given jurisdiction that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference

System (NSRS) as First or Second Order Vertical and have a vertical stability classification of A, B, or C are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier.

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

- Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)
- Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)
- Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)
- Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

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

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

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

3.3 Vertical Datum

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

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD 88. Structure and ground elevations in the community must, therefore, be

referenced to NAVD 88. It is important to note that adjacent communities may be referenced to NGVD 29. This may result in differences in base flood elevations across the corporate limits between the communities.

As noted above, the elevations shown in the FIS report and on the FIRM for Hillsborough County are referenced to NAVD 88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD 29 by applying a standard conversion factor.

The conversion factor from NGVD 29 to NAVD 88 is -0.7, and from NAVD 88 to NGVD 29 is +0.7.

The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 102.4 will appear as 102 on the FIRM and 102.6 will appear as 103. Therefore, users that wish to convert the elevations in this FIS to NGVD 29 should apply the stated conversion factor(s) to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS provides 100-year floodplain data, which may include a combination of the following: 10-, 50-, 100-, and 500-year flood elevations; delineations of the 100-year and 500-year floodplains; and 100-year floodway. This information is presented on the FIRM and in many components of the FIS, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For the streams studied in detail, the 100- and 500-year 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 a scale of 1:24,000, contour intervals of 10 and 20 feet (U.S. Department of the Interior, Geological Survey, 1965, 1967, 1985, 1987, 1993); at a scale of

1:24,000, contour interval of 3 meters (U.S. Department of the Interior, 2003); at a scale of 1:16,000, contour interval 4 feet (Aerometric, Inc., 2004); at a scale of 1:4,800 contour interval 5 feet (Sewall, 1976, 1977, 1978; Geod Aerial Mapping, 1976, 1978; State of New Hampshire, 1960); at a scale of 1:2,400 contour interval 5 feet (Geod Aerial Mapping, 1976; State of New Hampshire, 1977; City of Manchester, 1976; Lockwood Mapping, Inc., 1976)); at a scale of 1:1,200, contour interval 2 feet (Town of Hudson, 2000); at a scale of 1:480, contour interval 2 feet (City of Nashua, 1998); at a scale of 1:400 contour interval 5 feet (Eastern Topographics, 1979; Geod Aerial Mapping, 1976; Sewall, 1976; U.S. Army Corps of Engineers, 1979; at a scale of 1:200 contour interval 5 feet (State of New Hampshire, 1966; Town of Hudson, 1968); and the soil survey map (U.S. Department of Agriculture, Soil Conservation Service, 1985).

In areas along the western bank of the Merrimack River that were lacking the Town of Merrimack 5 foot contour interval base maps, USGS topographic maps with a scale of 1:24000 and a contour interval of 10 feet (U.S. Department of the Interior, Geological Survey, 1968) were used to interpret the flood boundaries between cross sections.

For the streams studied by approximate methods, the 100-year floodplain boundaries were taken from the previously printed FIS/FIRM for the Town of Amherst (FEMA, January, 1979), Town of Antrim (FEMA, October 1, 1980), Town of Bedford (FEMA, May 2, 1994), Town of Bennington (FEMA, October 18, 1982), Town of Deering (FEMA, February, 1979), Town of Goffstown (FEMA, December, 1978), Town of Greenfield (FEMA, November, 1979), Town of Greenville (FEMA, November 19, 1980), Town of Hancock (FEMA, October 4, 1982), Town of Hillsborough (FEMA, December, 1978), Town of Hollis (FEMA, October, 1978), Town of Hudson (FEMA, February, 1978), Town of Litchfield (FEMA, January, 1979), City of Manchester (FEMA, August 18, 1980), Town of Merrimack (FEMA, January, 1979), Town of Milford (FEMA, November, 1979), City of Nashua (FEMA, July 3, 2002), Town of New Boston (FEMA, May 21, 2001), Town of New Ipswich (FEMA, May 15, 1991), Town of Pelham (FEMA, September, 1979), Town of Peterborough (FEMA, November, 1979), Town of Weare (FEMA, June 2, 1993), and Town of Wilton (FEMA, October, 1979).

For this revision, an approximate (Zone A) floodplain was added in the Town of Francestown to match the Zone A floodplain from the Town of Deering. An approximate (Zone A) floodplain was also added to the Town of Greenfield to match the Zone A floodplain from the Town of Bennington. These floodplains were delineated using topographic maps at a scale of 1:24,000 and a contour interval of 20 feet (U.S. Department of the Interior, 1979, et al).

The 100- and 500-year floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year 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 100-year floodplain boundary is shown on the revised FIRM (Exhibit 2).

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 100-year 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 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this FIS for the unrevised streams were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 8). The computed floodways are shown on the revised FIRM (Exhibit 2). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Portions of the floodways for the Contoocook River, Piscataquog River, South Branch Piscataquog River, Merrimack River, Nesenkeag River, Beaver Brook No. 2, Nashua River, and Nissitissit River extend beyond the county boundary.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 8 for certain downstream cross sections of Beards Brook, Beaver Brook No. 1, Bettys Brook, Holts Brook, Parkhurst Brook, Pointer Club Brook, Bowman Brook, Riddle Brook, Autumn Brook, Bog Brook, Otter Lake Brook, Tributary A, Sand Brook, Shedd Brook, North Branch, Witches Brook, Limit Brook, Second Brook, Nesenkeag Brook, Chase Brook, Tributary B, Souhegan River, Pennichuck Brook, Naticook Brook, Nashua River, Bartemus Brook, Lyle Reed Brook, Golden Brook, Island Pond Brook, Gumpas Pond Brook, New Meadow Brook, Simpson Mill Brook, Otter Brook, North Branch, and Nubanusit Brook, are lower than the regulatory flood elevations in that area, which must take into account the 100-year flooding due to backwater from other sources.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Autumn Brook								
A	0.038[1]	15	38	9.1	293.4	292.8[3]	292.8	0.0
B	0.144[1]	25	144	2.4	305.3	305.3	305.6	0.3
C	0.274[1]	25	106	3.3	307.7	307.7	307.7	0.0
D	0.378[1]	35	64	5.4	308.8	308.8	309.1	0.3
E	0.568[1]	35	115	3.0	313.3	313.3	314.3	1.0
Baboosic Brook								
A	470[2]	185	552	6.1	118.2	118.2	118.2	0.0
B	2,125[2]	95	895	3.7	118.2	109.4[4]	109.7	0.3
C	3,617[2]	65	281	11.9	159.2	159.2	159.2	0.0
D	4,655[2]	134	1,560	2.1	175.5	175.5	175.5	0.0
E	8,835[2]	300	3,670	0.9	176.0	176.0	177.0	1.0
F	11,320[2]	295	3,380	1.0	176.1	176.1	177.1	1.0
G	17,420[2]	223	2,130	1.6	176.5	176.5	177.4	0.9
H	20,307[2]	290	2,760	1.2	177.2	177.2	178.0	0.8
I	22,020[2]	121	1,370	2.4	177.7	177.7	178.5	0.8
J	26,448[2]	320	3,470	1.0	178.4	178.4	179.3	0.9
K	28,835[2]	437	4,110	0.7	178.4	178.4	179.4	1.0
L	31,830[2]	100	863	2.4	178.7	178.7	179.7	1.0
M	33,900[2]	82	289	7.3	180.3	180.3	180.4	0.1
N	38,415[2]	275	2,980	0.7	209.7	209.7	210.4	0.7
O	40,730[2]	125	1,570	1.3	209.8	209.8	210.5	0.7
P	46,740[2]	240	1,870	1.1	210.1	210.1	211.0	0.9
Q	51,270[2]	220	2,120	1.0	213.6	213.6	213.8	0.2
R	54,265[2]	295	2,370	0.9	213.9	213.9	214.4	0.5
S	57,490[2]	55	445	4.7	214.7	214.7	215.2	0.5
T	58,725[2]	100	722	2.9	215.8	215.8	216.8	1.0

[1]Miles above confluence with the Piscataquog River
[2]Feet above mouth
[3]Elevation computed without consideration of backwater effects from the Piscataquog River
[4]Elevation computed without consideration of backwater effects from the Merrimack and Souhegan Rivers

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

AUTUMN BROOK – BABOOSIC BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Baboosic Brook (continued)								
U	62,725[1]	205	1,070	2.0	224.1	224.1	224.5	0.4
V	63,432[1]	130	1,510	1.4	230.4	230.4	230.4	0.0
W	63,975[1]	250	1,457	1.3	232.5	232.5	232.5	0.0
X	64,439[1]	30	139	7.2	232.5	232.5	232.5	0.0
Y	66,558[1]	205	1,456	1.0	234.1	234.1	235.0	0.9
Z	69,777[1]	50	352	4.3	235.9	235.9	236.1	0.2
AA	70,867[1]	180	1,140	1.3	236.6	236.6	237.4	0.8
AB	72,537[1]	180	1,119	1.4	236.7	236.7	237.6	0.9
Bartemus Brook								
A	0.24[2]	37	139	2.2	164.6	159.9[3]	160.9	1.0
B	0.28[2]	88	321	1.0	164.6	160.2[3]	161.0	0.8
C	0.31[2]	64	185	1.6	164.6	161.3[3]	161.6	0.3
D	0.38[2]	88	174	1.8	164.6	161.8[3]	162.1	0.3
E	0.43[2]	55	120	2.2	164.6	162.2[3]	162.7	0.5
F	0.46[2]	113	264	1.2	164.6	163.8[3]	163.8	0.0

[1]Feet above mouth
[2]Miles above confluence with Nashua River
[3]Elevation computed without consideration of backwater effects from Nashua River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

BABOOSIC BROOK – BARTEMUS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Beards Brook								
A	0.600	135	1,154	7.1	594.1	588.4[2]	588.6	0.2
B	1.033	105	1,093	7.5	595.8	594.1[2]	594.1	0.0
C	1.234	110	1,031	8.0	595.9	594.1[2]	595.0	0.9
D	1.413	65	798	6.0	602.7	602.7	602.7	0.0
E	1.474	88	648	7.4	602.9	602.9	603.1	0.2
F	1.710	89	648	7.4	618.3	618.3	618.7	0.4
G	1.869	64	437	11.0	625.4	625.4	625.4	0.0
H	1.935	84	605	7.9	628.0	628.0	628.4	0.4
I	2.196	250	2,066	1.6	636.5	636.5	636.5	0.0
J	2.594	240	1,635	2.1	636.8	636.8	637.4	0.6
K	3.181	85	447	7.6	642.0	642.0	642.0	0.0
L	3.738	65	333	10.2	682.8	682.8	682.8	0.0
M	4.370	45	221	13.1	769.9	769.9	769.9	0.0
N	4.630	95	564	5.1	796.1	796.1	796.2	0.1
O	5.009	130	921	3.1	808.6	808.6	809.5	0.9
P	5.854	75	351	8.2	817.0	817.0	817.9	0.9
Q	6.418	150	950	2.7	837.5	837.5	837.7	0.2
R	7.620	400	1,216	1.4	838.4	838.4	839.4	1.0
S	8.786	35	340	5.1	850.3	850.8	850.8	0.0
T	9.473	60	202	8.7	853.5	853.5	853.9	0.4
U	9.721	295	756	2.3	857.9	857.9	858.9	1.0
V	10.170	25	116	10.9	864.8	864.8	864.8	0.0

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

BEARDS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Beaver Brook No. 1								
A	4.798	425	2,887	1.8	123.6	123.6	124.2	0.6
B	5.012	340	1,208	3.1	123.9	123.9	124.4	0.5
C	5.287	600	4,925	0.8	124.4	124.4	125.1	0.7
D	5.507	780	4,908	0.8	124.4	124.4	125.2	0.8
E	5.973	260	1,940	2.0	124.5	124.5	125.5	1.0
F	6.505	1,250	8,668	0.4	124.8	124.8	125.7	0.9
G	7.402	380	2,637	1.4	125.1	125.1	126.0	0.9
H	7.799	350	2,732	1.3	126.9	126.9	127.7	0.8
I	8.238	780	5,574	0.6	127.2	127.2	128.1	0.9
J	8.582	100	1,481	2.4	130.3	130.3	130.5	0.2
K	9.263	130	1,373	2.6	133.4	133.4	133.6	0.2
L	9.76	300	2,901	1.1	133.5	133.5	134.1	0.6
M	9.972	60	796	4.1	134.0	134.0	134.5	0.5
N	10.346	150	1,143	2.9	134.7	134.7	135.6	0.9
O	10.637	135	1,109	3.0	135.9	135.9	136.7	0.8
P	11.194	250	2,376	1.4	137.9	137.9	138.7	0.8
Q	11.646	400	2,355	1.4	138.3	138.3	139.3	1.0
R	11.879	120	782	4.2	140.9	140.9	140.9	0.0
S	12.405	180	1,638	2.0	142.1	142.1	142.8	0.7
T	12.959	185	1,055	3.1	143.5	143.5	144.3	0.8
U	13.586	80	881	3.7	146.1	146.1	147.0	0.9
V	13.926	135[2]	707	4.3	151.3	151.3	151.8	0.5
W	14.037	85[2]	553	5.6	155.8	155.8	156.8	1.0
X	14.272	110[2]	727	4.2	158.8	158.8	159.6	0.8
Y	14.738	85[2]	573	5.4	162.8	162.8	163.4	0.6
Z	14.942	180[2]	1,423	2.2	166.2	166.2	166.3	0.1

[1]Miles above mouth
[2]This width extends beyond county boundary

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS

FLOODWAY DATA

BEAVER BROOK NO. 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Beaver Brook No. 1 (continued)								
AA	15.127[1]	250[4]	1,941	1.6	166.5	166.5	166.7	0.2
AB	15.279[1]	275[4]	1,961	1.6	166.5	166.5	166.9	0.4
AC	15.646[1]	210[4]	1,266	2.4	167.1	167.1	168.1	1.0
AD	15.990[1]	50[4]	463	6.3	171.9	171.9	171.9	0.0
AE	16.417[1]	165[4]	1,105	2.6	174.7	174.7	175.1	0.4
AF	17.057[1]	160[4]	699	4.0	176.0	176.0	177.0	1.0
Beaver Brook No. 2								
A	2,429[2]	165	1,270	2.2	217.8	216.2[5]	217.2	1.0
B	4,377[2]	170	1,639	1.7	218.6	218.6	219.4	0.8
C	10,412[2]	220	1,172	2.4	228.8	228.8	229.8	1.0
D	13,823[2]	200	2,998	0.9	231.9	231.9	232.6	0.7
E	16,115[2]	35	292	8.9	234.3	234.3	235.0	0.7
F	20,999[2]	215	4,510	0.6	247.6	247.6	248.4	0.8
G	26,453[2]	60	204	9.1	282.7	282.7	283.1	0.4
H	28,512[2]	60	292	6.3	310.5	310.5	311.4	0.9
I	29,410[2]	40	268	6.9	329.6	329.6	329.8	0.2
Bettys Brook								
A	475[3]	270	790	0.5	245.7	243.6[6]	244.5	0.9
B	1,478[3]	65	92	4.5	245.7	244.6[6]	245.2	0.6
C	1,711[3]	30	145	2.9	248.5	248.5	248.5	0.0
D	2,592[3]	120	444	1.0	248.6	248.6	249.1	0.5
E	4,873[3]	155	168	2.5	262.9	262.9	263.4	0.5

[1]Feet above mouth
[2]Feet above confluence with Souhegan River
[3]Feet above confluence with Joe English Brook
[4]This width extends beyond county boundary
[5]Elevation computed without consideration of backwater effects from Souhegan River
[6]Elevation computed without consideration of backwater effects from Joe English Brook

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

BEAVER BROOK NO. 1 – BEAVER BROOK NO. 2 - BETTYS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Black Pond Brook								
A	0.245[1]	30	224	4.8	939.7	939.7	939.7	0.0
B	1.325[1]	260	952	1.1	946.3	946.3	947.3	1.0
C	1.679[1]	30	101	10.5	950.3	950.3	950.5	0.2
D	2.170[1]	40	122	8.7	975.9	975.9	976.1	0.2
Bog Brook								
A	766[2]	70	169	8.8	293.5	293.0[3]	293.0	0.0
B	2,191[2]	70	413	3.6	309.2	309.2	309.2	0.0
C	3,437[2]	40	139	10.6	314.5	314.5	314.5	0.0
D	5,343[2]	45	146	10.1	344.2	344.2	344.4	0.2
E	5,729[2]	65	204	7.3	350.3	350.3	350.6	0.3
F	7,429[2]	55	332	4.5	367.9	367.9	368.2	0.3
G	7,989[2]	55	148	10.0	377.1	377.1	377.1	0.0

[1]Miles above mouth
[2]Feet above mouth
[3]Elevation computed without consideration of backwater effects from the Piscataquog River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

BLACK POND BROOK – BOG BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Bowman Brook								
A	185[1]	60	283	3.5	128.4	118.7[3]	119.4	0.7
B	882[1]	15	255	3.8	134.4	134.4	134.4	0.0
C	1,177[1]	100	1,044	0.9	134.7	134.7	135.0	0.3
D	1,711[1]	40	282	3.5	144.2	144.2	144.2	0.0
E	1,774[1]	40	261	3.7	144.2	144.2	144.3	0.1
F	2,429[1]	60	188	5.2	156.6	156.6	156.6	0.0
G	3,258[1]	30	118	7.1	159.5	159.5	160.1	0.6
H	4,277[1]	80	414	2.0	161.9	161.9	162.9	1.0
I	10,919[1]	35	102	7.0	193.0	193.0	193.0	0.0
J	14,383[1]	40	132	5.4	209.2	209.2	209.5	0.3
K	15,618[1]	30	214	3.3	228.9	228.9	228.9	0.0
L	17,060[1]	40	107	5.5	234.7	234.7	234.7	0.0
M	17,582[1]	20	305	1.9	247.6	247.6	247.6	0.0
N	17,714[1]	100	934	0.6	248.0	248.0	248.1	0.1
O	20,745[1]	20	226	2.6	249.7	249.7	249.8	0.1
P	22,271[1]	40	226	2.6	249.7	249.7	250.1	0.4
Caesars Brook								
A	3,464[2]	225	398	3.2	252.9	252.9	253.0	0.1
B	7,593[2]	95	485	2.6	279.0	279.0	280.0	1.0

[1]Feet above confluence with the Merrimack River
[2]Feet above confluence with Beaver Brook No. 2
[3]Elevation computed without consideration of backwater effects from the Merrimack River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

BOWMAN BROOK – CAESARS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Chase Brook								
A	283	42	147	5.0	115.8	100.2[2]	100.2	0.0
B	1,595	84	600	1.2	136.7	136.7	136.7	0.0
C	2,453	20	70	10.6	143.2	143.2	143.2	0.0
D	4,128	30	77	9.1	153.8	153.8	153.8	0.0
E	5,256	94	407	1.7	157.7	157.7	158.3	0.6
F	6,490	73	331	2.1	158.9	158.9	159.8	0.9
G	7,472	26	181	3.5	162.3	162.3	162.6	0.3
H	8,730	45	267	2.4	162.7	162.7	163.6	0.9
I	11,370	155	501	1.3	164.7	164.7	165.7	1.0
J	12,448	75	223	2.9	167.5	167.5	167.7	0.2
K	13,700	93	552	0.7	170.3	170.3	171.3	1.0
L	16,018	319	1,026	0.4	170.4	170.4	171.4	1.0
M	16,910	390	1,265	0.3	170.5	170.5	171.5	1.0
N	17,845	22	102	3.9	170.6	170.6	171.5	0.9
O	18,075	60	316	1.3	173.8	173.8	173.8	0.0

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

CHASE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Contoocook River								
A	130.84	295	4,641	4.5	555.6	555.6	556.2	0.6
B	131.90	1,000	10,303	2.0	556.8	556.8	557.6	0.8
C	132.80	1,668	18,348	1.2	557.2	557.2	558.1	0.9
D	133.14	315	3828	5.5	557.3	557.3	558.2	0.9
E	133.95	125	1602	13.0	589.3	589.3	589.7	0.4
F	134.26	580	5733	3.6	593.5	593.5	593.5	0.0
G	135.64	620	6,698	2.3	594.5	594.5	595.4	0.9
H	136.10	1,135	11,061	1.4	595.1	595.1	596.0	0.9
I	136.41	930	9,755	1.5	595.3	595.3	596.3	1.0
J	137.55	1,200	7,675	2.0	596.2	596.2	597.1	0.9
K	138.51	1,250	7,008	2.2	597.1	597.1	597.9	0.8
L	139.52	1,500	10,393	1.5	598.4	598.4	599.1	0.7
M	140.12	910	4,858	3.1	599.4	599.4	600.1	0.7
N	140.75	1,310	5,462	2.8	600.9	600.9	601.6	0.7
O	141.07	340	3,115	4.9	601.6	601.6	602.4	0.8
P	141.22	420	5,287	2.9	602.8	602.8	603.7	0.9
Q	141.49	283	3,275	4.5	603.0	603.0	603.9	0.9
R	141.60	600	5,129	2.9	603.7	603.7	604.7	1.0
S	142.05	1,400	13,134	1.1	604.2	604.2	605.2	1.0
T	142.78	1,850	11,390	1.3	604.4	604.4	605.4	1.0
U	143.46	1,700	15,036	1.0	604.7	604.7	605.6	0.9
V	144.00	1,200	10,010	1.5	604.9	604.9	605.8	0.9
W	144.60	600	4,566	3.2	605.2	605.2	606.1	0.9
X	144.66	400	5,362	2.7	607.0	607.0	607.6	0.6
Y	145.12	1,360	13,626	1.1	607.3	607.3	608.0	0.7
Z	145.440	1,329	14,680	0.9	607.4	607.4	608.4	1.0

[1]Miles above Newburyport Light, Massachusetts

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

CONTOOCOOK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Contoocook River (continued)								
AA	146.124	1,512	14,687	0.9	607.6	607.6	608.6	1.0
AB	146.995	555	6,293	2.2	608.4	608.4	609.4	1.0
AC	147.048	403	3,842	3.5	609.1	609.1	610.1	1.0
AD	147.139	299	3,230	4.2	609.1	609.1	610.1	1.0
AE	147.239	170	2,633	5.1	609.5	609.5	610.5	1.0
AF	147.300	255	3,031	4.4	610.0	610.0	611.0	1.0
AG	147.415	125	1,043	12.9	621.0	621.0	622.0	1.0
AH	147.448	127	1,027	13.1	626.2	626.2	627.2	1.0
AI	147.603	124	1,512	8.9	638.1	638.1	639.1	1.0
AJ	147.724	93	1,180	11.4	642.4	642.4	643.4	1.0
AK	147.834	213	2,387	5.6	658.1	658.1	659.1	1.0
AL	147.889	141	1,328	10.1	658.4	658.4	659.4	1.0
AM	148.152	315	4,392	3.0	671.8	671.8	672.8	1.0
AN	148.656	227	2,163	5.8	673.7	673.7	674.7	1.0
AO	148.847	808	10,987	1.2	681.6	681.6	682.6	1.0
AP	149.400	605	9,197	1.4	681.7	681.7	682.7	1.0
AQ	149.864	318	4,202	3.0	681.8	681.8	682.8	1.0
AR	149.891	367	4,807	2.6	683.5	683.5	684.5	1.0
AS	151.032	1,763	22,430	0.6	683.7	683.7	684.7	1.0
AT	151.676	138	2,504	4.2	684.5	684.5	685.5	1.0
AU	152.205	775	6,611	1.6	685.5	685.5	686.5	1.0
AV	152.983	140	2,012	5.2	686.9	686.9	687.9	1.0
AW	153.348	943	6,112	1.7	688.0	688.0	689.0	1.0
AX	154.306	290	3,275	2.8	689.8	689.8	690.7	0.9
AY	156.119	324	2,527	3.6	691.0	691.0	691.9	0.9
AZ	156.841	508	3,126	2.9	692.4	692.4	693.3	0.9
BA	157.803	141	1,371	6.7	693.8	693.8	694.6	0.8

[1]Miles above Newburyport Light, Massachusetts

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

CONTOOCOOK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Contoocook River (continued)								
BB	158.447[1]	238	2,196	4.2	696.9	696.9	697.7	0.8
BC	159.095[1]	236	1,757	4.3	700.5	700.5	701.2	0.7
BD	159.545[1]	526	2874	2.6	709.3	709.3	709.3	0.0
BE	160.124[1]	76	798	9.4	711.0	711.0	711.5	0.5
BF	160.555[1]	221	1,632	4.6	714.8	714.8	715.6	0.8
BG	160.904[1]	164	1,519	4.9	721.5	721.5	721.5	0.0
BH	161.188[1]	75	1,060	6.7	722.1	722.1	722.2	0.1
BI	161.491[1]	126	1,024	7.0	723.3	723.3	723.8	0.5
BJ	162.164[1]	396	1,917	3.7	738.6	738.6	738.6	0.0
BK	162.610[1]	573	3,514	1.6	769.3	769.3	769.5	0.2
BL	163.294[1]	1,842	11,678	0.5	777.6	777.6	778.3	0.7
BM	163.734[1]	144	631	9.0	778.0	778.0	778.5	0.5
BN	164.109[1]	138	667	8.6	787.4	787.4	787.4	0.0
BO	165.009[1]	55	375	11.5	822.5	822.5	822.7	0.2
Ferguson Brook								
A	18,045[2]	197	779	1.1	723.7	723.7	724.7	1.0
B	20,065[2]	320	1,070	0.8	724.7	724.7	725.7	1.0
C	22,085[2]	186	659	1.3	727.9	727.9	728.9	1.0
D	24,105[2]	174	386	1.8	732.0	732.0	733.0	1.0
E	24,755[2]	17	81	8.5	735.4	735.4	736.4	1.0
F	24,905[2]	249	1,536	0.5	739.4	739.4	740.4	1.0
G	25,165[2]	291	1,475	0.5	739.5	739.5	740.5	1.0
Gambol Brook								
A	1,088[3]	70	270	4.4	466.4	466.4	466.4	0.0
B	2,292[3]	40	120	10.0	478.5	478.5	478.8	0.3
C	3,934[3]	20	115	10.5	497.5	497.5	497.5	0.0
D	5,412[3]	55	125	9.7	524.3	524.3	524.4	0.1
E	8,865[3]	30	125	9.7	568.2	568.2	568.5	0.3

[1]Miles above Newburyport Light, Massachusetts
[2]Feet above confluence with Contoocook River
[3]Feet above mouth

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

CONTOOCOOK RIVER – FERGUSON BROOK - GAMBOL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Golden Brook								
A	0.200[1]	265	1,094	1.0	133.5	129.0[3]	130.0	1.0
B	0.600[1]	140	595	1.7	133.5	129.6[3]	130.6	1.0
C	0.800[1]	240	913	1.1	133.5	130.0[3]	131.0	1.0
D	1.019[1]	90	428	2.4	133.5	130.4[3]	131.3	0.9
E	1.458[1]	200	705	1.5	133.5	131.5[3]	132.5	1.0
F	1.655[1]	70	398	2.2	133.5	132.1[3]	132.9	0.8
G	1.856[1]	20	173	5.1	135.6	135.6	135.6	0.0
H	2.400[1]	180	1,149	0.8	135.9	135.9	136.7	0.8
I	3.150[1]	250	1,195	0.7	136.0	136.0	136.9	0.9
J	3.522[1]	240	931	0.8	136.3	136.3	137.2	0.9
K	3.680[1]	96	625	1.1	136.5	136.5	137.5	1.0
Gorham Brook								
A	0[2]	50	103	6.7	297.0	297.0[4]	294.0	1.0
B	0.026[2]	50	164	4.2	300.9	300.9	300.9	0.0
C	0.072[2]	30	74	9.3	302.5	302.5	302.5	0.0
D	0.153[2]	30	69	10.0	312.0	312.0	312.0	0.0
E	0.303[2]	30	68	10.1	326.5	326.5	326.5	0.0

[1]Miles above confluence with Beaver Brook No. 1
[2]Miles above mouth at Piscataquog River
[3]Elevation computed without consideration of backwater effects from Beaver Brook No. 1
[4]Elevation computed without consideration of backwater effects from Piscataquog River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

GOLDEN BROOK – GORHAM BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Great Brook No. 1								
A	880	200	947	1.6	607.0	598.5[2]	598.9	0.4
B	1,900	198	448	3.5	607.0	598.6[2]	599.3	0.7
C	3,020	34	172	9.0	608.6	608.6	608.8	0.2
D	3,160	50	127	12.2	613.6	613.6	613.7	0.1
E	3,600	32	282	5.5	642.9	642.9	643.3	0.4
F	3,750	19	186	8.3	643.3	643.3	643.6	0.3
G	3,790	144	213	7.3	652.3	652.3	652.3	0.0
H	3,960	18	109	14.2	654.4	654.4	654.4	0.0
I	4,310	15	104	14.9	661.8	661.8	662.1	0.3
J	4,425	14	124	12.5	671.5	671.5	671.5	0.0
K	4,590	75	174	8.9	677.8	677.8	677.8	0.0
L	4,810	75	153	10.2	689.1	689.1	689.1	0.0
M	5,030	82	186	8.3	700.4	700.4	701.1	0.7
N	5,390	200	1,386	1.1	701.4	701.4	702.4	1.0
O	5,495	169	1,106	1.4	702.6	702.6	702.8	0.2
P	5,860	22	119	13.0	702.6	702.6	702.8	0.2
Q	5,960	310	1,551	1.0	705.4	705.4	706.4	1.0
R	6,940	95	191	8.1	707.9	707.9	707.9	0.0
S	7,290	59	291	5.3	713.0	713.0	713.5	0.5

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT BROOK NO. 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Great Brook No. 2								
A	1,151	250[2]	3,586	0.4	257.3	257.3	257.3	0.0
B	1,320	65[2]	1,361	1.2	257.4	257.4	257.4	0.0
C	1,584	90[2]	912	1.1	257.7	257.7	257.7	0.0
D	4,013	120	1,164	1.6	260.5	260.5	261.5	1.0
E	6,468	150	1,106	1.5	262.5	262.5	263.4	0.9
F	7,946	30	728	4.2	266.5	266.5	266.8	0.3
G	8,342	35	437	2.2	266.7	266.7	267.1	0.4
H	10,344	60	1,570	1.9	267.4	267.4	268.3	0.9
I	12,033	35	501	2.3	268.8	268.8	269.5	0.7
J	16,368	95	1,172	1.3	273.4	273.4	274.4	1.0
K	17,941	50	492	4.0	275.5	275.5	276.1	0.6
L	18,960	40	2,023	3.5	277.9	277.9	278.0	0.1
M	20,777	40	905	2.0	278.4	278.4	278.9	0.5
N	23,243	45	448	4.0	281.4	281.4	281.8	0.4

[1]Feet above mouth
[2]No encroachment attempted at railroad pond, width is normal pond water-surface width

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT BROOK NO. 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Great Cohas Brook								
A	603	70	330	11.5	137.7	137.7	137.7	0.0
B	757	80	675	5.6	144.9	144.9	145.0	0.1
C	930	90	615	6.2	145.1	145.1	145.2	0.1
D	980	80	330	11.5	152.4	152.4	152.4	0.0
E	5,550	45	270	14.0	155.6	155.6	155.7	0.1
F	8,650	60	395	9.6	177.2	177.2	178.1	0.9
G	11,338	60	530	7.2	186.3	186.3	186.6	0.3
H	11,672	70	560	6.8	187.2	187.2	187.4	0.2
I	14,197	30	235	16.2	201.7	201.7	201.7	0.0
J	14,323	60	600	6.0	205.9	205.9	206.5	0.6
K	28,722	70	775	4.6	209.2	209.2	209.2	0.0
L	31,760	150	1,245	2.9	209.9	209.9	210.8	0.9
M	32,656	125	1,370	2.6	213.0	213.0	213.4	0.4
N	34,234	110	615	2.0	213.1	213.1	213.8	0.7
O	34,366	120	1,035	1.2	215.4	215.4	216.1	0.7
P	36,601	80	150	7.9	225.8	225.8	225.8	0.0

[1]Feet above mouth

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

GREAT COHAS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Gumpas Pond Brook								
A	2,043	40	117	3.7	123.6	122.3[3]	123.0	0.7
B	3,532	15	41	8.3	128.5	128.5	128.7	0.2
C	4,192	15	85	4.0	136.0	136.0	136.0	0.0
D	7,080	40	170	2.0	145.3	145.3	145.7	0.4
E	7,862	70	239	1.4	145.4	145.4	146.2	0.8
F	9,245	10	25	3.6	148.5	148.5	149.1	0.6
G	10,613	25	98	0.9	154.7	154.7	154.7	0.0
H	11,764	12	29	3.1	157.7	157.7	158.7	1.0
I	13,807	110	314	0.3	185.5	185.5	185.5	0.0
J	14,013	10	13	6.6	187.7	187.7	187.8	0.1
Gumpas Road Brook								
A	2,439	12	29	2.9	127.1	125.9[3]	126.7	0.8
B	4,330	10	27	3.1	130.8	130.8	131.7	0.9
C[2]	4,550	*	*	*	137.1	*	*	*
D[2]	6,716	*	*	*	137.2	*	*	*
E[2]	7,533	*	*	*	138.0	*	*	*
F[2]	7,637	*	*	*	142.3	*	*	*
G[2]	7,780	*	*	*	142.3	*	*	*
H[2]	7,845	*	*	*	143.8	*	*	*
I[2]	10,258	*	*	*	149.8	*	*	*
J[2]	11,174	*	*	*	164.3	*	*	*
K[2]	11,254	*	*	*	167.2	*	*	*

[1]Feet above mouth
[2]Floodway not computed
[3]Elevation computed without consideration of backwater effects from Beaver Brook No. 1
*Data not available

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

GUMPAS POND BROOK – GUMPAS ROAD BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hartshorn Brook								
A	972[1]	60	158	4.3	250.2	250.2	251.0	0.8
B	1,098[1]	55	310	2.2	253.7	253.7	254.0	0.3
C	2,302[1]	40	324	2.1	255.3	255.3	256.0	0.7
Hassells Brook								
A	560[2]	80	834	0.3	153.5	153.5	154.5	1.0
B	2,724[2]	80	548	0.4	153.5	153.5	154.5	1.0
C	3,691[2]	10	65	3.5	154.5	154.5	154.8	0.3
Holts Brook								
A	1,251[1]	25	52	5.3	221.7	217.6[3]	217.7	0.1
B	3,696[1]	30	162	1.7	221.7	219.8[3]	220.6	0.8

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

HARTSHORN BROOK – HASSELLS BROOK – HOLTS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Hosley Brook								
A	9,980[1]	14	37	7.8	1,168.5	1,168.5	1,169.5	1.0
B	10,090[1]	17	41	7.0	1,172.6	1,172.6	1,173.6	1.0
C	10,350[1]	14	39	7.4	1,176.8	1,176.8	1,177.8	1.0
D	10,930[1]	14	49	6.0	1,181.2	1,181.2	1,182.2	1.0
E	11,110[1]	20	52	5.6	1,189.0	1,189.0	1,190.0	1.0
F	11,268[1]	8	54	5.4	1,194.1	1,194.1	1,195.1	1.0
G	11,628[1]	126	450	0.6	1,194.5	1,194.5	1,195.5	1.0
H	12,098[1]	26	69	4.2	1,197.5	1,197.5	1,198.5	1.0
Island Pond Brook								
A	1,742[2]	30	49	3.3	133.4	129.5[3]	130.1	0.6
B	3,010[2]	12	36	4.4	133.7	133.7	134.4	0.7
C	4,557[2]	60	157	1.0	135.3	135.3	136.3	1.0
D	4,926[2]	20	56	2.8	135.6	135.6	136.5	0.9
E	5,090[2]	70	788	0.2	144.5	144.5	144.5	0.0
F	5,259[2]	20	188	0.8	144.5	144.5	144.5	0.0
G	5,306[2]	170	1,748	0.1	144.5	144.5	144.5	0.0
H	6,864[2]	50	425	0.1	144.5	144.5	144.6	0.1
I	9,884[2]	20	59	0.6	144.5	144.5	144.6	0.1

[1]Feet above Old Dublin Road
[2]Feet above confluence with Golden Brook
[3]Elevation computed without consideration of backwater effects from Beaver Brook No. 1

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

HOSLEY BROOK – ISLAND POND BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Joe English Brook								
A	1,558[1]	40	257	6.5	236.6	236.6	237.6	1.0
B	1,795[1]	50	433	3.9	238.8	238.8	238.9	0.1
C	3,168[1]	665	1,907	0.9	239.1	239.1	239.8	0.7
D	5,650[1]	80	799	2.1	245.6	245.6	245.6	0.0
E	6,885[1]	120	531	3.0	245.7	245.7	245.8	0.1
F	9,610[1]	75	566	2.2	246.0	246.0	246.6	0.6
G	12,709[1]	95	333	3.8	260.5	260.5	261.3	0.8
H	15,259[1]	235	671	1.9	281.8	281.8	282.5	0.7
I	20,909[1]	200	147	8.5	352.3	352.3	352.4	0.1
Limit Brook								
A	348[2]	35	250	3.9	108.8	105.3[4]	105.7	0.4
B	1,309[2]	35	201	4.9	108.8	105.8[4]	106.4	0.6
C	3,311[2]	45	253	3.9	113.0	113.0	113.5	0.5
Lyle Reed Brook								
A	190[3]	115	201	0.5	166.2	154.7[5]	155.6	0.9
B	760[3]	20	86	1.3	166.2	162.0[5]	162.3	0.3
C	1,030[3]	65	453	0.4	166.2	167.4[5]	168.4	1.0
D	1,293[3]	145	848	0.2	166.2	167.4[5]	168.4	1.0

[1]Feet above confluence with Baboosic Brook
[2]Feet above Town of Hudson Corporate Limits
[3]Feet above confluence with Nashua River
[4]Elevation determined without consideration of backwater effects from Merrimack River
[5]Elevation computed without consideration of backwater effects from Nashua River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

JOE ENGLISH BROOK – LIMIT BROOK - LYLE REED BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
McQuade Brook								
A	591	60	433	3.2	178.6	178.6	178.6	0.0
B	2,497	70	669	2.0	178.8	178.8	179.7	0.9
C	4,314	25	125	1.4	180.8	180.8	181.7	0.9
D	4,773	35	114	1.6	187.0	187.0	187.1	0.1
E	5,069	60	135	1.2	202.9	202.9	202.9	0.0
F	6,864	80	911	1.3	216.2	216.2	216.3	0.1
G	7,550	90	829	1.4	216.2	216.2	216.3	0.1
H	10,745	110	273	4.3	217.3	217.3	218.3	1.0
I	12,471	100	143	8.2	252.2	252.2	252.6	0.4
J	12,593	100	643	1.8	257.1	257.1	257.8	0.7
K	13,110	100	657	1.8	258.2	258.2	258.8	0.6
L	13,659	200	883	1.3	258.4	258.4	259.0	0.6
M	15,428	260	880	1.3	259.6	259.6	260.6	1.0
N	16,157	155	605	1.9	260.7	260.7	261.6	0.9
O	16,790	176	610	1.9	262.1	262.1	262.7	0.6
P	17,223	161	466	2.5	263.1	263.1	263.9	0.8
Q	17,625	150	427	2.4	264.6	264.6	265.4	0.8
R	18,369	150	427	2.4	267.0	267.0	267.7	0.7
S	18,480	150	1,926	0.5	275.9	275.9	276.4	0.5
T	24,420	150	1,213	0.7	275.9	275.9	276.7	0.8
U	25,201	35	105	7.7	280.0	280.0	280.0	0.0
V	25,249	28	105	7.7	285.9	285.9	285.9	0.0
W	25,355	40	424	1.9	291.1	291.1	291.9	0.8

[1]Feet above confluence with Baboosic Brook

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

McQUADE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Merrimack River								
A	4,205	423	14,384	7.3	110.1	110.1	110.6	0.5
B	9,487	474	16,536	6.4	111.0	111.0	111.5	0.5
C	21,232	529	16,587	6.2	112.5	112.5	113.0	0.5
D	25,174	658	20,017	5.1	113.5	113.5	114.1	0.6
E	27,264	616	18,712	4.8	113.7	113.7	114.3	0.6
F	35,784	460	15,553	5.8	114.2	114.2	114.8	0.6
G	40,844	465/232[2]	15,009	6.0	114.7	114.7	115.3	0.6
H	51,754	505/243[2]	15,116	5.9	116.4	116.4	117.1	0.7
I	61,964	662/308[2]	17,849	5.0	117.8	117.8	118.5	0.7
J	69,909	1,351/716[2]	28,195	3.1	119.9	119.9	120.5	0.6
K	75,727	600/278[2]	18,175	4.8	121.8	121.8	122.4	0.6
L	78,922	353/173[2]	11,332	7.6	122.2	122.2	122.9	0.7

[1]Feet above Massachusetts/New Hampshire State boundary
[2]Width/width within county boundary

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

MERRIMACK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Middle Branch Piscataquog River								
A	1,320	65	307	10.8	347.6	347.6	347.6	0.0
B	1,901	93	600	5.5	351.5	351.5	352.3	0.8
C	2,640	471	916	3.6	361.8	361.8	361.8	0.0
D	3,590	120	1,173	2.8	362.1	362.1	362.9	0.8
E	4,699	130	1,296	2.6	362.2	362.2	363.1	0.9
F	6,600	114	1,371	2.4	365.5	365.5	365.7	0.2
G	7,867	70	774	4.3	365.5	365.5	365.9	0.4
H	10,771	66	682	4.9	366.3	366.3	367.0	0.7
I	11,774	90	828	4.0	366.7	366.7	367.6	0.9
J	19,958	160	717	2.9	373.1	373.1	374.1	1.0
K	21,859	45	230	9.1	382.4	382.4	382.9	0.5
L	23,285	40	300	7.0	405.9	405.9	405.9	0.0
M	26,189	65	336	6.2	410.4	410.4	410.8	0.4
N	28,459	38	142	11.1	423.8	423.8	423.8	0.0
O	30,096	104	528	3.0	433.1	433.1	434.0	0.9
P	30,888	45	337	4.7	466.2	466.2	466.2	0.0
Q	32,578	44	238	6.6	483.8	483.8	484.2	0.4
R	33,739	50	212	7.4	489.0	489.0	489.7	0.7
S	35,693	60	272	5.8	499.6	499.6	500.2	0.6
T	37,963	26	139	8.6	516.6	516.6	517.6	1.0
U	39,072	34	125	9.6	532.6	532.6	532.9	0.3

[1]Feet above confluence with South Branch Piscataquog River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

MIDDLE BRANCH PISCATAQUOG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mill Brook								
A	0.185[1]	35	227	2.4	462.6	462.6	462.6	0.0
B	0.753[1]	20	55	9.9	594.3	594.3	594.3	0.0
C	0.936[1]	25	114	4.8	650.0	650.0	650.1	0.1
D	1.252[1]	30	151	3.6	651.3	651.3	652.1	0.8
E	1.811[1]	285	545	1.0	659.5	659.5	660.2	0.7
F	2.362[1]	30	89	6.1	667.2	667.2	667.9	0.7
G	2.508[1]	30	107	5.1	669.3	669.3	669.5	0.2
H	2.813[1]	20	69	7.9	680.3	680.3	680.6	0.3
I	2.904[1]	25	67	8.1	692.8	692.8	692.9	0.1
Moose Brook								
A	15,520[2]	29	147	9.3	823.1	823.1	824.1	1.0
B	15,630[2]	50	362	3.8	829.5	829.5	830.5	1.0
C	15,750[2]	70	406	3.4	829.8	829.8	830.8	1.0
D	16,100[2]	50	302	4.2	830.7	830.7	831.7	1.0
E	16,370[2]	76	462	2.7	831.2	831.2	832.2	1.0
F	16,570[2]	138	810	1.6	831.6	831.6	832.6	1.0
G	17,940[2]	199	661	1.9	833.2	833.2	834.2	1.0
H	18,750[2]	354	2,202	0.6	833.3	833.3	834.3	1.0
I	20,120[2]	344	2,141	0.6	833.9	833.9	834.9	1.0
J	21,840[2]	58	268	4.7	835.5	835.5	836.5	1.0

[1]Miles above confluence with Stony Brook
[2]Feet above confluence with Contoocook River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

MILL BROOK – MOOSE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Nashua River								
A	0	325	2,193	9.2	113.6	91.3[2]	92.3	1.0
B	845	93	1,048	19.3	113.6	99.3[2]	99.3	0.0
C	3,712	180	3,188	6.3	113.6	107.5[2]	108.2	0.7
D	5,338	160	3,024	6.7	113.6	109.3[2]	109.8	0.5
E	6,373	155	2,540	7.9	113.6	110.6[2]	111.0	0.4
F	6,806	300	5,620	3.6	126.7	126.7	126.7	0.0
G	7,661	314	4,692	4.3	127.2	127.2	127.2	0.0
H	9,018	542	4,270	4.7	127.5	127.5	127.5	0.0
I	10,893	880	8,797	2.3	128.2	128.2	128.2	0.0
J	14,055	269	4,507	4.5	128.7	128.7	128.7	0.0
K	17,086	216	4,128	4.9	129.0	129.0	129.7	0.7
L	19,161	1,498	12,487	1.6	129.8	129.8	130.4	0.6
M	20,692	375	4,472	4.5	130.1	130.1	130.6	0.5
N	21,775	254	4,226	4.8	130.3	130.3	131.0	0.7
O	24,520	365	4,242	4.8	131.8	131.8	132.3	0.5
P	24,922	380	4,351	4.6	132.2	132.2	132.7	0.5
Q	26,463	1,072	8,087	2.5	133.2	133.2	133.6	0.4
R	28,818	940	10,196	2.0	164.1	164.1	164.1	0.0
S	30,846	673	7,860	2.6	164.4	164.4	164.4	0.0
T	33,792	251	4,972	4.1	164.9	164.9	164.9	0.0
U	37,536	206	4,132	4.9	165.6	165.6	166.0	0.4
V	40,255	972	7,858	2.6	166.2	166.2	166.8	0.6
W	44,194	184	3,005	6.7	168.0	168.0	168.6	0.6
X	47,673	874	6,553	3.1	170.7	170.7	171.3	0.6
Y	50,683	156	2,120	15.4	173.3	173.3	174.3	1.0
Z	52,573	882	8,110	2.2	175.3	175.3	176.0	0.7

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

NASHUA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Naticook Brook								
A	370	24	92	3.2	116.5	97.9[2]	97.9	0.0
B	1,447	38	189	1.6	116.5	102.5[2]	102.6	0.1
C	3,965	48	316	0.8	116.5	108.6[2]	109.3	0.7
D	4,240	25	69	3.6	116.5	108.6[2]	109.6	1.0
E	5,358	28	211	1.2	137.7	137.7	137.7	0.0
F	7,670	18	36	5.0	154.7	154.7	155.4	0.7
G	10,527	425	4,720	0.04	171.9	171.9	171.9	0.0
H	12,932	36	2,760	0.6	173.9	173.9	173.9	0.0
I	14,274	19	19	1.9	184.5	184.5	184.5	0.0
J	16,420	12	9	4.9	189.4	189.4	189.4	0.0
K	17,919	14	19	2.3	204.5	204.5	204.6	0.1
Nesenkeag Brook								
A	2,940	36	152	4.9	116.9	115.7[2]	115.8	0.1
B	3,750	40	123	6.0	120.1	120.1	121.0	0.9
C	5,211	34	83	8.9	148.2	148.2	148.2	0.0
D	6,172	105	1,553	0.4	174.6	174.6	174.9	0.3
E	9,767	42	493	1.4	174.6	174.6	175.1	0.5
F	14,840	60	906	0.7	181.7	181.7	182.4	0.6

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

NATICOOK BROOK – NESENKEAG BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
New Meadow Brook								
A	1,658[1]	45	108	2.8	124.7	123.2[4]	124.1	0.9
B	3,025[1]	74	165	1.8	126.7	126.7	127.7	1.0
C	4,926[1]	45	172	1.8	128.5	128.5	129.4	0.9
D	6,299[1]	20	78	3.9	131.8	131.8	132.3	0.5
E	6,785[1]	30	92	3.3	132.4	132.4	133.2	0.8
F	8,860[1]	290	2,362	0.1	138.4	138.4	138.6	0.2
G	10,153[1]	20	135	1.5	138.4	138.4	138.6	0.2
Nissitissit River								
A	2,144[2]	40	330	8.2	213.9	213.9	214.4	0.5
B	2,260[2]	40	320	8.5	214.8	214.8	215.0	0.2
C	5,296[2]	360	2,140	1.3	217.8	217.8	218.6	0.8
North Branch								
A	0.00[3]	60	449	12.4	596.8	591.9[5]	592.9	1.0
B	0.197[3]	85	555	10.0	617.5	617.5	617.5	0.0
C	0.637[3]	60	411	13.6	651.2	651.2	651.2	0.0
D	1.184[3]	640	5,288	1.1	701.2	701.2	702.1	0.9
E	1.285[3]	70	489	11.4	708.5	708.5	708.5	0.0
F	1.505[3]	40	364	15.3	737.3	737.3	737.5	0.2

[1]Feet above confluence with Beaver Brook No. 1
[2]Feet above Town of Hollis corporate limits
[3]Miles above mouth
[4]Elevation computed without consideration of backwater effects from Beaver Brook No. 1
[5]Elevation computed without consideration of backwater effects from Beards Brook

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

NEW MEADOW BROOK - NISSITISSIT RIVER – NORTH BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
North Branch Contoocook River								
A	0	113	510	11.0	849.5	849.5	850.5	1.0
B	900	500	9,767	0.6	851.7	851.7	852.5	0.8
C	1,160	423	4,818	1.2	853.1	853.1	853.6	0.5
D	1,630	321	2,273	2.5	853.1	853.1	853.6	0.5
E	2,470	318	870	6.4	853.1	853.1	853.6	0.5
F	4,135	47	414	13.5	880.8	880.8	880.9	0.1
G	4,790	67	476	11.8	887.3	887.3	888.3	1.0
H	7,080	347	1,989	2.8	893.7	893.7	894.7	1.0
I	8,465	85	363	15.4	918.9	918.9	918.9	0.0
J	9,465	107	379	14.8	937.0	937.0	937.0	0.0
K	11,200	11	376	14.9	962.8	962.8	962.8	0.0
L	11,625	210	762	7.4	980.3	980.3	980.4	0.1
M	12,470	87	437	12.8	1,005.5	1,005.5	1,006.0	0.5
N	14,230	800	4,548	1.2	1,008.8	1,008.8	1,009.8	1.0
O	16,040	865	3,549	1.6	1,009.2	1,009.2	1,010.2	1.0
P	18,880	448	2,629	2.1	1,010.8	1,010.8	1,011.8	1.0
Q	21,720	87	448	12.5	1,014.8	1,014.8	1,014.8	0.0
R	21,985	59	436	12.2	1,021.0	1,021.0	1,021.9	0.9
S	22,575	140	660	8.0	1,054.9	1,054.9	1,055.9	1.0
T	23,720	109	909	5.8	1,061.5	1,061.5	1,061.7	0.2
U	24,660	120	703	7.5	1,062.7	1,062.7	1,063.0	0.3
V	27,080	215	657	8.1	1,065.7	1,065.7	1,066.4	0.7
W	29,170	188	1,045	5.1	1,077.8	1,077.8	1,078.5	0.7
X	30,370	67	534	9.9	1,080.2	1,080.2	1,080.2	0.0
Y	31,155	205	503	10.5	1,089.7	1,089.7	1,089.7	0.0
Z	32,135	190	548	9.7	1,103.3	1,103.3	1,103.3	0.0

[1]Feet above Steels Pond Dam

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

NORTH BRANCH CONTOOCOOK RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Nubanusit Brook								
A	525	47	98	8.2	721.7	718.1[2]	718.1	0.0
B	1,323	53	104	7.7	728.0	728.0	728.0	0.0
C	1,591	140	638	1.3	748.2	748.2	748.2	0.0
D	2,066	157	718	1.1	775.2	775.2	775.2	0.0
E	2,449	41	93	8.6	778.3	778.3	778.3	0.0
F	3,149	93	320	2.5	780.3	780.3	780.4	0.1
G	5,099	163	484	1.7	780.9	780.9	781.2	0.3
H	8,629	62	257	3.1	782.2	782.2	782.6	0.4
I	10,304	66	116	6.9	789.3	789.3	789.3	0.0
J	13,224	52	159	5.0	800.6	800.6	800.6	0.0
K	15,566	56	170	4.7	807.4	807.4	807.4	0.0
L	16,691	114	836	1.0	850.9	850.9	850.9	0.0
M	17,626	54	111	7.2	862.5	862.5	862.5	0.0
N	18,541	73	113	7.1	886.4	886.4	886.4	0.0

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

NUBANUSIT BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Otter Brook								
A	0.161[1]	56	184	7.1	690.2	683.8[4]	684.3	0.5
B	0.738[1]	38	181	7.2	691.3	691.3	691.9	0.6
C	1.292[1]	114	425	3.1	708.9	708.9	708.9	0.0
D	1.661[1]	30	183	8.6	719.6	719.6	720.6	1.0
E	1.803[1]	170	287	4.5	727.7	727.7	728.6	0.9
F	1.961[1]	60	407	3.2	735.0	735.0	735.3	0.3
G	2.655[1]	34	443	6.2	770.4	770.4	770.5	0.1
H	3.043[1]	163	384	3.4	772.8	772.8	773.0	0.2
I	3.851[1]	50	194	6.7	779.4	779.4	780.2	0.8
J	4.120[1]	80	925	1.4	800.5	800.5	801.2	0.7
K	4.629[1]	100	578	2.3	800.6	800.6	801.3	0.7
L	4.675[1]	180	709	1.8	800.6	800.6	801.6	1.0
M	5.018[1]	170	696	1.9	800.6	800.6	801.5	0.9
N	5.500[1]	130	257	4.2	800.6	800.6	801.5	0.9
O	6.029[1]	190	437	1.9	802.8	802.8	803.8	1.0
P	6.510[1]	60	138	4.4	809.1	809.1	810.0	0.9
Otter Lake Brook								
A	0.155[2]	30	55	2.7	799.1	798.1[5]	798.9	0.8
B	0.894[2]	10	60	2.4	801.0	801.0	801.8	0.8
C	1.423[2]	15	140	1.0	806.7	806.7	806.8	0.1
D	1.629[2]	10	50	2.9	806.7	806.7	807.5	0.8
Ox Brook								
A	0.065[3]	50	166	3.2	267.3	267.2[6]	267.8	0.6
B	0.150[3]	60	204	2.6	267.3	267.3[6]	268.2	0.9

[1]Miles above confluence with Contoocook River
[2]Miles above mouth
[3]Miles above confluence with Great Brook No. 2
[4]Elevation computed without consideration of backwater effects of Contoocook River
[5]Elevation computed without consideration of backwater effects from Otter Brook
[6]Elevation computed without consideration of backwater effects from Great Brook No. 2

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

OTTER BROOK – OTTER LAKE BROOK – OX BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Parkhurst Brook								
A	0.180[1]	55	129	3.5	245.7	243.4[4]	243.6	0.3
B	0.700[1]	35	114	4.0	253.0	253.0	253.8	0.8
Peacock Brook								
A	3,332[2]	70	224	2.2	202.6	202.6	203.5	0.9
B	5,364[2]	95	252	2.0	207.4	207.4	208.2	0.8
C	6,653[2]	35	118	4.2	211.5	211.5	212.3	0.8
Pennichuck Brook								
A	153[3]	40	144	10.8	114.7	93.4[5]	93.4	0.0
B	2,418[3]	42	150	10.3	114.7	100.4[5]	100.7	0.3
C	3,543[3]	60	423	3.4	114.7	114.3[5]	114.3	0.0
D	4,229[3]	66	385	3.7	115.6	115.6	115.6	0.0
E	7,630[3]	320	5,909	0.2	170.9	170.9	170.9	0.0
F	9,963[3]	710	9,590	0.1	171.0	171.0	171.0	0.0
G	10,903[3]	150	1,864	0.6	171.0	171.0	171.0	0.0
H	12,181[3]	168	1,700	0.7	171.1	171.1	171.1	0.0
I	16,394[3]	980	14,854	0.1	181.3	181.3	181.3	0.0
J	17,640[3]	124	1,361	0.7	181.3	181.3	181.3	0.0
K	20,191[3]	274	1,900	0.5	181.4	181.4	181.5	0.1
L	22,794[3]	232	1,450	0.7	185.8	185.8	185.8	0.0
M	27,921[3]	90	395	0.9	186.0	186.0	186.0	0.0
N	34,426[3]	30	145	2.5	187.8	187.8	188.0	0.2

[1]Miles above confluence with Joe English Brook
[2]Feet above confluence with Witches Brook
[3]Feet above confluence with Merrimack River
[4]Elevation computed without consideration of backwater effects of Joe English Brook
[5]Elevation computed without consideration of backwater effects from the Merrimack River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

PARKHURST BROOK – PEACOCK BROOK - PENNICHUCK BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Piscataquog River								
A	73.800[1]	275	4,244	2.9	166.8	166.8	167.8	1.0
B	74.082[1]	165	3,145	4.0	167.1	167.1	168.1	1.0
C	74.481[1]	1,850	22,953	0.5	167.5	167.5	168.5	1.0
D	75.227[1]	1,140	8,169	1.5	169.7	169.7	170.7	1.0
E	75.773[1]	565	2,644	4.7	171.5	171.5	172.5	1.0
F	76.530[1]	410	3,150	4.0	180.2	180.2	181.0	0.8
G	77.247[1]	180	1,901	6.6	185.8	185.8	186.7	0.9
H	77.677[1]	120	944	13.2	197.1	197.1	197.1	0.0
I	78.239[1]	620	15,041	0.7	275.1	275.1	275.1	0.0
J	79.479[1]	130	1,095	10.0	275.5	275.5	275.5	0.0
K	79.685[1]	205	1,597	6.9	279.8	279.8	280.3	0.5
L	79.813[1]	165	2,090	5.2	291.4	291.4	291.4	0.0
M	79.930[1]	165	2,458	4.5	293.1	293.1	293.1	0.0
N	80.251[1]	200	2,380	4.6	293.9	293.9	294.1	0.2
O	80.811[1]	700	3,992	2.2	295.0	295.0	295.7	0.7
P	81.212[1]	850	4,964	1.7	295.6	295.6	296.6	1.0
Q	81.570[1]	350	1,729	0.4	296.4	296.4	297.2	0.8
R	81.893[1]	90	488	1.5	296.5	296.5	297.3	0.8
S	81.974[1]	70	386	1.9	296.6	296.6	297.4	0.8
T	82.468[1]	70	286	2.6	297.7	297.7	298.2	0.5
U	440[2]	*	*	*	302.3	*	*	*
V	580[2]	*	*	*	302.8	*	*	*
W	620[2]	*	*	*	309.3	*	*	*
X	1,560[2]	*	*	*	310.0	*	*	*
Y	5,590[2]	*	*	*	312.9	*	*	*
Z	8,650[2]	*	*	*	314.5	*	*	*

[1]Miles above Newburyport Light
[2]Feet above Town of Weare corporate limit
*Data not available

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

PISCATAQUOG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Piscataquog River (continued)								
AA	10,500	*	*	*	315.9	*	*	*
AB	10,624	*	*	*	316.1	*	*	*
AC	12,800	*	*	*	317.1	*	*	*
AD	13,012	*	*	*	317.2	*	*	*
AE	16,850	*	*	*	319.3	*	*	*
AF	18,840	*	*	*	319.9	*	*	*
AG	21,620	*	*	*	321.2	*	*	*
AH	23,610	*	*	*	322.2	*	*	*
AI	25,200	*	*	*	325.1	*	*	*
AJ	25,417	*	*	*	326.2	*	*	*
AK	26,670	*	*	*	327.4	*	*	*
AL	27,980	*	*	*	328.9	*	*	*
AM	46,580	*	*	*	415.1	*	*	*
AN	48,800	*	*	*	432.3	*	*	*
AO	49,390	*	*	*	437.2	*	*	*
AP	51,659	*	*	*	439.7	*	*	*
AQ	51,801	*	*	*	440.5	*	*	*
AR	52,930	*	*	*	448.4	*	*	*
AS	54,860	*	*	*	460.5	*	*	*
AT	55,940	*	*	*	469.4	*	*	*
AU	56,199	*	*	*	476.3	*	*	*
AV	57,320	*	*	*	479.3	*	*	*
AW	58,930	*	*	*	482.5	*	*	*
AX	60,490	*	*	*	491.1	*	*	*
AY	60,642	*	*	*	493.2	*	*	*
AZ	61,100	*	*	*	502.1	*	*	*

[1]Feet above Town of Weare corporate limit
*Data not available

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Piscataquog River (continued)								
BA	61,200[1]	*	*	*	510.4	*	*	*
BB	61,300[1]	*	*	*	512.8	*	*	*
BC	63,764[1]	*	*	*	532.1	*	*	*
BD	63,894[1]	*	*	*	535.3	*	*	*
BE	65,100[1]	*	*	*	546.1	*	*	*
BF	66,170[1]	*	*	*	558.3	*	*	*
BG	66,328[1]	*	*	*	560.8	*	*	*
BH	68,177[1]	*	*	*	576.4	*	*	*
BI	68,328[1]	*	*	*	579.7	*	*	*
BJ	69,240[1]	*	*	*	583.6	*	*	*
BK	70,170[1]	*	*	*	593.3	*	*	*
BL	70,342[1]	*	*	*	595.6	*	*	*
BM	71,910[1]	*	*	*	613.0	*	*	*
BN	72,768[1]	*	*	*	621.5	*	*	*
BO	72,942[1]	*	*	*	622.5	*	*	*
BP	0.036[2]	50	344	3.1	657.4	657.4	658.4	1.0
BQ	0.658[2]	40	262	4.0	668.6	668.6	668.6	0.0
BR	1.004[2]	30	132	6.9	670.7	670.7	670.7	0.0
BS	1.647[2]	20	80	11.4	722.1	722.1	722.1	0.0
BT	1.968[2]	210	651	1.3	727.0	727.0	728.0	1.0
BU	2.167[2]	40	107	7.7	739.9	739.9	739.9	0.0
BV	2.572[2]	50	156	5.3	786.3	786.3	786.6	0.3
BW	3.210[2]	20	53	9.4	826.5	826.5	826.5	0.0
BX	3.353[2]	80	770	0.6	842.5	842.5	842.5	0.0
BY	3.698[2]	50	204	2.5	843.7	843.7	844.6	0.9
BZ	3.819[2]	30	61	8.2	846.3	846.3	846.3	0.0

[1]Feet above Town of Weare corporate limit
[2]Miles above Town of Deering corporate limits
*Data not available

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

PISCATAQUOG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Piscataquog River (continued)								
CA	4.258[1]	60	206	2.4	848.5	848.5	849.4	0.9
CB	4.549[1]	180	403	1.2	849.3	849.3	850.2	0.9
CC	4.640[1]	50	80	6.2	851.7	851.7	852.3	0.6
CD	4.796[1]	30	48	10.4	883.3	883.3	883.3	0.0
CE	5.101[1]	25	70	7.1	898.5	898.5	898.8	0.3
CF	5.444[1]	130	457	1.1	899.8	899.8	900.7	0.9
CG	5.510[1]	20	59	8.5	907.4	907.4	907.7	0.3
Pointer Club Brook								
A	0.060[2]	10	40	11.5	124.7	114.4[3]	114.7	0.3
B	0.460[2]	27	101	4.5	148.0	148.0	148.7	0.7
C	0.830[2]	40	130	2.5	154.7	154.7	154.8	0.1
D	1.480[2]	20	35	5.7	193.9	193.9	194.3	0.4
E	1.676[2]	35	38	5.3	202.5	202.5	202.5	0.0
F	1.853[2]	30	52	3.8	207.6	207.6	207.6	0.0
G	1.890[2]	45	294	0.5	212.8	212.8	213.1	0.3
H	2.131[2]	45	148	1.0	212.9	212.9	213.3	0.4
I	2.223[2]	4	15	7.0	213.0	213.0	214.0	1.0
J	2.249[2]	45	152	0.7	215.4	215.4	216.4	1.0
K	2.493[2]	40	103	1.0	216.1	216.1	217.0	0.9
L	2.642[2]	30	50	1.6	217.3	217.3	217.9	0.6

[1]Miles above Town of Deering corporate limit
[2]Miles above confluence with the Merrimack River
[3]Elevation computed without consideration of backwater effects from the Merrimack River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

PISCATAQUOG RIVER – POINTER CLUB BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Pointer Club Brook (continued)								
M	2.655[1]	30	107	0.7	220.0	220.0	220.3	0.3
N	2.771[1]	40	79	1.0	220.0	220.0	220.5	0.5
O	2.899[1]	40	72	1.1	220.3	220.3	221.3	1.0
P	2.936[1]	25	33	2.0	221.6	221.6	221.9	0.3
Q	2.952[1]	23	71	0.9	223.3	223.3	224.2	0.9
R	3.053[1]	20	56	0.7	223.7	223.7	224.4	0.7
S	3.072[1]	20	47	0.8	224.9	224.9	225.1	0.2
T	3.172[1]	20	41	0.8	225.2	225.2	225.3	0.1
U	3.187[1]	22	54	0.6	226.0	226.0	227.0	1.0
Pulpit Brook								
A	1,056[2]	50	110	8.2	232.7	232.7	233.7	1.0
B	3,258[2]	40	182	4.9	237.0	237.0	237.1	0.1
C	3,464[2]	20	231	3.9	243.4	243.4	243.4	0.0
D	4,752[2]	30	293	3.1	243.4	243.4	244.0	0.6
E	9,266[2]	45	372	2.1	247.6	247.6	248.4	0.8
F	12,091[2]	125	404	2.0	248.7	248.7	249.4	0.7
G	13,443[2]	90	238	2.3	250.1	250.1	250.9	0.8
H	14,995[2]	130	448	1.2	254.5	254.5	255.4	0.9
I	17,841[2]	20	70	8.0	275.5	275.5	275.5	0.0
Purgatory Brook								
A	4,050[3]	395	1,889	1.8	257.3	257.3	257.6	0.3
B	5,539[3]	140	791	4.3	259.6	259.6	260.2	0.6
C	6,663[3]	170	1,133	3.0	260.7	260.7	261.6	0.9
D	7,234[3]	80	694	4.9	262.3	262.3	263.0	0.7

[1]Miles above confluence with the Merrimack River
[2]Feet above confluence with Baboosic Brook
[3]Feet above confluence with Souhegan River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

POINTER CLUB BROOK – PULPIT BROOK – PURGATORY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Riddle Brook								
A	0.412	230	1,203	1.1	178.4	176.2[2]	177.1	0.9
B	0.655	200	826	1.5	178.4	178.5[2]	178.9	0.4
C	0.955	70	352	3.5	181.5	181.5	181.7	0.2
D	1.204	200	805	1.5	182.7	182.7	182.9	0.2
E	1.591	320	3,308	0.4	182.8	182.8	183.1	0.3
F	1.960	40	201	6.1	184.4	184.4	185.0	0.6
G	2.258	45	228	5.4	200.8	200.8	200.9	0.1
H	2.415	60	383	3.2	211.1	211.1	211.3	0.2
I	2.817	230	1,177	1.0	213.1	213.1	213.6	0.5
J	2.904	80	174	6.5	216.8	216.8	217.0	0.2
K	3.234	180	831	1.4	222.3	222.3	223.2	0.9
L	3.405	130	694	1.6	225.3	225.3	225.7	0.4
M	3.500	180	1,050	1.1	228.9	228.9	228.9	0.0
N	3.739	140	774	1.5	229.1	229.1	229.2	0.1
O	3.905	180	497	2.0	229.4	229.4	230.4	1.0
P	3.964	270	2,148	0.5	234.5	234.5	235.2	0.7
Q	4.210	220	219	4.5	235.2	235.2	235.3	0.1
R	4.272	60	304	3.2	247.5	247.5	247.5	0.0
S	4.295	30	255	3.8	249.8	249.8	249.9	0.1
T	4.359	20	281	3.5	263.7	263.7	263.7	0.0
U	4.498	140	838	1.2	263.9	263.9	264.9	1.0
V	4.733	60	139	7.0	265.5	265.5	265.6	0.1

[1]Miles above mouth
[2]Elevation computed without consideration of backwater effects from Baboosic Brook

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

RIDDLE BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Salmon Brook								
A	1,112[1]	40	754	1.8	112.1	110.8[3]	110.8	0.0
B	3,483[1]	102	504	2.7	112.1	110.7[3]	110.7	0.0
C	5,832[1]	20	104	13.0	114.9	114.9	115.1	0.2
D	8,132[1]	74	647	2.1	141.9	141.9	141.9	0.0
E	9,791[1]	115	704	1.8	144.3	144.3	144.4	0.1
F	14,221[1]	343	1,573	0.8	144.7	144.7	145.0	0.3
G	16,641[1]	58	360	3.1	145.9	145.9	146.6	0.7
H	22,328[1]	94	649	1.7	151.4	151.4	152.2	0.8
I	26,107[1]	98	582	1.9	152.2	152.2	153.0	0.8
J	26,632[1]	100	722	1.6	153.6	153.6	154.3	0.7
K	29,616[1]	109	757	1.5	154.2	154.2	155.0	0.8
L	31,236[1]	91	585	1.9	154.5	154.5	155.4	0.9
M	32,807[1]	91	645	1.7	155.9	155.9	156.8	0.9
N	33,145[1]	107	755	1.5	156.0	156.0	156.9	0.9
Sand Brook								
A	0.113[2]	20	139	3.0	555.0	552.2[4]	552.2	0.0
B	0.249[2]	20	97	4.3	559.1	559.1	559.1	0.0
C	0.605[2]	20	47	8.8	611.4	611.4	611.4	0.0
D	1.493[2]	20	204	6.7	625.3	625.3	625.3	0.0
E	1.748[2]	40	132	10.4	649.8	649.8	650.0	0.2
F	2.134[2]	36	224	6.1	673.8	673.8	673.9	0.1

[1]Feet above confluence with Merrimack River
[2]Miles above mouth
[3]Elevation computed without consideration of backwater effects from Merrimack River
[4]Elevation computed without consideration of backwater effects from Contoocook River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SALMON BROOK – SAND BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Second Brook								
A	0[1]	45	119	4.3	112.4	95.7[3]	96.7	1.0
B	165[1]	50	156	3.3	112.4	97.3[3]	97.5	0.2
C	284[1]	34	159	3.2	112.4	103.0[3]	103.0	0.0
D	1,121[1]	22	56	9.1	125.0	125.0	125.1	0.1
E	2,160[1]	29	83	6.2	137.7	137.7	137.8	0.1
F	2,284[1]	77	885	0.6	147.7	147.7	148.7	1.0
G	3,296[1]	49	296	1.7	147.7	147.7	148.7	1.0
H	3,735[1]	36	222	2.3	148.4	148.4	149.2	0.8
I	3,973[1]	88	482	1.1	148.6	148.6	149.4	0.8
J	4,094[1]	99	466	1.1	149.4	149.4	149.9	0.5
K	5,789[1]	49	187	2.7	150.0	150.0	150.7	0.7
L	7,019[1]	34	119	4.3	153.5	153.5	154.2	0.7
M	7,126[1]	50	635	0.8	166.9	166.9	167.5	0.6
N	9,701[1]	40	66	7.3	167.2	167.2	167.2	0.0
O	10,432[1]	171	282	1.7	171.4	171.4	171.4	0.0
P	12,982[1]	598	540	0.8	174.2	174.2	174.2	0.0
Q	14,034[1]	82	250	1.7	175.0	175.0	175.0	0.0
R	14,122[1]	232	1,075	0.4	176.8	176.8	177.6	0.8
Shedd Brook								
A	0.100[2]	50	250	9.0	632.5	629.1[4]	630.1	1.0
B	0.666[2]	30	177	12.7	655.2	655.2	655.8	0.6
C	1.296[2]	50	255	8.8	747.4	747.4	747.4	0.0
D	2.204[2]	70	405	5.5	821.9	821.9	822.7	0.8
E	2.685[2]	80	368	6.1	850.1	850.1	850.8	0.7

[1]Feet above confluence with Merrimack River
[2]Miles above mouth
[3]Elevation computed without consideration of backwater effects from Merrimack River
[4]Elevation computed without consideration of backwater effects from Beards Brook

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SECOND BROOK – SHEDD BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Sherburn Mill Brook								
A	0.040[1]	20	124	5.1	205.8	200.7[3]	201.5	0.8
B	0.245[1]	35	134	4.7	205.8	202.7[3]	203.3	0.6
C	0.610[1]	20	103	6.1	207.8	207.8	208.5	0.7
D	0.787[1]	40	85	4.5	209.7	209.7	210.3	0.6
E	0.842[1]	90	329	1.2	210.8	210.8	211.8	1.0
F	0.888[1]	150	1,193	0.3	217.1	217.1	217.2	0.1
G	1.173[1]	40	234	1.6	217.2	217.2	217.2	0.0
H	1.587[1]	50	127	3.0	223.5	223.5	224.2	0.7
I	2.034[1]	55	225	1.7	230.0	230.0	230.0	0.0
J	2.742[1]	45	487	0.8	239.5	239.5	240.5	1.0
K	2.825[1]	30	111	3.5	243.0	243.0	243.4	0.4
Simpson Mill Brook								
A	1,088[2]	20	42	2.6	136.0	134.8[4]	135.6	0.8
B	2,566[2]	15	71	1.5	137.8	137.8	138.6	0.8
C	2,619[2]	158	364	0.3	137.8	137.8	138.6	0.8

[1]Miles above confluence with Souhegan River
[2]Feet above confluence with Golden Brook
[3]Elevation computed without consideration of backwater effects from Souhegan River
[4]Elevation computed without consideration of backwater effects from Golden Brook

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SHERBURN MILL BROOK – SIMPSON MILL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Souhegan River								
A	0.085	100	1,111	14.0	118.3	103.9[2]	103.9	0.0
B	0.279	410	4,128	2.9	118.3	108.2[2]	108.7	0.5
C	0.512	205	2,070	5.8	129.8	129.8	129.8	0.0
D	0.643	370	2,826	4.3	129.9	129.9	130.6	0.7
E	1.097	120	1,213	10.0	141.4	141.4	142.2	0.8
F	1.564	177	2,044	5.9	173.9	173.9	174.0	0.1
G	2.417	118	1,975	6.1	176.9	176.9	177.5	0.6
H	3.081	155	1,971	6.1	181.0	181.0	181.3	0.3
I	3.622	467	5,470	2.2	183.8	183.8	184.1	0.3
J	4.582	948	5,944	2.0	185.0	185.0	185.8	0.8
K	5.239	815	6,959	1.7	187.0	187.0	187.7	0.7
L	5.718	265	3,766	3.2	187.8	187.8	188.5	0.7
M	5.981	138	845	14.1	192.5	192.5	192.5	0.0
N	6.719	124	1,402	8.3	207.5	207.5	207.9	0.4
O	7.096	148	2,087	5.6	210.8	210.8	211.0	0.2
P	7.587	276	3,798	3.0	213.0	213.0	214.0	1.0
Q	7.612	815	7,523	1.6	213.3	213.3	214.3	1.0
R	19.410	455	5,110	2.4	215.4	215.4	216.1	0.7
S	11.712	120	1,879	6.1	217.9	217.9	218.9	1.0
T	11.955	460	3,083	3.7	219.2	219.2	219.5	0.3
U	12.749	760	3,224	3.3	221.3	221.3	221.9	0.6
V	12.787	1,170	4,235	2.6	221.5	221.5	222.1	0.6
W	12.914	1,310	6,585	1.6	221.7	221.7	222.4	0.7
X	13.333	855	4,468	2.3	222.3	222.3	223.3	1.0
Y	13.727	185	1,872	5.6	223.6	223.6	224.5	0.9
Z	14.043	110	1,400	7.5	225.8	225.8	226.5	0.7
AA	14.289	85	1,167	9.0	228.6	228.6	229.1	0.5
AB	14.469	140	1,479	7.1	235.9	235.9	236.7	0.8

[1]Miles above confluence with Merrimack River
[2]Elevation computed without consideration of backwater effects from the Merrimack River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SOUHEGAN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Souhegan River (continued)								
AC	14.684[1]	130	1,479	7.1	241.3	241.3	242.0	0.7
AD	15.336[1]	105	1,333	7.5	244.9	244.9	245.5	0.6
AE	15.638[1]	440	2,857	3.5	246.3	246.3	247.1	0.8
AF	15.956[1]	870	3,226	3.1	246.9	246.9	247.9	1.0
AG	16.242[1]	1,420	5,000	2.0	247.6	247.6	248.4	0.8
AH	16.658[1]	825	3,846	2.6	249.6	249.6	250.3	0.7
AI	17.300[1]	990	2,250	4.0	251.7	251.7	252.6	0.9
AJ	18.340[1]	640	1,841	4.1	260.8	260.8	261.6	0.8
AK	18.823[1]	295	1,094	6.9	271.0	271.0	271.9	0.9
AL	19.129[1]	85	763	9.9	278.2	278.2	278.5	0.3
AM	19.480[1]	120	1,034	7.3	286.2	286.2	286.6	0.4
AN	19.827[1]	85	812	9.3	297.1	297.1	297.3	0.2
AO	19.920[1]	80	786	9.6	300.4	300.4	300.9	0.5
AP	20.255[1]	75	699	10.8	312.6	312.6	313.3	0.7
AQ	20.317[1]	75	645	11.7	315.3	315.3	316.0	0.7
AR	20.800[1]	100	1,450	5.2	332.8	332.8	333.6	0.8
AS	21.367[1]	110	1,250	5.2	356.0	356.0	357.0	1.0
AT	21.973[1]	65	450	14.4	393.1	393.1	393.2	0.1
AU	22.845[1]	90	615	10.6	428.7	428.7	428.8	0.1
AV	23.909[1]	200	940	6.9	458.3	458.3	459.1	0.8
AW	24.624[1]	95	505	10.0	488.1	488.1	488.3	0.2
AX	25.170[1]	105	445	11.3	511.8	511.8	512.3	0.5
AY	25[2]	45	264	7.1	709.2	709.2	710.2	1.0
AZ	990[2]	40	218	8.6	717.0	717.0	717.4	0.4
BA	1,800[2]	60	292	6.5	722.4	722.4	722.9	0.5
BB	2,655[2]	45	214	8.8	728.3	728.3	728.7	0.4
BC	3,985[2]	60	345	5.5	734.9	734.9	735.5	0.6
BD	5,500[2]	50	303	6.2	746.5	746.5	747.3	0.8

[1]Miles above confluence with Merrimack River
[2]Feet above limit of detailed study

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SOUHEGAN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Souhegan River (continued)								
BE	6,230	40	251	7.5	750.8	750.8	751.8	1.0
BF	7,040	25	138	13.7	766.8	766.8	766.9	0.1
BG	7,200	80	750	2.5	788.0	788.0	788.0	0.0
BH	7,700	75	473	4.0	808.0	808.0	808.0	0.0
BI	7,850	60	397	4.8	808.4	808.4	808.4	0.0
BJ	8,100	190	2,494	0.8	828.3	828.3	828.3	0.0
BK	9,100	180	1,914	1.0	828.3	828.3	828.3	0.0
BL	10,680	*	*	*	830.2	*	*	*
BM	13,260	*	*	*	837.8	*	*	*
BN	14,220	*	*	*	840.8	*	*	*
BO	15,490	*	*	*	849.6	*	*	*
BP	16,340	*	*	*	854.0	*	*	*
BQ	17,040	*	*	*	859.2	*	*	*
BR	20,790	*	*	*	930.9	*	*	*
BS	29,090	*	*	*	931.2	*	*	*
BT	31,170	*	*	*	931.7	*	*	*
BU	31,840	*	*	*	931.8	*	*	*
BV	31,950	*	*	*	932.7	*	*	*
BW	32,230	*	*	*	932.9	*	*	*
BX	33,410	*	*	*	933.4	*	*	*

[1]Feet above limit of detailed study
*Data not available

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SOUHEGAN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
South Branch Piscataquog River								
A	0.300	400	1,867	3.8	296.0	296.0	297.0	1.0
B	0.767	280	735	9.7	302.3	302.3	302.3	0.0
C	1.320	299	1,280	5.5	311.0	311.0	311.6	0.6
D	1.750	90	798	8.8	318.2	318.2	318.9	0.7
E	2.240	120	1,090	6.4	324.9	324.9	325.7	0.8
F	3.220	150	859	8.1	340.9	340.9	341.4	0.5
G	3.470	325	1,927	2.4	346.7	346.7	347.3	0.6
H	3.750	120	852	5.4	347.8	347.8	348.5	0.7
I	4.810	95	673	6.8	371.3	371.3	372.1	0.8
J	5.140	135	745	6.1	376.9	376.9	377.6	0.7
K	5.420	95	561	8.2	384.4	384.4	384.7	0.3
L	5.480	145	478	9.6	387.0	387.0	387.2	0.2
M	5.910	65	356	12.8	402.7	402.7	402.7	0.0
N	6.050	60	587	7.8	410.7	410.7	411.4	0.7
O	6.213	47	518	8.8	416.4	416.4	416.4	0.0
P	6.284	151	921	5.0	417.8	417.8	418.5	0.7
Q	6.640	56	330	13.8	422.8	422.8	423.0	0.2
R	6.872	96	641	7.1	431.9	431.9	432.8	0.9
S	6.897	150	955	4.8	432.8	432.8	433.8	1.0
T	7.097	84	361	11.9	439.2	439.2	439.4	0.2
U	7.117	321	1,516	2.8	443.3	443.3	444.3	1.0
V	7.251	108	743	5.8	444.2	444.2	445.0	0.8
W	7.478	57	319	13.5	450.0	450.0	450.1	0.1
X	7.898	118	938	4.6	462.6	462.6	463.5	0.9
Y	8.087	123	649	6.6	466.5	466.5	466.8	0.3
Z	8.328	67	590	7.3	472.7	472.7	473.2	0.5

[1]Miles above mouth

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SOUTH BRANCH PISCATAQUOG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
South Branch Piscataquog River (continued)								
AA	8.356	84	648	6.6	473.6	473.6	473.9	0.3
AB	8.630	109	817	4.7	476.8	476.8	477.4	0.6
AC	8.845	70	590	6.6	479.3	479.3	479.9	0.6
AD	8.886	117	873	4.4	479.9	479.9	480.9	1.0
AE	9.074	95	862	4.5	481.3	481.3	482.0	0.7
AF	9.234	119	1,202	3.2	482.0	482.0	482.6	0.6
AG	9.539	100	972	4.0	482.9	482.9	483.5	0.6
AH	9.572	100	970	4.0	483.0	483.0	483.6	0.6
AI	9.583	177	1,122	3.5	483.0	483.0	483.7	0.7
AJ	9.588	185	1,226	3.2	483.7	483.7	484.3	0.6
AK	9.598	70	708	5.5	483.7	483.7	484.1	0.4
AL	9.882	138	966	4.0	485.0	485.0	486.0	1.0
AM	10.241	125	968	4.0	487.2	487.2	488.2	1.0
AN	10.374	82	337	11.5	493.1	493.1	493.2	0.1
AO	10.378	131	416	8.5	503.0	503.0	503.7	0.7
AP	10.421	156	881	4.0	504.7	504.7	505.4	0.7
AQ	10.439	71	514	6.9	505.5	505.5	505.9	0.4
AR	10.486	68	380	9.3	506.7	506.7	507.1	0.4
AS	11.281	124	1,185	3.0	513.5	513.5	514.5	1.0
AT	11.470	161	1,235	2.9	514.2	514.2	515.1	0.9
AU	11.474	74	740	4.8	514.1	514.1	515.1	1.0
AV	11.478	203	1,528	2.3	514.9	514.9	515.7	0.8
AW	11.485	165	1,391	2.6	514.9	514.9	515.7	0.8
AX	11.660	143	372	9.5	517.5	517.5	517.5	0.0
AY	11.669	145	357	9.9	522.7	522.7	523.0	0.3
AZ	11.707	125	682	5.2	525.6	525.6	526.5	0.9
BA	11.940	106	694	5.1	529.5	529.5	530.1	0.6
BB	12.030	82	316	11.2	531.6	531.6	531.6	0.0

[1]Miles above mouth

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SOUTH BRANCH PISCATAQUOG RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Spit Brook								
A	1,711[1]	20	81	4.0	114.0	114.0	115.0	1.0
B	2,260[1]	20	70	4.6	145.5	145.5	146.2	0.7
C	2,862[1]	15	129	2.5	171.7	171.7	171.8	0.1
Stony Brook								
A	216[2]	70	1,188	4.8	359.7	359.7	360.7	1.0
B	2,096[2]	70	781	7.3	369.7	369.7	370.5	0.8
C	3,907[2]	40	339	16.8	394.0	394.0	394.0	0.0
D	6,304[2]	35	323	16.7	425.0	425.0	425.3	0.3
E	7,672[2]	50	472	8.3	442.7	442.7	443.2	0.5
F	8,844[2]	175	593	6.6	452.8	452.8	453.6	0.8
G	11,986[2]	115	472	8.3	478.2	478.2	478.2	0.0
H	12,529[2]	30	278	14.1	485.7	485.7	485.7	0.0
I	14,784[2]	150	515	7.6	507.4	507.4	507.9	0.5
J	15,692[2]	90	263	14.9	532.9	532.9	533.1	0.2
K	1,308[3]	70	96	5.6	825.3	825.3	825.3	0.0
L	2,442[3]	70	115	7.4	829.9	829.9	830.2	0.3
M	3,839[3]	35	396	2.0	839.3	839.3	840.0	0.7
N	5,391[3]	150	1,086	0.5	839.3	839.3	840.3	1.0

[1]Feet above confluence with Merrimack River
[2]Feet above confluence with Souhegan River
[3]Feet above Town of Lyndeborough/Greenfield corporate limits

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

SPIT BROOK – STONY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tioga River								
A	0.11[1]	50	77	5.1	144.1	144.1	144.7	0.6
B	0.40[1]	70	90	4.3	155.1	155.1	155.5	0.4
C	0.54[1]	50	49	8.0	157.8	157.8	157.8	0.0
D	0.69[1]	15	78	5.0	168.0	168.0	168.8	0.8
E	0.80[1]	15	63	6.2	175.7	175.7	175.7	0.0
F	0.93[1]	20	83	4.7	183.9	183.9	183.9	0.0
G	1.02[1]	30	217	1.8	197.2	197.2	197.2	0.0
H	1.42[1]	50	202	1.9	201.6	201.6	202.2	0.6
I	1.45[1]	30	241	1.6	202.7	202.7	202.8	0.1
J	1.54[1]	40	316	1.2	202.7	202.7	202.9	0.2
K	1.70[1]	25	178	1.5	210.2	210.2	210.2	0.0
L	2.16[1]	50	297	0.9	210.4	210.4	210.8	0.4
Tributary A								
A	50[2]	20	76	3.0	743.5	742.0[3]	742.9	0.9
B	420[2]	15	43	5.3	743.9	743.9	744.1	0.2
C	690[2]	10	25	9.0	748.5	748.5	748.5	0.0
D	835[2]	10	54	4.2	751.5	751.5	751.5	0.0
E	975[2]	15	70	3.2	751.6	751.6	752.4	0.8
F	1,240[2]	15	57	3.9	752.3	752.3	753.2	0.9

[1]Miles above confluence with Merrimack River
[2]Feet above confluence with the Souhegan River
[3]Elevation computed without consideration of backwater effects from Souhegan River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

TIOGA RIVER – TRIBUTARY A

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Tributary B No. 1								
A	238[1]	61	244	1.2	170.1	170.1	171.1	1.0
B	944[1]	63	243	1.2	171.2	171.2	171.6	0.4
C	2,257[1]	162	1,110	0.3	176.6	176.6	177.6	1.0
D	3,652[1]	361	2,009	0.2	176.7	176.7	177.7	1.0
E	6,080[1]	75	208	0.9	179.0	179.0	180.0	1.0
F	6,285[1]	31	32	5.8	183.6	183.6	183.7	0.1
G	7,605[1]	30	206	0.9	192.7	192.7	193.0	0.3
Tributary B No. 2								
A	0.091[2]	70	484	2.8	820.6	820.6	820.7	0.1
B	0.800[2]	330	872	1.3	837.2	837.2	838.2	1.0
C	1.019[2]	120	244	4.5	856.4	856.4	857.3	0.9
Tucker Brook								
A	2,292[3]	150	390	2.0	249.9	248.1[4]	249.0	0.9
B	4,187[3]	45	170	4.6	251.4	251.4	252.1	0.7
C	4,747[3]	130	411	1.9	253.1	253.1	253.9	0.8
D	5,317[3]	20	134	5.8	254.7	254.7	255.4	0.7
E	5,618[3]	20	95	8.2	258.1	258.1	258.1	0.0
F	6,790[3]	85	433	1.8	258.8	258.8	259.4	0.6
G	7,862[3]	90	390	2.0	259.3	259.3	260.2	0.9
H	10,307[3]	115	223	3.5	265.8	265.8	266.5	0.7
I	10,782[3]	205	371	2.1	270.4	270.4	271.3	0.9
J	11,294[3]	20	72	6.4	273.0	273.0	273.2	0.2
K	11,616[3]	20	34	13.7	279.0	279.0	279.1	0.1

[1]Feet above confluence with Chase Brook
[2]Miles above Town of Greenfield corporate limits
[3]Feet above confluence with Souhegan River
[4]Elevation computed without consideration of flooding controlled by Souhegan River

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

TRIBUTARY B NO. 1 – TRIBUTARY B NO. 2 - TUCKER BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Witches Brook								
A	3,807	100	340	2.0	187.9	187.3[2]	188.2	0.9
B	5,940	100	300	2.3	189.5	189.5	190.3	0.8
C	9,409	95	170	4.1	192.0	192.0	192.5	0.5
D	13,016	185	549	1.3	195.9	195.9	196.9	1.0
E	15,180	105	392	1.8	197.1	197.1	197.9	0.8
F	16,928	15	50	13.9	198.8	198.8	199.5	0.7
G	19,278	30	120	5.7	206.1	206.1	206.6	0.5
H	21,147	40	70	10.6	214.2	214.2	214.2	0.0

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

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH
(ALL JURISDICTIONS)

FLOODWAY DATA

WITCHES BROOK

No floodways were computed for the Souhegan River in the Town of New Ipswich; the Piscataquog River in the Town of Weare; and McQuade Brook Split Flow in the Town of Bedford. No floodway is shown through Deering Reservoir because a floodway is not applicable on large reservoirs having significant storage effects.

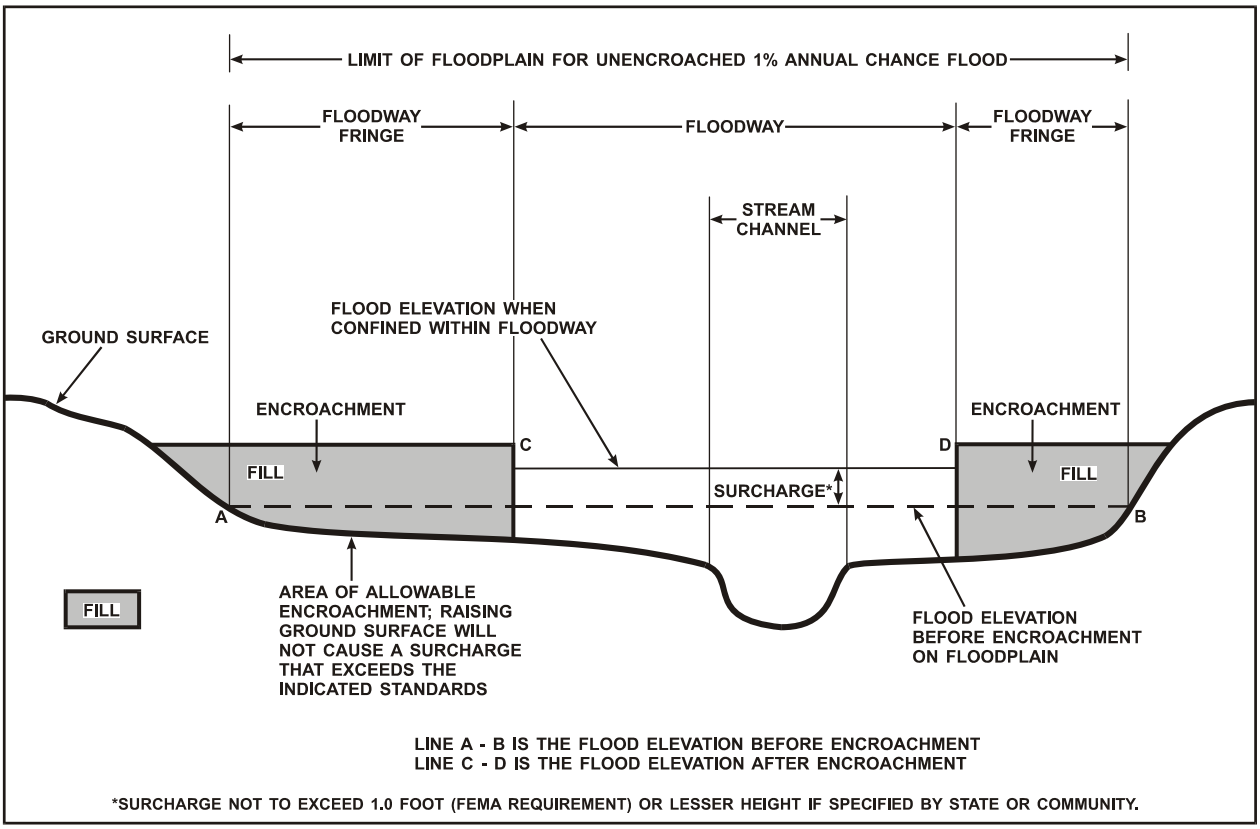
The floodway concept is generally not applicable for bodies of water with pronounced impoundment effects. Because areas along Great Cohas Brook at Pine Island Pond and through flat swampy ponding areas lying between State Routes 28 and 28A do provide storage, no floodway was computed along its flood boundaries.

For the Town of Goffstown, there is no pronounced 100-year impoundment effect on the Piscataquog River at Glen Lake; therefore, a floodway was delineated in this area. There is no floodway shown on Autumn Brook between Church Street and Depot Street because the channel is culverted underground. The flooding which does occur in this area is due to a situation where sheetflow with a depth of less than one foot overtops the culvert.

An analysis of the hydraulic character of representative cross sections of the Merrimack River through the City of Manchester revealed that the 100-year flood could, in general, be conveyed in about a 600-foot floodway equal to the bank-full width of the river channel. The analysis consists of determining the carrying capacity of the river at the bank-full width and at the floodway elevation by multiplying the cross sectional area with the velocity, as computed by Manning's formula. The Piscataquog River floodway in this area was also established at or in the general vicinity of the full bank edge of the river channel.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 8, "Floodway Data." To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

The area between the floodway and 100-year 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 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1, "Floodway Schematic."



FLOODWAY SCHEMATIC Figure 1

5.0 INSURANCE APPLICATIONS

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

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.

Zone AR

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

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas

protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

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

6.0 FLOOD INSURANCE RATE MAP

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

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains. On selected FIRM panels, floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

The current FIRM presents flooding information for the entire geographic area of Hillsborough County. Previously, separate Flood Hazard Boundary Maps (FHBMs) and/or FIRMs were prepared for each identified flood-prone incorporated community and the unincorporated areas of the county. This countywide FIRM also includes flood hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community, up to and including this countywide FIS, are presented in Table 9, "Community Map History."

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Hillsborough County has been compiled in this FIS. Therefore, this FIS supersedes all previously printed FIS reports, FIRMs, and or FBFMs for all of the incorporated jurisdictions within Hillsborough County.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Amherst, Town of	March 22, 1974	December 10, 1976	July 2, 1979	None
Antrim, Town of	April 12, 1974	August 27, 1976	April 1, 1981	None
Bedford, Town of	March 29, 1974	November 19, 1976	April 16, 1979	May 2, 1994
Bennington, Town of	March 8, 1974	September 24, 1976 April 22, 1977	April 18, 1983	None
Brookline, Town of	April 4, 1975	None	May 19, 1987	None
Deering, Town of	March 15, 1974	September 3, 1976	August 1, 1979	None
Francestown, Town of	June 14, 1974	June 25, 1976	May 17, 1977	None
Goffstown, Town of	September 20, 1974	June 11, 1976	June 15, 1979	None
Greenfield, Town of	April 4, 1975	None	May 1, 1980	None
Greenville, Town of	July 26, 1974	June 18, 1976	May 19, 1981	None
Hancock, Town of	May 31, 1974	November 5, 1976	April 4, 1983	None
Hillsborough, Town of	May 10, 1974	December 24, 1976	June 15, 1979	None
Hollis, Town of	March 1, 1974	February 4, 1977	April 16, 1979	None
Hudson, Town of	March 8, 1974	October 1, 1976	January 3, 1979	None

*No Special Flood Hazard Areas Identified

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH (ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Litchfield, Town of	March 15, 1974	June 4, 1976	July 16, 1979	None
Lyndeborough, Town of	February 21, 1975	November 29, 1977	September 25, 2009	None
Manchester, City of	November 1, 1974	January 14, 1977	February 18, 1981	None
Mason, Town of	February 21, 1975	None	December 1, 1992	None
Merrimack, Town of	April 12, 1974	None	July 16, 1979	None
Milford, Town of	March 22, 1974	June 18, 1976	May 1, 1980	None
Mont Vernon, Town of	January 17, 1975	None	September 25, 2009	None
Nashua, City of	August 23, 1974	March 12, 1976	June 15, 1979	July 3, 2002
New Boston, Town of	June 28, 1974	March 4, 1977	May 19, 1981	May 21, 2001
New Ipswich, Town of	December 13, 1974	November 19, 1976	May 15, 1991	None
Pelham, Town of	February 22, 1974	December 31, 1976	March 14, 1980	None
Peterborough, Town of	February 22, 1974	November 12, 1976	May 1, 1980	None
*Sharon, Town of	N/A	None	N/A	None
*Temple, Town of	N/A	None	N/A	None

*No Special Flood Hazard Areas Identified

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH (ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Weare, Town of	February 14, 1975	February 11, 1977	June 2, 1993	None
Wilton, Town of	April 5, 1974	November 19, 1976	April 15, 1980	None
*Windsor, Town of	N/A	None	N/A	None

*No Special Flood Hazard Areas Identified

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

HILLSBOROUGH COUNTY, NH (ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

Because it is based on more up-to-date analyses, this FIS supersedes the previously printed FISs for the Town of Amherst (FEMA, January, 1979), Town of Antrim (FEMA, October 1, 1980), Town of Bedford (FEMA, May 2, 1994), Town of Bennington (FEMA, October 18, 1982), Town of Deering (FEMA, February, 1979), Town of Goffstown (FEMA, December, 1978), Town of Greenfield (FEMA, November, 1979), Town of Greenville (FEMA, November 19, 1980), Town of Hancock (FEMA, October 4, 1982), Town of Hillsborough (FEMA, December, 1978), Town of Hollis (FEMA, October, 1978), Town of Hudson (FEMA, February, 1978), Town of Litchfield (FEMA, January, 1979), City of Manchester (FEMA, August 18, 1980), Town of Merrimack (FEMA, January, 1979), Town of Milford (FEMA, November, 1979), City of Nashua (FEMA, July 3, 2002), Town of New Boston (FEMA, May 21, 2001), Town of New Ipswich (FEMA, May 15, 1991), Town of Pelham (FEMA, September, 1979), Town of Peterborough (FEMA, November, 1979), Town of Weare (FEMA, June 2, 1993), and Town of Wilton (FEMA, October, 1979).

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, 99 High Street, 6th Floor, Boston, Massachusetts 02110.

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