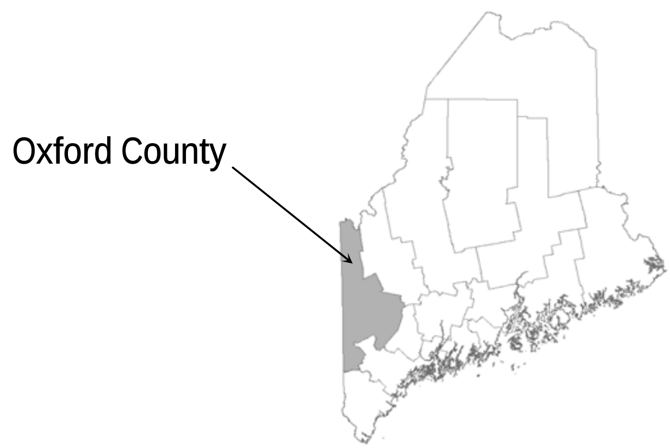
FLOOD INSURANCE STUDY

OXFORD COUNTY, MAINE

(ALL JURISDICTIONS)



VOLUME 1 OF 3

COMMUNITY NAME	COMMUNITY NUMBER
ADAMSTOWN T04 R02 WBKP, TOWNSHIP OF*	230688
ALBANY, TOWNSHIP OF*	230606
ANDOVER NORTH SURPLUS, TOWNSHIP OF*	230689
ANDOVER WEST SURPLUS, TOWNSHIP OF*	230690
ANDOVER, TOWN OF	230160
BATCHELDERS GRANT, TOWNSHIP OF*	230459
BETHEL, TOWN OF	230088
BOWMANTOWN T04 R06 WBKP, TOWNSHIP OF*	230691
BROWNFIELD, TOWN OF	230089
BUCKFIELD, TOWN OF	230090
BYRON, TOWN OF	230330
C SURPLUS, TOWNSHIP OF*	230692
CANTON, TOWN OF	230091
DENMARK, TOWN OF	230476
DIXFIELD, TOWN OF	230092
FRYEBURG, TOWN OF	230093
GILEAD, TOWN OF	230166
GRAFTON TA2, TOWNSHIP OF*	230607
GREENWOOD, TOWN OF	230332
HANOVER, TOWN OF	230333
HARTFORD, TOWN OF	230334
HEBRON, TOWN OF	230335
HIRAM, TOWN OF	230094
LINCOLN PLANTATION T5R2WBKP, TOWNSHIP OF*	230604
LOVELL, TOWN OF	230336
LOWER CUPSUPTIC T04 RO3 WBKP, TOWNSHIP OF*	230693
LYNCHTOWN T05 R04 WBKP, TOWNSHIP OF*	230694
MAGALLOWAY PLANTATION*	230605
MASON, TOWNSHIP OF*	230695
MEXICO, TOWN OF	230095
MILTON, TOWNSHIP OF	230460
NEWRY, TOWN OF	230337
NORWAY, TOWN OF	230096
OTISFIELD, TOWN OF	230203

COMMUNITY NAME	COMMUNITY NUMBER
OXBOW T04 R05 WBKP, TOWNSHIP OF*	230696
OXFORD, TOWN OF	230869
PARIS, TOWN OF	230097
PARKERTOWN T05 R03 WBKP, TOWNSHIP OF*	230697
PARMACHENEE T05 R05 WBKP, TOWNSHIP OF*	230698
PERU, TOWN OF	230098
PORTER, TOWN OF	230338
RICHARDSONTOWN T04 R01 WBKP, TOWNSHIP OF*	230699
RILEY TA1, TOWNSHIP OF*	230700
ROXBURY, TOWN OF	230181
RUMFORD, TOWN OF	230099
STONEHAM, TOWN OF	230340
STOW, TOWN OF	230186
SUMNER, TOWN OF	230187
SWEDEN, TOWN OF	230341
TOWNSHIP C, TOWNSHIP OF*	230701
UPPER CUPSUPTIC T04 R04 WBKP TOWNSHIP OF*	230702
UPTON, TOWN OF	230342
WATERFORD, TOWN OF	230343
WEST PARIS, TOWN OF	230100
WOODSTOCK, TOWN OF	230344

*NO SPECIAL FLOOD HAZARD AREAS IDENTIFIED

July 7, 2009

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
23017CV001A

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

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

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

Initial Countywide FIS Effective Date: July 7, 2009

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FLOOD INSURANCE STUDY
OXFORD COUNTY, MAINE [ALL JURISDICTIONS]

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Oxford County, including the Towns of Andover, Bethel, Brownfield, Buckfield, Byron, Canton, Denmark, Dixfield, Fryeburg, Greenwood, Hanover, Hartford, Hebron, Hiram, Lovell, Mexico, Newry, Norway, Otisfield, Oxford, Paris, Peru, Porter, Roxbury, Rumford, Stoneham, Stow, Sumner, Sweden, Upton, Waterford, West Paris, and Woodstock, the Townships of Adamstown, Albany, Andover North Surplus, Andover South Surplus, Batchelders Grant, Bowmantown, C Surplus, Grafton, Lower Cupsuptic, Lynchtown, Mason, Oxbow, Parkertown, Parmachenee, Richardsontown, Riley, Township C, and Upper Cupsuptic, and the Minor Civil Divisions (MCDs) including the Township of Milton, Lincoln Plantation, Magalloway Plantation, and other unorganized Townships of Oxford County. These MCDs are in the jurisdiction of the Maine Land Use Regulation Commission (LURC or the Commission) and are subject to the Commission's land use regulations, including LURC's participation in the National Flood Insurance Program (NFIP). The aforementioned communities will be referred to collectively herein as Oxford County. This study aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The study has developed flood-risk data for various areas of the county that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Townships of Adamstown, Albany, Andover North Surplus, Andover West Surplus, Batchelders Grant, Bowmantown, C Surplus, Grafton, Lower Cupsuptic, Lynchtown, Mason, Oxbow, Parkertown, Parmachenee, Richardsontown, Riley, Township C, and Upper Cupsuptic, as well as Lincoln and Magalloway Plantations, were not previously mapped and it is for this reason they are not mapped in the revised countywide mapping. It may be the case that flooding exists in these communities.

Also note that there has been a corporate limit change in the Town of Upton that has affected the mapped flooding in Township C and Township C Surplus. This countywide revision reflects that change.

The Town of Gilead is listed as not participating in the NFIP.

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

1.2 Authority and Acknowledgments

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

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

Andover, Town of:	The hydrologic and hydraulic analyses for the July 3, 1984, study were performed by the Soil Conservation Service (SCS) during the Flood Hazard Analyses report for the Ellis River. The Flood Hazard Analyses report was completed in May 1976.
Bethel, Town of:	For the original, May 2, 1991, FIS, the hydrologic and hydraulic analyses were prepared by the SCS for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-87-E-2511, Project Order No. 2. That work was completed in December 1988. For the June 19, 1997, study, the hydrologic and hydraulic analyses were prepared by the U.S. Geological Survey (USGS) for FEMA, under Inter-Agency Agreement No. EMW-93-E-4116, Project Order No. 1. This work was completed in June 1994.
Brownfield, Town of:	The hydrologic and hydraulic analyses for the October 1, 1980, study were performed by the Edward C. Jordan Company for the Federal Insurance Administration (FIA), under Contract No. H-4578. This study was completed in December 1978.
Buckfield, Town of	The hydrologic and hydraulic analyses for the September 3, 1992, study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-89-E-2997, Project Order No. 5. This work was completed in November 1990.
Canton, Town of:	The hydrologic and hydraulic analyses for the November 3, 1989, study were prepared by the USGS for FEMA, under Inter-Agency

Canton, Town of (cont'd): Agreement No. EMW-84-E-1548, Project Order No. 2. This work was completed in March 1988.

Denmark, Town of: The hydrologic and hydraulic analyses for the January, 1980, study were performed by Edward C. Jordan Company for the FIA, under Contract No. H-4578. This study was completed in September 1978.

Dixfield, Town of: For the original September 4, 1985, FIS report and March 4, 1985, FIRM, the hydrologic analyses were prepared by the SCS during the course of the flood hazard analyses for the Webb River in the Towns of Dixfield and Mexico. That work was completed in June 1975. The hydraulic analyses were performed by the New England Division of the U.S. Army Corps of Engineers (USACE) for FEMA under Inter-Agency Agreement No. IAA-H-2-73. That work was completed in March 1976.

For the September 7, 2001, study, the hydrologic and hydraulic analyses for the Androscoggin River was prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-88-E-2738. This work was completed in October 1988. The hydrologic and hydraulic analyses for Aunt Hannah Brook, Butterfield Brook, Harvey Brook, Hugh Brook, Newton Brook, Paddy Meadow Brook, Potash Brook, Sevenmile Stream, and Tucker Valley Brook were performed by the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), as part of the Town of Dixfield Flood Management Study. This work was completed in March 1999.

Planimetric base map files were provided in digital format by the State of Maine Office of GIS. These files were compiled at a scale of 1:24,000 from USGS 7.5-Minute Series Topographic maps. The coordinate system used for the production of the September 7, 2001 FIRM is Universal Transverse Mercator (UTM), North American Datum of 1927 (NAD27), Clarke 1866 spheroid.

Fryeburg, Town of: The hydrologic and hydraulic analyses for the January, 1980, study were prepared by Edward C. Jordan Company for the FIA, under Contract No. H-4578. This work, which was completed in

Fryeburg, Town of (cont'd):	January 1979, covered all significant flooding sources in the Town of Fryeburg. Flood boundaries in approximate study areas were determined in January 1976 by Michael Baker, Jr., Inc. under contract to FIA.
Hartford, Town of:	In the July 5, 1994, study, the hydrologic and hydraulic analyses were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-91-E-3535. This work was completed in October 1992.
Hiram, Town of:	The hydrologic and hydraulic analyses for the August, 1979, study were performed by Edward C. Jordan Company for the FIA, under Contract No. H-4578. This study was completed in July 1978.
Lovell, Town of:	The hydrologic and hydraulic analyses for the February 17, 1989, study were prepared by the USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No. 20. This work was completed in December 1987.
Mexico, Town of:	The hydrologic and hydraulic analyses for the February 3, 1981, study were performed by the New England Division of the U.S. Army Corps of Engineers, for the FIA, under Inter-Agency Agreement No. IAA-H-2-73 Project Order No. 14. This work, which was completed in March, 1976 covered all significant flooding sources affecting the Town of Mexico.
Newry, Town of:	For the original September 4, 1984, FIRM, only approximate analyses were conducted. For the May 5, 2003, study, the hydrologic and hydraulic analyses for Sunday River and Barkers Brook were prepared by USGS, Maine District, for FEMA, under Inter-Agency Agreement No. EMW-98-IA-0175, Project Order No. 1. This work was completed in December 2000. Base map information shown on this FIRM was provided in digital format by the State of Maine Office of GIS. This information was compiled at a scale of 1:24,000 from USGS 7.5-Minute Series Topographic Maps. Additional information may have been derived from other sources. Users should be aware that minor

Newry, Town of (cont'd): adjustments may have been made to specific base map features.

The projection used in the preparation of the May 5, 2003, map was UTM Zone 19. The horizontal datum was NAD 83, GRS 80 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMS for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the May 5, 2003 FIRM.

Norway, Town of: The hydrologic and hydraulic analyses for the September 4, 1991, study were prepared by USGS for FEMA, under Inter-Agency Agreement No. EMW-84-E-1548, Project Order No. 2. This work was completed in June 1990.

Otisfield, Town of: the hydrologic and hydraulic analyses for the November 19, 1980, study were prepared by the SCS for the FIA, under Inter-Agency Agreement No. IAA-H-17-78, Project Order No. 5. This study was completed in October 1979.

Oxford, Town of: The hydrologic and hydraulic analyses for this study were prepared by USGS for FEMA, under Inter-Agency Agreement No. ENW-84-E-1548, Project Order No. 2. This work was completed in March 1989.

Paris, Town of: The hydrologic and hydraulic analyses for the September 27, 1991, study were prepared by USGS for FEMA, under Inter-Agency Agreement No. EMW-84-E-1548. This work was completed in August 1990.

Peru, Town of: The hydrologic and hydraulic analyses for the May 17, 1990, study were prepared by USGS for FEMA, under Inter-Agency Agreement No. EMCJ-88-E-2738, Project Order No. 4. This work was completed in October 1988.

Porter, Town of: The hydrologic and hydraulic analyses for the June 1979 study were performed by the Edward C. Jordan Company, Inc., for the FIA, under Contract No. H-4578. This work, which was completed in April 1978, covered all significant flooding sources affecting the Town of Porter.

Rumford, Town of:	The hydrologic and hydraulic analyses for the January 1980 study were performed by USGS, Water Resources Division, Augusta, Maine, for the FIA, under Inter-Agency Agreement No. IAA-M-17-75, Project Order No. 4. This work, which was completed in November 1977, covered all significant flooding sources affecting the Town of Rumford.
Waterford, Town of:	The hydrologic and hydraulic analyses for the October 1, 1981, study were prepared by the SCS for FEMA, under Inter-Agency Agreement No. IAA-H-17-78, Project Order No. 5. This work was completed in May 1980.
West Paris, Town of:	The hydrologic and hydraulic analyses for the June 3, 1988, study were prepared by USGS for FEMA, under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No. 11. This work was completed in February 1987.

The hydrologic and hydraulic analyses for this revision were performed by USGS, for FEMA, under Inter-Agency Agreement No. HSFE01-05-X-0023 contracted in September 2005. This study was completed in March 2007.

Base map information shown on this revision was obtained from the Maine Geographic Information System (MeGIS). Base map files were provided in digital format by the Office of Maine GIS (http://apollo.ogis.state.me.us/). Orthophoto images, except for the panels listed below, were produced at a scale of 1:2,400 and 1:4,800. The photography was acquired beginning in the spring of 2003 through the spring of 2005. The pixel resolution of the ortho imagery used for Oxford County is 2-ft.

Because of incomplete coverage by the MeGIS 2005 orthophoto imagery, an alternate source for base map imagery was used on several FIRM panels. Panels 0320, 0340, 0350, 0435, 0455, 0475, 0585, 0605, 0615, and 0785 were created using 1-meter pixel resolution USGS DOQQs acquired between 1991 and 1998.

The projection used in the preparation for both sources of orthophoto imagery was Universal Transverse Mercator (UTM) Zone 19. The horizontal datum is North American Datum (NAD) of 1983, 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 meeting is held to review the results of the study.

The dates of the initial, intermediate and final CCO meetings held for the incorporated communities within Oxford County are shown in Table 1, “CCO Meeting Dates for Precountywide FIS.”

TABLE 1 - CCO MEETING DATES FOR PRECOUNTYWIDE FIS

Community Name	Initial CCO Date	Intermediate CCO Date	Final CCO Date
Town of Andover	*	*	October 20, 1983
Town of Bethel	November 1986	December 1988	January 24, 1990
Town of Brownfield	June 1977	*	November 16, 1979
Town of Buckfield	*	*	July 30, 1991
Town of Canton	August 4, 1983	*	November 10, 1988
Town of Denmark	June 1977	*	July 2, 1979
Town of Dixfield	*	*	April 18, 1984
Town of Fryeburg	June 1977	*	July 30, 1979
Town of Hartford	*	*	April 27, 1993
Town of Hiram	June 1977	*	March 27, 1979
Town of Lovell	February 1985	December 1987	March 31, 1988
Town of Mexico	*	*	January 21, 1975
Town of Newry	March 29, 1998	*	June 5, 2002
Town of Norway	February 22, 1984	*	October 18, 1990
Town of Otisfield	*	February 1, 1980	April 30, 1980
Town of Oxford	February 22, 1984	*	May 3, 1990
Town of Paris	February 22, 1984	*	November 21, 1990
Town of Peru	September 2, 1987	October 1988	March 30, 1989
Town of Porter	June 1977	*	October 24, 1978
Town of Rumford	December 4, 1975	August 15, 1977	August 21, 1978
Town of Waterford	January 1978	*	February 4, 1981
Town of West Paris	January 1985	March 1987	July 24, 1987

*Data not available

For this countywide revision, the initial Consultation Coordination Officer (CCO) meetings were held on November 4th, December 8th, and December 13th of 2004 and were attended by representatives of FEMA, the Maine Floodplain Management Office, CDM, Region 1 Management Center (RMC1), and Oxford County communities.

The results of the study were reviewed at the final CCO meetings held on February 19th and February 20th of 2008, and were attended by representatives of FEMA, the Maine Floodplain Management Office, the Office of Maine GIS (MEGIS), CDM, RMC1, and Oxford County communities. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Oxford County, Maine, including the incorporated communities listed in Section 1.1. The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of project development or proposed construction.

All or portions of the flooding sources listed in Table 2, "Flooding Sources Studied by Detailed Methods," were studied by detailed methods in the precountywide FISs. Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM. The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction.

TABLE 2 –FLOODING SOURCES STUDIED BY DETAILED METHODS

Flooding Source Name	Description of Study Reaches
Alder River	At Bethel, Town of; for the entire length within the community
Androscoggin River	At Bethel, Town of; for the entire length within the community
	At Canton, Town of; for the entire length within the community
	At Peru, Town of; for the entire length within the community
	At Rumford, Town of; for entire length within community
Aunt Hannah Brook	At Dixfield, Town of; from confluence with Webb River to just upstream of Weld Road
Barkers Brook	At Newry, Town of; from confluence with Sunday River to a point approximately 240 feet upstream of Broadway Drive
Bear Pond	At Hartford, Town of; the entire pond
Bird Brook	At Norway, Town of; from its confluence with Pennesseewassee Stream to just upstream from Elm Hill Road
Butterfield Brook	At Dixfield, Town of; from the confluence with Sevenmile Stream to just upstream of U.S. Route 2/State Route 17
Crooked River	At Otisfield, Town of, from approximately 500 feet downstream of Scribner’s Mill dam to the upstream corporate limits
	At Waterford, Town of; for the entire length within the community, passing through Town of Norway
Dragon Meadow Brook	At Denmark, Town of; for the portion which is downstream of the corporate limits and is part of the Saco River flood plain
East Branch Nezinscot River	At Buckfield, Town of; from confluence with Nezinscot River to State Route 140

TABLE 2 – FLOODING SOURCES STUDIED BY DETAILED METHODS (cont'd)

Flooding Source Name	Description of Study Reaches
Ellis River	At Andover, Town of; from downstream corporate limits to East Andover Road
Hancock Brook	At Hiram, Town of; from approximately 400 feet upstream of its confluence with Saco River to approximately 1000 feet upstream from Sandpit Road
Harvey Brook	At Dixfield, Town of; from its confluence with Androscoggin River, to approximately 460 feet upstream of Canton Point Road
Hugh Brook	At Dixfield, Town of; from the confluence with Sevenmile Stream upstream 1,450 feet
Kedar Brook	At Waterford, Town of; from Keoka Lake to State Route 37
Kendall Brook	At Bethel, Town of; from confluence with Alder River to upstream corporate limits
Keoka Lake	At Waterford, Town of; the entire lake
Kezar Lake	At Lovell, Town of; including the Lower Bay, Upper Bay and the narrows, and its entire shoreline within the community
Lake Anasagunticook	At Hartford, Town of; the entire lake
Little Androscoggin River	At Norway, Town of; for the entire length within the community
	At Oxford, Town of; for the entire length within the community
	At Paris, Town of; for the entire length within the community
	At West Paris, Town of; for the entire length within the community
Little Bear Pond	At Hartford, Town of; the entire pond
Mill Brook	At Bethel, Town of; from its confluence with Androscoggin River to a point approximately 1000 feet upstream of State Route 5

TABLE 2 – FLOODING SOURCES STUDIED BY DETAILED METHODS (cont'd)

Flooding Source Name	Description of Study Reaches
Mill Brook (cont'd)	At Porter, Town of; from its confluence with Ossipee River to a point approximately 200 feet upstream of State Route 25
Newton Brook	At Dixfield, Town of; from its confluence with Androscoggin River to just upstream of Norton Road
Nezinscot River	At Buckfield, Town of; from downstream corporate limits to confluence of East and West Branches of Nezinscot River
Old Course Saco River	At Fryeburg, Town of; from downstream confluence with Saco River to upstream junction with Saco River
Ossipee River	At Hiram, Town of; from confluence with Saco River to upstream corporate limits
	At Porter, Town of; for the entire length within the community
Paddy Meadow Brook	At Dixfield, Town of; from the confluence with Webb River to just upstream of Weld Road
Pappoose Pond	At Waterford, Town of; the entire pond
Pennesseewassee Stream	At Norway, Town of; from its confluence with Little Androscoggin River to approximately 750 feet upstream of Highland Avenue at Pennesseewassee Lake
Pleasant River	At Bethel, Town of; from its confluence with Androscoggin River to a point approximately 50 feet upstream of U.S. Route 2
Potash Brook	At Dixfield, Town of; from the confluence with Sevenmile Stream to just upstream of U.S. Route 2/State Route 17
Ridlon Brook-Spectacle Ponds Brook	At Porter, Town of; from its confluence with Ossipee River, through the town of Hiram, and ending in Porter, at Pine Street

TABLE 2 – FLOODING SOURCES STUDIED BY DETAILED METHODS (cont'd)

Flooding Source Name	Description of Study Reaches
Saco River	At Brownfield, Town of; for the entire length within the community
	At Denmark, Town of; for the entire length within the community
	At Hiram, Town of; for the entire length within the community
	At Fryeburg, Town of; for the entire length within the community
	At Hiram, Town of; for the entire length within the community
Sanding Brook	At Bethel, Town of; from its confluence with Alder River to just upstream from Mason Street
Sevenmile Stream	At Dixfield, Town of; for the entire length within the community
Shepards River	At Brownfield Town of; from State Game Management Area to its confluence with Saco River
Stony Brook	At Paris, Town of; from its confluence with Little Androscoggin River to a point approximately 2800 feet upstream of Brett Hill Road
Sunday River	At Bethel, Town of; from confluence with Androscoggin River to upstream corporate limits
	At Newry, Town of; for the entire length within the community
Swift River	At Mexico, Town of; for the entire length within the community
	At Rumford, Town of; for the entire length within the community
Thompson Lake	At Oxford, Town of; entire shoreline within the community

TABLE 2 – FLOODING SOURCES STUDIED BY DETAILED METHODS (cont'd)

Flooding Source Name	Description of Study Reaches
Thompson Lake Outlet	At Oxford, Town of; from confluence with Little Androscoggin River to confluence of Thompson Lake
Tucker Valley Brook	At Dixfield, Town of; from downstream corporate limits to just upstream of Point Morse Hill Road
Twitchell Brook	At Bethel, Town of; from its confluence with Androscoggin River to a point approximately 3700 feet upstream from U.S Route 2 and State Routes 5 & 26
Webb River	At Dixfield, Town of; from its confluence with Androscoggin River to upstream corporate limits
	At Mexico, Town of; for the entire length within the community
West Branch Ellis River	At Andover, Town of; from its confluence with Ellis River to a point approximately 1750 feet upstream of confluence with Stony Brook
West Branch Nezinscot River	At Buckfield, Town of; from downstream confluence with Nezinscot River to upstream corporate limits
Whitney Brook	At Canton, Town of; from its confluence with Androscoggin River to Anasagunticook Lake, just upstream from State Route 108
Worthley Pond	At Peru, Town of; along the entire shoreline

For streams and ponds studied by detailed methods for this study, see Table 3, “Scope of Revision.”

TABLE 3 - SCOPE OF REVISION

Flooding Source	Limits of Revised or New Detailed Study
Barkers Brook	At Bethel, Town of; from approximately 900 feet downstream from Cushing Road Bridge to approximately 7100 feet upstream from Unnamed Tributary
Barkers Pond	At Hiram, Town of; the entire pond
Crooked River	At Otisfield, Town of; from approximately 650 feet downstream of Scribner’s Mill Road to approximately 850 feet upstream of State Route 117
Hancock Brook	At Hiram, Town of; from approximately 400 feet upstream of confluence with Saco River to headwater at Barkers Pond
Moose Pond	At Otisfield, Town of; the entire pond
Saturday Pond	At Otisfield, Town of; the entire pond
Stony Brook	At Paris, Town of; from approximately 100 feet downstream of State Route 117 to approximately 3,900 feet upstream of confluence with Unnamed Tributary
Twitchell Brook	At Paris, Town of; from approximately 350 feet upstream of confluence with Stony Brook to approximately 7,650 feet upstream of confluence with Stony Brook

The following streams were redelineated for this study: Androscoggin River for its entire length within the Town of Bethel, Kendall Brook in the Town of Bethel from confluence with Alder River to upstream corporate limit, Ossipee River Tributary 1 from end of Plains Road to Duringtown Road in the Town of Hiram, Sucker Brook from outlet of Saturday Pond to inlet of Thompson Lake in the Town of Otisfield, Thompson Lake for its entire shoreline in the Town of Oxford, and Little Androscoggin River in the Town of West Paris from Porter Street to the corporate limit.

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 Oxford County. For this countywide revision, no new approximate studies were executed. All or portions of the flooding sources listed in Table 4, “Flooding Sources Studied by Approximate Methods,” were studied by approximate methods in the precountywide FISs.

TABLE 4 – FLOODING SOURCES STUDIED BY APPROXIMATE METHODS

Flooding Source Name	Town(s)
Abbott Brook	Andover, Mexico
Alder Brook	Lovell
Anasagunticook Lake	Canton
Andrews Brook	Lovell, West Paris
Aunt Hannah Brook	Dixfield
Barkers Brook	Bethel, Rumford
Basin Falls Brook	Buckfield
Bean Brook	Rumford
Bear Pond	Waterford
Bear River	Newry, Waterford
Bearce Bog	Otisfield
Beaver Brook	Bethel
Beaver Pond Brook	Dixfield
Benn Brook	Lovell
Bird Brook	Norway
Black Brook	Andover
Black Pond	Fryeburg
Bog Brook	Andover, Buckfield, Canton, Hartford, West Paris
Boulder Brook	Lovell
Bradley Brook	Lovell
Bradley Pond	Lovell
Bunganock Brook	Hartford
Bunganock Pond	Hartford
Chandler Brook	Bethel
Chapman Brook	Bethel
Charles River (portion)	Fryeburg
Chase Brook	Mexico
Childs Brook	Canton
Coburn Brook	Rumford
Coffin Brook	Lovell
Cole Brook	Paris
College Swamp	Otisfield
College Swamp Brook	Otisfield
Concord River	Rumford
Coon Road Swamp	Otisfield
Crooked River	Norway, Otisfield
Cushman Pond	Lovell
Dan Charles Pond	Lovell
Darnit Brook	Buckfield
Dead Hole Brook	Otisfield

TABLE 4 – FLOODING SOURCES STUDIED BY APPROXIMATE METHODS (cont'd)

Flooding Source Name	Town(s)
Dolly Brook	Otisfield
Dunham Brook	Oxford
Drew Brook	Buckfield
Dunham Brook	Paris
East Branch Nezinscot River	Hartford
East Branch of the Pleasant River	Bethel
Eastman Brook	Otisfield
Elkins Brook	Fryeburg
Ellis River	Rumford
Ellis River (upstream portions)	Andover
Fight Brook	Fryeburg
Five Kezar Ponds	Lovell
Fletcher Brook	Dixfield
Forest Pond	Canton
Fulller Brook	Canton
Gardner Brook	Andover
Greely Brook	Otisfield, Oxford
Haley Brook	Fryeburg
Harlan Swamp	Otisfield
Harvey Brook	Dixfield
Hayford Brook	Hartford
Heald Pond	Lovell
Herrick Brook	Norway
Hobbs Brook	Norway
Horseshoe Pond	Lovell
Howard Brook	Lovell
Howe Brook	Andover, Rumford
Hugh Brook	Dixfield
Island Pond	Waterford
Jackson Brook	Otisfield
Joes Pond	Rumford
Keys Brook	Lovell
Kezar River	Lovell
Little Moose Pond	Waterford
Little Pennesseewassee Pond	Norway
Little Pond	Otisfield
Little Trout Brook	Lovell
Logan Brook	Rumford
Lombard Brook	Norway, Otisfield

TABLE 4 – FLOODING SOURCES STUDIED BY APPROXIMATE METHODS (cont'd)

Flooding Source Name	Town(s)
Lone Brook	Andover
Ludden Brook	Canton, Dixfield
Marshall Pond	Oxford
Martin Brook	Lovell
McCrillis Brook	Bethel
McWain Pond	Waterford
Meadow Brook	Norway, Oxford, Rumford
Middle Brook	Otisfield
Middle Brook Bog	Otisfield
Mill Brook	Bethel, Lovell, Porter, Waterford
Minister Brook	Oxford
Mitchell Brook	Hartford, Mexico
Molly Gut Brook	Otisfield
Moody Brook	Paris, West Paris
Moose Pond	Lovell, Otisfield
Moose Pond Brook	West Paris
Mt. Zircon Reservoir	Rumford
Mud Pond	Buckfield, Peru, Waterford
Noah Eastman Pond	Lovell
North Pond	Buckfield, Norway
Otter Brook	Bethel
Paddy Meadow Brook	Dixfield
Paine Pond	Paris
Patterson Brook	Lovell
Pennesseewassee Lake	Norway
Pleasant Lake	Otisfield
Pleasant River	Bethel
Prays Brook	Lovell
Sand Pond	Norway
Sargent Brook	Otisfield
Saturday Pond	Otisfield
Sawyer Brook	Andover
Scoggins Brook	Waterford
Scotty Brook	Rumford
Smith Brook	Otisfield
Songo Pond	Bethel
South Pond	Buckfield
Sparrow Brook	Hartford
Spears Stream	Peru

TABLE 4 – FLOODING SOURCES STUDIED BY APPROXIMATE METHODS (cont'd)

Flooding Source Name	Town(s)
Split Brook	Rumford
Stony Brook	Andover
Stony Brook	Paris
Sucker Brook	Lovell, Otisfield
Swains Pond	Rumford
Swan Pond	Hartford
Swan Pond Brook	Buckfield
Thomas Brook	Peru
Thompson Brook	Hartford
Thompson Lake	Otisfield, Oxford
Town Farm Brook	Oxford
Tributary 1 (on Swift River and Edmunds Bog Brook area)	Mexico
Twitchell Brook	Bethel, Paris
Unnamed Tributaries	Countywide
Upper Stony Brook	Peru
Walton Brook	Mexico
Warren Brook	Waterford
Webber Brook	Oxford
Weeks Brook	Fryeburg
West Branch	Oxford
West Branch Ellis River	Andover
West Branch of the Pleasant River	Bethel
Willow Brook	Oxford
Worthley Brook	Peru
Wyman Brook	Rumford

Detail-studied streams that were not re-studied as part of this revision may include a profile baseline on the FIRM. The profile baselines for these streams were based on the best available data at the time of their study and are depicted as they were on the previous FIRMs. In some cases the transferred profile baseline may deviate significantly from the channel or may be outside of the floodplain.

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 5, "Letters of Map Change."

TABLE 5 – LETTERS OF MAP CHANGE

Community	Case Number	Flooding Source	Letter Date
Bethel, Town of	06-01-B021P	Twitchell Brook	10/30/2006

2.2 Community Description

Oxford County is located in the central western portion of Maine. In Oxford County, there are 34 towns, 19 townships, two plantations, and two unorganized townships. The Townships of Adamstown, Andover North Surplus, Bowmantown, C Surplus, Lower Cupsuptic, Lynchtown, Oxbow, Parkertown, Parmachenee, Richardsontown, Township C, Upper Cupsuptic and the Town of Upton are located in the northern part of the county. The Towns of Andover, Buckfield, Byron, Canton, Dixfield, Greenwood, Hartford, Hebron, Mexico, Norway, Oxford, Paris, Peru, Roxbury, Rumford, Sumner, West Paris, and Woodstock are located in the eastern part of the county. The Towns of Bethel, Gilead, Hanover, Lovell, Newry, Stoneham, Stow, Sweden, and Waterford, plus Andover West Surplus, Grafton, Riley, Mason, Batchelders Grant, and Albany Townships fall within the western portion of the county. The southern area of the county is formed by the Towns of Brownfield, Denmark, Fryeburg, Hiram, Otisfield, and Porter. LURC jurisdictions fall throughout Oxford County and are located in the following areas: the Township of Milton to the east, Lincoln Plantation, Magalloway Plantations, and the Unorganized Township of North Oxford to the north, and the Unorganized Township of South Oxford to the south.

Oxford County is bordered on the east and south by Androscoggin, Cumberland, Franklin, and York Counties in Maine. It is bordered on the west by New Hampshire Counties Coös and Carroll. The northern tip of Oxford County falls along the Canadian and U.S. border.

According to census records, the population of Oxford County was 54,755 in 2000 (Reference 1). The total area in Oxford County consists of 2,175 mi2, including 97 mi2 of water area. All communities in Oxford County included in this FIS, along with their population and total area, are listed in Table 6, "Population and Total Area by Community."

TABLE 6 – POPULATION AND TOTAL AREA BY COMMUNITY

Community	Total Area (sq. mi) [1]	Population[1]
Andover, Town of	57.45	864
Adamstown, Township (Twp)	*	*
Albany, Twp	*	*
Andover North Surplus, Twp	*	*
Andover West Surplus, Twp	*	*
Batchelders Grant, Twp	*	*
Bethel, Town of	65.95	2,411
Bowmantown, Twp	*	*

[1]Data obtained from U.S Census Bureau (Reference 1)

*Data is not available for individual townships: the total population of unorganized townships in Oxford County, excluding Lincoln and Magalloway Plantations and Milton Township, is 532, or the sum of North and South Oxford Unorganized Territories.

TABLE 6 – POPULATION AND TOTAL AREA BY COMMUNITY (cont'd)

Community	Total Area (sq. mi)[1]	Population[1]
Brownfield, Town of	46.15	1,251
Buckfield, Town of	37.89	1,723
Byron, Town of	52.51	121
C Surplus, Twp	*	*
Canton, Town of	30.26	1,121
Denmark, Town of	48.60	1,004
Dixfield, Town of	41.61	2,514
Fryeburg, Town of	65.87	3,083
Grafton, Twp	*	*
Greenwood, Town of	43.15	802
Hanover, Town of	7.50	251
Hartford, Town of	45.10	963
Hebron, Town of	22.55	1,053
Hiram, Town of	38.84	1,423
Lincoln Plantation**	36.85	46
Lovell, Town of	47.88	974
Lower Cupsuptic, Twp	*	*
Lynchtown, Twp	*	*
Magalloway Plantation**	54.17	37
Mason, Twp	*	*
Milton, Twp**	14.96	123
Mexico, Town of	23.65	2,959
Newry, Town of	61.43	344
Norway, Town of	47.48	4,611
North Oxford (Unorganized Territory)**	61.43	17
Otisfield, Town of	44.29	1,560
Oxbow, Twp	*	*
Oxford, Town of	41.85	3,960
Paris, Town of	40.97	4,793
Parkertown, Twp	*	*
Parmachenee, Twp	*	*
Peru, Town of	47.81	1,515
Porter, Town of	32.92	1,438
Richardsontown, Twp	*	*
Riley, Twp	*	*
Roxbury, Town of	44.08	384
South Oxford (Unorganized Territory)**	95.67	515
Rumford, Town of	69.86	6,472
Stoneham, Town of	36.39	255

[1]Data obtained from U.S Census Bureau (Reference 1)

*Data is not available for individual townships: the total population of unorganized townships in Oxford County, excluding Lincoln and Magalloway Plantations and Milton Township, is 532, or the sum of North and South Oxford Unorganized Territories.

**Unorganized Territory population counts are the sum of all the unorganized townships, excluding Lincoln and Magalloway Plantations and Milton Townships, separated by physical location into two groups, referred to as North Oxford and South Oxford in this table.

TABLE 6 – POPULATION AND TOTAL AREA BY COMMUNITY (cont'd)

Community	Total Area (sq. mi)[1]	Population[1]
Stow, Town of	24.50	288
Sumner, Town of	44.79	854
Sweden, Town of	29.69	324
Township C	*	*
Upper Cupsuptic, Twp	*	*
Upton, Town of	42.03	62
Waterford, Town of	53.12	1,455
West Paris, Town of	24.40	1,722
Woodstock, Town of	46.85	1,307

[1]Data obtained from U.S Census Bureau (Reference 1)

*Data is not available for individual townships: the total population of unorganized townships in Oxford County, excluding Lincoln and Magalloway Plantations and Milton Township, is 532, or the sum of North and South Oxford Unorganized Territories.

The topography of Oxford County can be described as gently rolling, moderately hilly terrain with some low mountains separated by narrow valleys. There are a range of soil associations that exist in Oxford County. Ondowa-Podunk Association soils are soils that have formed in alluvial deposits and have loamy textures. They are deep and well to moderately well-drained, depending on topographic location. Hermon-Lymon–Peru Association soils have formed in glacial tills. They have sandy or loamy textures and are excessively to moderately well-drained. Many ridges and hilltops are shallow to bedrock and rock outcrops are common. Soils of the Colton-Adams-Histol Association have formed in glacial outwash on outwash plains and terraces. The Adams and Colton soils are generally deep, excessively drained, and coarse textured. Very poorly drained organic soils, or Histosols, are found in low-lying areas.

Located within the county are Maine's Appalachian Mountains, Grafton Notch State Park, and the White Mountain National Forest. The Western foothills of Maine provide unlimited natural resources including lakes, ponds, rivers and mountains. The Ellis, Saco and Androscoggin River are among the main rivers that pass through the county. Land use within the county is primarily agricultural and open forest, with areas of residential development scattered throughout. Of the urban uses, residential makes up the largest portion.

A more detailed description of the communities with previously printed FISs, where information was updated and revised for this countywide FIS, is below:

Town of Bethel

The Town of Bethel is located in the central portion of Oxford County along the Androscoggin River, approximately 70 miles northwest of the City of Portland, in southwestern Maine. It is bordered by the town of Hanover to the north, the Town of Rumford to the northeast, the Township of Milton to the east, the Town of Woodstock to the southeast, the Towns of Greenwood and Albany to the south, the Township of Mason to the southwest, the Town of Gilead to the west, and the Town of Newry to the north. The total area contained within the corporate limits is 65.95 mi2 (mi^2).

The Androscoggin River has a drainage area of approximately 3,524 mi^2 and is Maine's fourth largest river basin. From its headwaters at Umbagog lake, the Androscoggin River flows towards the southeast for approximately 161 miles to Merrymeeting Bay. The Androscoggin River flows towards the northeast through the town forming a portion of its corporate limits.

The Sunday River, a major tributary of the Androscoggin River originates on Mount Carlo in the Township of Riley and flows towards the south-southeast for 13.3 miles to its confluence with the Androscoggin River in the Town of Bethel. The Sunday River has a drainage area of approximately 51.4 mi^2.

Cold winters and cool summers typify the climate of Bethel. The average annual temperature at NOAA Weather Station number 177325 in Rumford 1 SSE is 44 degrees Fahrenheit (^{o}F) ranging from a monthly mean of 17^o F in January to 68^{o}F in July. The mean annual precipitation is 45 inches (Reference 2). Water from snowmelt is a significant source of runoff during March and April.

Town of Hiram

The Town of Hiram is located in the southwest portion of Maine in southeastern Oxford County, approximately 37 miles south-southwest of Paris and 37 miles northwest of Portland. The Ossipee River forms a common boundary on the south with the Town of Cornish and Parsonfield. The Saco River forms a common boundary on the east with Baldwin. Sebago also borders Hiram on the east; Brownfield and Denmark border on the north, and Porter borders on the west. The total area contained in the corporate limits is 38.84 mi^2.

Hiram is in the Saco River basin and the Saco River is the major river flowing through the town. Above the USGS gage located at Cornish, the river drains an area of approximately 1,298 mi2, meanders approximately 85.3 miles and has an average slope of 9.06 feet per mile. The Ossipee River, which flows along the southern edge of Hiram, drains an area of approximately 455 mi2. The river is approximately 48.6 miles long with an average slope of 15.9 feet per mile above the USGS gage in Cornish. Hancock Brook drains approximately 22 mi2 and is approximately 11.4 miles long. Located near the White Mountains, the land in Hiram is hilly. Most of the town is forested with some land cleared for development and agricultural use.

Cold winters and cool summers typify the climate of Hiram. The average annual temperature at NOAA Weather Station number 172238 in East Hiram is 43 degrees Fahrenheit (^{o} F) ranging from a monthly mean of 15^o F in January to 67^{o}F in July. The mean annual precipitation is 48 inches (Reference 2). Water from snowmelt is a significant source of runoff during March and April.

Town of Otisfield

The Town of Otisfield is located in the southern portion of Oxford County in southwestern Maine. Otisfield borders the Town of Norway to the north, the Towns of Casco and Naples to the south, the Towns of Oxford and Poland to the east and the Town of Harrison to the west. Otisfield is situated approximately 20 miles west of Lewiston, Maine and 30 miles north-northwest of Portland Maine. The total area contained in the corporate limits is 44.29 mi^2.

The Crooked River, which flows south along the western border of Otisfield, is the principal tributary of the Songo River which flows into Sebago Lake. It has a length of 42 miles and a drainage area of 152 mi^2. The northeast portion of Otisfield drains into the Androscoggin River Basin.

Cold winters and cool summers typify the climate of Otisfield. The average annual temperature at NOAA Weather Station number 172238 in East Hiram is 43 degrees Fahrenheit (^{o}F) ranging from a monthly mean of 15^o F in January to 67^{o}F in July. The mean annual precipitation is 48 inches (Reference 2). Water from snowmelt is a significant source of runoff during March and April.

Town of Paris

The Town of Paris is located in southeastern Oxford County in southwestern Maine. It is bordered by the Town of West Paris to the north; the Towns of Buckfield and Hebron to the east; the Town of Oxford to the south; and the Town of Norway to the west. The total area contained in the corporate limits is 40.97 mi^2.

Originating from Bryant Pond, the Little Androscoggin River flows southeast for approximately 46 miles through hilly terrain where it joins the Androscoggin River in Auburn. The river has several reaches that are flat and slow moving, and other with many riffles. The Little Androscoggin River enters Paris from the north, continues flowing in a southwesterly direction through the community, and enters the towns of Norway and Oxford. In Paris, several streams flow into the Little Androscoggin River, including Stony brook, Cole Brook, and Moody Brook.

Cold winters and cool summers typify the climate of Paris. The average annual temperature at NOAA Weather Station number 172238 in East Hiram is 43 degrees Fahrenheit (^{o} F) ranging from a monthly mean of 15^o F in January to 67^{o}F in July. The mean annual precipitation is 48 inches (Reference 2). Water from snowmelt is a significant source of runoff during March and April.

2.3 Principal Flood Problems

The average seasonal distribution of floods for the State of Maine indicates that 33 percent of the floods occur in April, 12 percent in both May and November, and 11 percent in March. The rest of the floods are evenly distributed throughout the remaining months. In Oxford County, flooding generally occurs in the winter and early spring as a result of heavy rainfall on snow-covered or frozen ground. The most severe flooding occurs in the early spring as a result of snowmelt and heavy rain in conjunction with ice jams. Ice is also a major threat to bridge crossings and other structures in its path. Additional flooding, generally lower in magnitude, also occurs in late summer as a result of hurricanes and tropical storms. The major flood damage in Oxford County is to single- and multi-family dwellings, businesses, factories, farmland, utilities, railroads, roads, and bridges.

The flood problems for the communities within Oxford County have been compiled and are described below:

Several residential and commercial structures along the Little Androscoggin River, Pennesseewassee Stream and Bird Brook in Oxford County are susceptible to flood damage. The most notable floods on the Little Androscoggin River occurred in March

1936, March 1953, and April 1987 (Reference 3). The 1936 flood had a peak discharge of 16,800 cubic feet per second (cfs) at the mouth of the river in Auburn. The flood caused extensive damage to industry, urban areas, highways, railroads, and utilities in the river basin. The 1953 flood had a peak discharge of 16,500 cfs in Auburn. The 1987 flood had a peak discharge estimated to be 14,000 cfs. Upstream, the 1987 flood on the Little Androscoggin River near South Paris was the greatest since at least 1913 and probably since 1820 (Reference 4). Major floods occurring along the Little Androscoggin River in Paris were recorded at USGS gage no. 01057000, near the town of South Paris, Maine, and at USGS Gage no. 01058500, near Auburn, Maine, with drainage areas of 75.8 and 328 mi2, respectively. The 1936, 1953, and 1987 floods had recurrence intervals of 50, 100, and greater than 100 years, respectively. Major flooding on the Little Androscoggin River usually occurs from snowmelt and heavy winter and spring rains. Ice jamming also contributes to the severity of flooding along the Little Androscoggin River. Towns affected by Little Androscoggin River floods include Oxford, Norway, Paris and West Paris. Flooding in West Paris is limited to areas adjacent to the Little Androscoggin River for its entire length in the town. Damage from flooding in West Paris is primarily confined to highway structures and river bank properties. Often in the spring, the high river levels are accompanied by flowing ice.

Several residential and commercial structures in the Town of Paris along the Stony Brook are susceptible to flood damage. Obstructions such as trees, brush, and ice at bridges and dams aggravate flooding (Reference 5).

The highest flood stages recorded on the Ellis River were caused by backwater from ice jams on the Androscoggin River during the March 1936 flood. That flood had a discharge of 74,000 cubic feet per second (cfs) at USGS gage No. 01054500, Androscoggin River at Rumford (Reference 6). The confluence of the Ellis and Androscoggin Rivers is located approximately seven miles downstream of the Andover corporate limits in the Town of Rumford. Based on an analysis of 84 years of record for the Androscoggin River at the Rumford gauging station, approximately 10 miles downstream from the confluence of the Ellis River, the 1936 flood had an estimated recurrence interval of 100 years. Lesser floods on the Androscoggin River occurred in March 1953 and October 1959. The most recent major flood on the Androscoggin River occurred in April 1987. The 1987 flood had a discharge of 63,900 cfs at the Rumford gage (Reference 7). Each of these events exceeded the 100-year, 1-percent annual chance recurrence interval at the Rumford gage (Reference 8). Other notable floods occurred in 1895, 1896, 1953, 1959, 1973, 1984, and 1986. The stream gage (in operation since 1963) on the Ellis River at South Andover recorded its highest discharge to date in December 1969 and had an estimated recurrence interval of five years. Towns affected by Androscoggin River floods include Rumford, Bethel, Brownfield, Canton, Mexico, Dixfield, Peru and Andover.

The area of Mexico most susceptible to extensive flooding is the downtown section, at the confluence of the Swift and Androscoggin Rivers, and downstream on the Androscoggin River in the Ridlonville section of Mexico. These areas are within the floodplain and are frequently inundated.

Flooding in Rumford is generally limited to the area along the banks of the Androscoggin River above the upper dam and on the Swift River near the mouth. Major flooding occurred in the following years: May 1893; flows of 38,100 cubic feet per second (cfs) , recurrence interval of 12 years, April 1895; 55,200 cfs, recurrence interval of 90 years, March 1896; 39,000 cfs, recurrence interval of 13 years, November 1927; 39,100 cfs , recurrence interval of 13 years, March 1936; 68,300 cfs, recurrence interval of 400 years, March 1953; 52,800 cfs , recurrence interval of 70 years, October 1959; 41,700 cfs, recurrence interval of 15 years, and April 1987. These data are from USGS records (Reference 9). The March 1936 flood is considered the maximum flood of record on the Androscoggin River at Rumford. Runoff from two major storms and snowmelt along with ice jams caused this flood. Another major flood occurred in 1953, and total losses in the entire Androscoggin basin for these two floods were over $6.5 million, with four lives lost and well over 1500 families evacuated.

Significant flooding has occurred within the town of Canton in past years. The most notable floods on the Androscoggin River in recent history were the March 1936 and April 1987 floods. The 1936 flood caused approximately 4.5 million dollars (1967 dollars) worth of damage to industry, urban centers, highways, railroads, and utilities in the river basin (Reference 10). This flood had an estimated recurrence interval of more than 100 years. The April 1987 flood had an approximate recurrence interval of 75 years. In December of 2003, the confluence of elevated water tables and ice on the Androscoggin River caused flood waters to reach about 392 feet above sea level, which resulted in a significant portion of Canton with water depths of 2+ feet inside the first floor of dwellings. Flood damage estimates appear to be in excess of two million dollars. The recent flood statistics, while nowhere near the levels seen in 1987, caused damage and disruption, including 39 homes and 219 people evacuated (Reference 11).

The most recent serious flooding in Dixfield, caused by Androscoggin River and its tributaries, occurred in June 1998. The greatest known flood was that of April 1987 followed by those of 1936 and 1953.

The Androscoggin River floods the area near the confluence of Spears Stream in West Peru, and Worthley Pond floods structures along its shoreline.

Flooding problems in the Town of Bethel also occurs along Pleasant and Sunday Rivers, and Mill and Sanding Brooks; however, flooding is also experienced at scattered locations along the Alder River, Kendall Brook, and Twitchell Brook. Flooding generally occurs in the winter and early spring as a result of heavy rainfall on snow-covered ground. Ice jams occasionally compound flood problems.

Low lying areas of Brownfield, Hiram, Fryeburg and Denmark are subject to periodic flooding caused by the overflow of the Saco River. Major floods occurring in these towns from the Saco River were in 1936, 1953 and 1987. The frequencies and peak discharges of these floods, which were recorded at the USGS gage at Cornish, are 45,000 cfs with a frequency of 200 years for the 1936 flood; and 42,400 cfs with a frequency of 170 years for the flood of 1953 (References 6 and 12).

Brownfield and Hiram also experience flood problems from additional flooding sources. Brownfield is subject to flooding caused by the overflow of Shepards River, while Hiram experiences flooding from the Ossipee River.

Major floods in Hiram from the Ossipee River occurred in 1936, 1953, and 1987. The 1936 flood had a peak discharge of 17,200 cfs with a frequency of 375 years for the 1936 flood; and 13,800 cfs with a frequency of 100 years for the flood of 1953 (References 13 and 14). In Hiram, the low-lying areas are subject to periodic flooding caused by the overflow from both the Ossipee River and the Saco River. The town of Porter has also experienced flooding from the Ossipee River.

Flooding along the shoreline of Kezar Lake in Lovell is caused by flooding of the Saco River and the Old Course Saco River. During periods of high water, the Saco River and the Old Course Saco River back up over the low-head dam at the outlet and into Kezar Lake. Most floods in the Saco River Basin and, therefore, Kezar Lake occur in the spring when heavy snowmelt and rains combine to cause significant runoff. Significant flooding in the Saco River Basin and Kezar Lake has occurred in March 1936, March 1953, and most recently in April 1987. Stream flow records maintained by the USGS at station No. 01066000 on the Saco River downstream at Cornish indicate these floods had peak discharges of 45,000 cfs, 42,000 cfs, and 31,300 cfs, respectively. Both the 1936 and 1953 floods have recurrence intervals greater than 100 years. The recurrence interval of the 1987 flood on the Saco River at Cornish is approximately 40 years.

Flooding in the Nezinscot River basin generally occurs in the spring months from rapid runoff caused by heavy rains combined with snowmelt. It affects the towns of Buckfield and Hartford. The most notable floods on the Nezinscot River occurred in March of 1936, March of 1953, and April of 1987. The peak discharge of the 1936 flood was estimated to be 9,430 cfs at the dam in Turner, 2.4 miles upstream of the USGS gage at Turner Center (Reference 6). The 1953 flood had a peak discharge of 13,900 cfs at the USGS gage at Turner Center and a recurrence interval of slightly greater than 100 years. The 1987 flood had a peak discharge of 11,600 cfs at the Turner Center gage and a recurrence interval of slightly greater than 50 years (Reference 9). There are no available records of damage caused by these floods in the study area. These floods affected both Hartford and Buckfield.

Records of high-water marks and flood damage were kept at Scribner's Mills in Harrison, Maine, for many years. These records show major floods occurred on the Crooked River in 1896, 1936, 1942, and 1953. More recent flooding occurred in 1996 (Reference 3). The major flood damage along the Crooked River is to seasonal and year-round residences, several businesses, roads, and bridges. The only known record of a flood discharge on the Crooked River was 8,300 cfs as measured in Norway, Maine, in March 1936 (Reference 6). The Crooked River flooding affects the Towns of Otisfield and Waterford.

Flooding on the nearby Keoka Lake and Pappoose Pond resulted in damage to single family dwellings, seasonal homes, and recreational property.

Trees, brush, and other vegetation growing along stream banks impede flood flows during high waters, thus creating backwater and increasing flood heights. Furthermore, trees, ice, and other debris may be washed away and carried downstream to collect on bridges and other obstructions. As the flood flow increases, significant amounts of this debris often break loose, and a wall of water and debris surges downstream until another obstruction is encountered. Debris may collect against a bridge or culvert until the load exceeds the structural capacity, causing its destruction. It is difficult to predict the degree to which, or the location where, debris may accumulate. Therefore, in the development of the flood profiles it has been necessary to assume no accumulation of debris or obstruction of flow.

2.4 Flood Protection Measures

Flood protection measures for Oxford County have been compiled and are summarized below:

A small dam exists in Buckfield on the West Branch Nezinscot River just downstream of the State Route 140 bridge. This dam is an unregulated structure with negligible storage capacity and is not useful for flood control.

Much of the Androscoggin River, which flows through parts of Rumford, Bethel, Brownfield, Canton, Mexico, Dixfield, Peru and Andover, is controlled by large storage dams at and upstream of Errol, New Hampshire, approximately 60 miles upstream of the Town of Bethel. There are large headwater reservoirs including Rangeley, Mooselookmeguntic, Richardson, Aziscohos, and Umbagog Lakes. Their combined usable capacity is 28.1 billion cubic feet, which significantly affects the flow of the Androscoggin River (Reference 9). During flood events, the 1,045 mi2 of drainage area upstream of Errol can be extensively controlled. There are no existing or planned flood protection structures in these towns.

When flooding from the Androscoggin River occurs in these areas, emergency teams from nearby towns alert and assist the residents who may be isolated by flood waters (Reference 15).

Today, Oxford County is taking steps to improve water level monitoring in the Androscoggin River. A water-monitoring sensor was installed August of 2006 next to the recreational bridge in Bethel, and similar devices are being installed in Canton and Rumford. The electronic device will automatically alert the Oxford County Regional Communications Center in South Paris if the water rises to a set level indicative of flooding. After the initial alert, the sensor will provide continuous information on water levels. The funding for the monitors is provided through a federal grant.

The bog areas upstream of and within the Towns of Brownfield, Denmark and Fryeburg on the Saco River act as natural flood retarding basins for areas downstream by reducing the peak discharge in those areas. The Town of Lovell, specifically Kezar Lake, benefits from this (Reference 16). There are no structural flood protection measures existing or proposed in Denmark, Fryeburg, or Lovell. Nonstructural measures of flood protection in the Towns of Denmark and Fryeburg are being utilized to aid in the prevention of future flood damage. These are in the form of land use regulations adopted from the Saco River Corridor Commission established in 1973 by State Law. These land use regulations control building within areas that have a high risk of flooding. More detail is provided below.

The greatest flood protection measure afforded in the Towns of Hiram and Porter along the Ossipee River are the relatively steep banks which tend to contain the flood flows. The Hiram Falls Dam located below Hiram on the Saco River reduces flood peaks by providing storage upstream. In the headwaters of the Ossipee River, Ossipee Lake acts as a natural flood retarding basin reducing the peak discharge in the towns. The bog areas upstream of Hiram Falls Dam on the Saco River also act as a flood storage basin and reduce the peak discharge below the dam. Nonstructural measures of flood protection are also being utilized in Hiram and Porter. The land use regulation law mentioned above also includes the Ossipee River from the New Hampshire border to the confluence with the Saco River. The corridor encompasses the land adjacent to the other river to a distance of 500 feet measured from the normal high-water line or to the edge of the 1-percent annual chance flood plain, if that extends beyond 500 feet, up to a maximum of 1000 feet. The area within the corridor is subjected to flood plain management plans adopted to control development of the flood plain area (Reference 13). There are no structural flood protection measures scheduled for construction in the near future for either Hiram or Porter.

There are several dams on the Little Androscoggin River, a river that passes through the Towns of Norway, Paris, Oxford, and West Paris. The dams are used primarily for low-head hydropower production. These dams, such as Billings Dam in Paris, do not create significant storage and are not useful for flood control. Flood protection measures include flood warning and forecasting by the National Weather Service and flood control, emergency evacuation plans led by community volunteers (Reference 5), and some local structural controls in the Town of Oxford (Reference 10).

As a response to increasing development pressure, the Mandatory Shoreland Zoning Act, 38 M.R.S.A., Section 435-449, was first adopted by the State of Maine in 1971 and was amended February 14, 1990, July 14, 1992, August 7, 1994, and February 6, 1999. It requires all municipalities to adopt, administer, and enforce ordinances which regulate land use activities within 250 feet of great ponds, rivers, freshwater and coastal wetlands, and tidal waters; and within 75 feet of steams as defined. The Act also requires the Board of Environmental Protection to establish minimum guidelines for such ordinances. The Act requires that municipalities adopt shoreland zoning ordinances consistent with, or no less stringent than, those minimum guidelines. (Reference 17).

After the 1936 flood, a flood wall was built on the west side of the Island in the Town of Rumford where the business section is located. This wall prevents erosion and protects the commercial section from high flows. The Middle Canal’s headgate dam is high enough to also offer flood protection to the town. This structure diverts floodwaters down the main channel of the Androscoggin River. The Town of Rumford has zoned the 1-percent annual chance floodplain along the Androscoggin and Swift Rivers (as determined by the October 1973 FHBMs published by the U.S. Department of Housing and Urban Development) as a resource protection zone (Reference 18). This zone varies in width from 250 feet to over 2500 feet and meets or exceeds the minimum width required by the State of Maine Shoreland Zoning Act. Future housing development in this resource protection zone will be allowed only by variance. The 250-foot resource protection zone is also in effect for the floodplains of the Ellis and Concord Rivers, Barker Brook, Davis and Joes Ponds, and Mount Zircon Reservoir.

There are no flood protection structures existing at this time which affect flooding in the Towns of Andover, Newry, Otisfield, Waterford, Hartford, West Paris, or Dixfield.

3.0 ENGINEERING METHODS

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

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied by detailed methods affecting the county.

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

Precountywide Analyses

Flood discharges for the Ellis River, West Branch Ellis River, Crooked River, Kedar Brook, and Pappoose Pond were computed from an analysis of stream hydraulics, soil cover, land use, and rainfall data using the SCS TR-20 hydraulic evaluation model (References 19, 20, and 21). The Kedar Brook-Keoka Lake portion of the model was revised.

Hydrologic analyses for Sunday River, Alder River, Pleasant River, Mill Brook, Kendall Brook, Twitchell Brook, and Sanding Brook were also generated from SRS TR-20 and were checked against the USGS regression equation for Maine (References 21 and 24).

Information obtained from a power plant was the principal source of data for stage-discharge relationships and for defining discharge-frequency relationships for the Androscoggin River. These records were furnished by the Boise-Cascade Paper Company from discharge computed through wheels and over the dam. They covered the period from May 1892 to September 1976 and were published by the USGS under station 01054500, Androscoggin River at Rumford, Maine (Reference 9). The precountywide Rumford study reported peak flow data for the Androscoggin River at the Rumford-Peru corporate limits. Values for the 10-, 2-, 1-, and 0.2-percent annual chance flood peak discharges for the Androscoggin River in Rumford were obtained from a log-Pearson Type III distribution of annual peak flow data furnished by the Boise-Cascade Paper Company (Reference 24). The peak flows for the Androscoggin River at the Rumford-Peru corporate limits were computed by adding the expected contribution of flow from the Swift River to the peak flow values for Rumford.

As of 1997, the USGS stream gauging stations at Gorham, New Hampshire (No. 0105400), with a drainage area of 1,361 mi2, and Rumford, Maine (No. 01054500), with a drainage area of 2,068 mi2, continue to provide peak-flow data used to determine flood discharges for the Androscoggin River. The period of record at these stations are 79 and 100 years, respectively (Reference 9). Recurrence intervals at these sites were determined using a log-Pearson Type III analysis of minimal peak flow data (Reference 24). Peak discharges for the Androscoggin River at intermediate sites were established by adjusting the peak discharges computed for the gages using a formula with variables such as discharge and drainage areas at an intermediate site, discharge and drainage areas for the gaging stations, and an exponent that is determined based on regional analysis done by USGS.

Peak discharges for the Androscoggin River at the Canton-Jay corporate limits were established by adjusting the peak discharges reported for the Town of Rumford, and the Town of Lewiston in Androscoggin County. The precountywide Lewiston FIS reported peak flow data for the Androscoggin River upstream of the confluence of the Little Androscoggin River. These values were determined in part from a log-Pearson Type III distribution of annual peak flow data from the USGS gauging station on the Androscoggin River near Auburn (Reference 24). The Little Androscoggin River's expected contribution for flow were subtracted from the peak flow values of the Androscoggin River at Auburn. These discharge records covered the period from October 1928 to October 1976 and were published by the USGS as station No. 01059000 (Reference 9). Flood flows computed were updated using data at USGS station No. 01054500 and No. 01059000 for the period up to and including the April 1987 flood (Reference 25). The revised flood flows fell within the 90-percent confidence interval of discharges determined.

The USGS has also maintained a gage on the Swift River at Roxbury since 1929, and has kept systematic records of stage and discharge. These are published in the annual Water Resources Data for Maine (Reference 9) for the period June 1929 to September 1976 under Station 01055000, Swift River near Roxbury, Maine.

The following data was computed using U.S. Geological Survey Open-File Report 75-292, "A Technique for Estimating the Magnitude and Frequency of Floods in Maine", which is a regional method based on regression analysis:

- Flood discharges for streams in Denmark, not including the Saco River.

- Flood discharges for Hancock Brook and Ridlon Brook-Spectacle Ponds Brook in Hiram (Reference 23).

- Flood discharges for Whitney Brook and for areas studied by approximate methods in Canton (Reference 23)

- Frequency data for the small un-gaged streams in Rumford (Reference 23).

- Peak discharges for Worthley Pond at its outlet in Peru (Reference 26). Flood elevations for Worthley Pond are controlled by the channel and the Worthley Pond Road bridge at the outlet of the pond.

- Peak discharges for the selected recurrence intervals on the Shepards River in Brownfield. (Reference 23).

- Flood discharges for Thompson Lake Outlet and areas of approximate study in Oxford (Reference 23).

- Peak discharges for the East and West Branches Nezinscot River in Buckfield (Reference 23). The discharges computed using the regression equations from the

Open-File Report 75-292 technique were multiplied by a coefficient of 1.26 to determine the final peak discharge. This coefficient was determined by applying the regression equation at the Turner Center gage and comparing the results to those from the log-Pearson Type III analysis for the remainder of the Nezinscot River basin. The coefficient is the ratio of the log-Pearson result to the regression equation result. Regression estimates on the East and West Branches Nezinscot River were adjusted by the coefficient of 1.26 in order to provide consistency between the different hydrologic methods used on the Nezinscot River basin.

- Flood discharges for Pennesseewassee Stream, Bird Brook, and areas of approximate study in Norway (Reference 23).

- Flood discharges for Stony Brook and areas of approximate study in Paris.

The USGS Open-File Report 75-292 method relates drainage area, channel slope, and percent area of storage to the peak discharge by empirical equations (Reference 23):

A discharge-frequency relationship to represent the hydrology of the Saco River in Conway, New Hampshire was developed by the U.S. Department of Agriculture, SCS using their Project Formulation Program TR-20 (Reference 21). The values of the 10-, 2-, 1-, and 0.2-percent annual chance floods were found to be in excellent agreement with those obtained from a log-Pearson Type III (Reference 26) distribution of annual peak flows at the USGS gauging station (no. 01064500) at Conway having 72 years of record. A USGS gage (no. 01066000) located at Cornish, Maine, on the Saco River was used to establish the peak discharge-frequency relationship at this location. These discharges are based on statistical analysis of discharge records covering a 60-year period (Reference 27). Values of the 10-, 2-, 1-, and 0.2-percent annual chance flood peak discharges were obtained from a log-Pearson Type III distribution of annual peak flow data in accordance with the U.S. Water Resources Council Bulletin No. 17 (Reference 23 and 26).

A discharge-drainage area relationship was used to prorate the Saco River flood flows upstream to the Route 160 bridge in Brownfield (Reference 28). It was found that Saco River experiences decreases in downstream peak discharges. This occurs due to the overbank storage effects of the bog and lowland area adjacent to the Saco River in the Towns of Fryeburg and Brownfield, upstream of Route 160. Due to the large storage capacity of this area, the flood stages are related to both the peak and the shape or volume of the flood hydrograph. The flood hydrographs, at Swan Falls Dam in Fryeburg, were developed by the SCS. They were routed and combined with tributary inflow hydrographs utilizing the USACE HEC-1 Flood Hydrograph computer program (Reference 29). This routing procedure was utilized for the Saco River from Swan Falls Dam in Fryeburg (Reference 20 and 29) downstream to the Route 160 bridge in Brownfield. A result of this routing is the peak discharges at each valley cross section.

The peak stage-frequency relationship for Kezar Lake is controlled by flooding along the Saco River and the Old Course Saco River in Fryeburg. The 1-percent annual chance flood elevation for the Saco River and the Old Course Saco River at its confluence with Kezar Lake Outlet Stream was determined in the precountywide FIS for the Town of Fryeburg (Reference 16). The elevation determined in that study was used as the 1-percent annual chance flood elevation for Kezar Lake. The peak flood discharges determined in the Fryeburg study were translated to stage-discharge relationships using the UASCE HEC-2 computer program (Reference 29). The stillwater elevation for Kezar Lake was found to be compatible with historic high-water information available from local residents.

The 1-percent annual chance flood frequency inflow discharges for Lake Anasagunticook, Bear Pond, and Little Bear Pond in Hartford were determined from an equation based on multiple-regression analyses of data from USGS gaging stations in Maine and adjacent areas of New Hampshire (Reference 23). The equation contains the independent variables basin drainage area, main-channel slope, and lake/pond area. Inflow hydrographs to Lake Anasagunticook, Bear Pond, and Little Bear Pond were determined using the 1-percent annual chance peak discharge (Reference 30).

Synthetic hydrographs for the Webb River in Dixfield were developed for various frequency floods and routed through the study area utilizing SCS procedures (Reference 31). Flood flows for the various frequencies were computed from stream hydraulics, soil cover, land use, and National Oceanic and Atmospheric Administration rainfall data using the SCS TR-20 computer program (Reference 19). For the 2001 Dixfield revision, the NRCS used routine manual or computer aided computations for subwatershed times of concentration and flood routing reach lengths were made with the aid of topographic maps (Reference 32). NRCS developed composite runoff curve numbers based on existing land use. NRCS used the TR-20 hydrologic evaluation model to compute discharge on each Dixfield stream studied in detail.

The 1-percent annual chance discharge for Sunday River and Barkers Brook in Newry were determined with a USGS regression equation (Reference 33) using drainage area and percentage wetlands as inputs. Drainage area was determined from "Drainage Areas of Surface Water Bodies in the Androscoggin River Basin in southwestern Maine" (Reference 34) in combination with digitization of the USGS 7.5-Minute Series Topographic Maps. The percentage of wetlands was calculated off Wetland Inventory maps with a grid sampling method outlined in Water Resources Investigations Report 99-4008 (Reference 33). The discharge was calculated for Sunday River where it crosses the Newry/Bethel corporate limits and for Barkers Brook at the confluence with Sunday River. Drainage area adjustments provided 1-percent annual chance discharges for two upstream locations on Barkers Brook and three upstream locations on Sunday River according to a USGS drainage area equation (Reference 23).

The primary sources of peak-flow data used to determine discharges for the Little Androscoggin River in Norway, Paris, West Paris and Oxford were streamflow records from the USGS stream gaging stations near South Paris (station 01057000, drainage area 75.8 mi2) and at Auburn (station 01058500, drainage area 328 mi2) (Reference 9). The periods of record at these stations were 65 and 43 years, respectively. Peak discharges were developed for these stations by a log-Pearson Type III analysis of annual peak flow data (Reference 24). Peak discharges for the Little Androscoggin River at intermediate sites in the towns were established by adjusting the peak discharges computed for either the South Paris or Auburn gages using a formula specific to each intermediate site.

The analysis of Thompson Lake was based on a log-Pearson Type III distribution of annual peak elevation data (Reference 24). The principal sources of data for Thompson Lake were records of lake elevations maintained by Robinson Manufacturing Company for the period from 1890 to 1985. Part of the log-Pearson Type III analysis involves the calculation of the sample standard deviation. Tasker and Gilroy 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 (Reference 35). To account for this potential bias, Tasker and Gilroy published a table of correction factors based on serial correlation and sample size. The Thompson Lake data have a lag-one serial correlation coefficient of 0.226. Based on the correlation coefficient of 0.226 and 96 years of record, the sample standard deviation should be adjusted by 1.00531. This adjustment had no effect on the stillwater elevations computed for Thompson Lake.

Two U.S. Geological Survey gages on the Ossipee River were used to establish the peak discharge-frequency relationships. The gage located at Effingham Falls, New Hampshire, has 34 years of record, and the gage located at Cornish, Maine, has 60 years of record (Reference 14). Values of the 10-, 50-, 100-, and 500-year peak discharges were obtained from a log-Pearson Type III distribution of annual peak flow data in accordance with the U.S. Water Resources Council Bulletin 17 (Reference 26). Peak flows for other locations on the Ossipee River were computed utilizing a drainage area poration method (Reference 28). The method utilized was:

$$Q_{site} = Q_{gage} (A_{site}/A_{gage})\ n$$

The value of n applied to the Ossipee River was 0.8. This value was based upon the analysis of peak discharges at the two gages cited above.

Regression equations published by the U.S. Geological Survey (Reference 23) were used to establish the peak discharge-frequency relationships for Mill Brook and Spectacle Ponds Brook in Porter.

Analysis for this Countywide Revision

The 10-, 2-, 1-, and 0.2-percent annual chance flood flows for Barkers Brook, Hancock Brook, Barkers Pond, Crooked River, Moose Pond, Saturday Pond, Stony Brook, and Twitchell Brook were computed with regression equations (Reference 36). The regression equations use drainage area and percent wetlands as explanatory variables. All drainage areas were determined using a Watershed Information System (WISE) (Reference 37) and a Geographic Information System (GIS). Basin wetlands were computed with U.S. Fish and Wildlife Service National Wetland Inventory maps at a scale of 1:24:000 with GIS.

Peak discharge-drainage area relationships for flooding sources in Oxford County are shown in Table 7, “Summary of Discharges”.

TABLE 7 – SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Alder River					
At State Route 26	29.0	2,100	3,900	4,900	7,200
At Rabbit Road	11.9	500	900	1,200	1,600
Androscoggin River					
At downstream Bethel corporate limit	1,834.0	32,700	45,000	50,500	64,500
At downstream Canton corporate limits	2,470.0	52,600	73,800	85,200	113,000
At U.S. Route 2 (State Routes 5 & 26)	1,680.0	28,100	38,000	42,400	53,400
At upstream Bethel corporate limits	1,629.0	26,500	35,600	39,600	49,500
At Riley Dam	2,466.0	*	*	85,200	*
Upstream of the confluence of Spears Stream	2,336.0	*	*	81,500	*
At Rumford-Peru town line	2,210.0	51,000	68,600	78,000	98,600
Above confluence with Swift River	2,070.0	40,300	55,400	62,500	80,000
Upstream of confluence of Webb River	2,204.0	*	*	78,000	*
Above confluence with Ellis River	1,870.0	34,300	47,700	53,900	69,400
Aunt Hannah Brook					
At Weld Road	5.2	505	970	1,175	1,695
Barkers Brook					
At confluence with Sunday River	3.4	*	*	1,035	*
Approximately 5280 feet upstream from confluence with Sunday River	2.6	*	*	831	*
Above confluence of South Barkers Brook	0.6	*	*	271	*

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Barkers Brook-continued					
At approximately 2,300 feet downstream from Cushing Road bridge	11.2	1,200	1,884	2,211	3,048
At approximately 2,600 feet upstream from Cushing Road bridge	7.8	830	1,320	1,555	2,160
Barkers Pond					
At Outlet to Hancock Brook	18.5	264	391	549	643
Bird Brook					
At confluence of Pennesseewassee Stream	7.4	380	620	750	1,130
Butterfield Brook					
At confluence with Sevenmile Stream	1.5	305	590	735	1,035
Crooked River					
At Scribner's Mill	107.6	6,200	9,700	11,200	14,500
At the downstream Waterford corporate limits	88.6	6,300	9,700	11,200	14,500
At State Route 118	75.8	5,940	8,890	10,530	14,000
At Hunts Corner Road	60.6	5,400	8,110	9,610	13,000
At Private Road	44.5	4,810	7,290	8,650	11,520
At approximately 800 feet downstream from Harrison Road bridge	97.0	4,900	7,110	8,140	10,600
At approximately 750 feet downstream from Scribner's Mill bridge	108.3	5,430	7,870	8,990	11,800
East Branch Nezinscot River					
At confluence with Nezinscot River	43.3	*	*	4,400	*

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Ellis River					
At the downstream Andover corporate limits	139.0	10,600	16,800	19,800	27,400
At the confluence of the West Branch	122.7	11,100	17,600	20,700	28,900
At the bridge at East Andover	65.4	4,300	6,500	7,500	9,900
Hancock Brook					
At confluence with Saco River	22.2	797	1,150	1,320	1,720
At approximately 2,450 feet upstream from Sebago Road Bridge	18.8	604	870	994	1,290
Harvey Brook					
At Canton Point Road	4.2	605	1,085	1,285	1,795
Hugh Brook					
At confluence with Sevenmile Stream	3.2	590	1,130	1,380	1,970
Kedar Brook					
At State Route 37	2.3	810	1,310	1,520	1,990
Kendall Brook					
At confluence with Alder River	9.0	1,300	2,400	2,900	4,200
At upstream Bethel corporate limits	4.9	800	1,500	1,800	2,600
Little Androscoggin River					
At State Route 26 Bridge (in Oxford)	142.0	5,520	8,720	10,300	14,800
Upstream from Pennesseewassee Stream	110.0	5,050	7,930	9,370	13,300

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Little Androscoggin River – continued					
Upstream of confluence of Waterhouse Brook	231.0	6,540	10,400	12,400	18,200
At State Route 26 Bridge (In Village of Welchville)	216.0	6,390	10,200	12,100	17,700
Upstream of confluence of Thompson Lake outlet	152.0	5,650	8,940	10,600	15,300
At State Route 26 Bridge (in Town of Oxford)	142.0	5,520	8,720	10,300	14,800
Upstream from State Route 26 in Oxford	142.0	5,520	8,720	10,300	14,800
Upstream from confluence of Pennesseewassee Brook	110.0	5,050	7,930	9,370	13,300
Upstream from confluence of Stony Brook	93.6	4,770	7,470	8,810	12,500
Upstream from confluence of Cole Brook	77.4	4,460	6,960	8,190	11,500
At West Paris-South Paris corporate Limits	75.8	*	*	6,540	*
At USGS gaging station at Snow Falls	73.5	*	*	6,540	*
Upstream of confluence of Moose Brook	57.5	*	*	5,370	*
Upstream of confluence of Andrews Brook	41.0	*	*	4,100	*
At West Paris-Greenwood corporate Limits	39.5	*	*	4,000	*
Mill Brook					
At U.S. Route 2	9.4	600	1,200	1,500	2,200
At State Route 5	9.0	600	1,200	1,500	2,100
At Confluence with Ossipee River	14.1	730	1,190	1,445	2,165

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Newton Brook					
At Canton Point Road	10.6	830	1,610	1,955	2,860
At Porter Road	9.6	830	1,590	1,930	2,805
At U.S. Rt. 2/State Rt. 17	9.4	830	1,585	1,920	2,795
At Private Road No. 1	7.3	825	1,545	1,860	2,670
At Private Road No. 2	5.1	815	1,485	1,770	2,495
At Private Road No. 3	4.7	815	1,475	1,750	2,455
At Norton Road	4.4	815	1,465	1,740	2,430
Nezinscot River					
At Buckfield-Turner corporate limits	115.0	*	*	10,000	*
Upstream from Bog Brook	104.0	*	*	9,220	*
Old Course Saco River					
At confluence with Saco River	137.0	2,700	4,000	4,800	6,450
Ossipee River					
Cornish Gage (No. 01065500)	453.0	7,840	11,760	13,690	18,890
At Corporate Limits	412.0	7,265	10,900	12,960	17,510
Upstream of Mill Brook	387.5	6,920	10,380	12,080	16,670
Upstream of South River	354.0	6,435	9,655	11,240	15,510
Paddy Meadow Brook					
At Weld Road	0.9	175	305	355	490
Pennesseewassee Stream					
At confluence with Little Androscoggin River	30.6	900	1,370	1,620	2,300
Upstream from Bird Brook	22.5	630	970	1,140	1,620
Pleasant River					
At U.S. Route 2	24.4	2,000	4,100	5,100	7,400

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Potash Brook					
At confluence with Sevenmile Stream	0.8	120	245	305	445
Ridlon Brook-Spectacle Ponds Brook					
At confluence with Ossipee River	12.0	590	960	1,160	1,735
Saco River					
At Conway Gage	386.0	29,750	45,840	53,645	72,180
At upstream Brownfield corporate limits	662.0	16,500	23,400	28,000	39,200
At upstream Denmark corporate limits	740.0	16,160	23,675	27,290	36,825
At downstream Brownfield corporate limits	700.0	16,160	23,675	27,290	36,825
At Hiram corporate limits	843.0	16,160	23,675	27,290	36,825
Sanding Brook					
At intersection of State Route 26 and Main Street	0.3	190	290	330	420
At Main Street	0.2	100	170	190	250
Sevenmile Stream					
At Severy Hill Road	15.6	2,200	4,355	5,370	7,810
At Church Street	13.0	1,965	3,850	4,745	6,870
At U.S. Rt. 2/State Rt. 17 (Dixfield)	8.7	1,365	2,650	3,250	4,690
At U.S. Rt. 2/State Rt. 17 (Dixfield)	8.6	1,375	2,650	3,250	4,675
At Private Drive	7.1	1,245	2,355	2,875	4,090
Shepards River					
At confluence of Saco River	28.0	2,110	3,525	4,280	6,525

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Spectacle Ponds Brook					
At confluence with Ossipee River	12.0	590	960	1,160	1,735
At confluence with Ridlon Brook	6.0	340	570	695	1,080
Stony Brook					
At approximately 0.3 mile downstream from Christian Road bridge	7.2	920	1,480	1,740	2,430
At approximately 0.3 mile downstream from Buckfield Road bridge	9.4	1,130	1,800	2,120	2,940
At confluence with Little Androscoggin River	14.8	1,310	2,250	2,760	4,270
Upstream from confluence of Twitchell Brook	11.4	1,040	1,800	2,210	3,440
Sunday River					
At U.S. Route 2 (State Routes 5 & 26)	41.7	3,400	6,600	7,900	11,000
At Newry/Bethel corporate limits	50.0	*	*	7,270	*
Above confluence of Barkers Brook	46.7	*	*	6,880	*
Above confluence of Simmons Brook	37.9	*	*	5,820	*
Above confluence of Merrill Brook	33.5	*	*	5,280	*
Swift River					
At confluence with Androscoggin River	124.0	14,600	24,400	29,500	43,800

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Thompson Lake Outlet					
At confluence with Little Androscoggin River	47.7	1,250	1,880	2,200	3,070
Tucker Valley Brook					
At Valley Brook Road	3.3	625	1,160	1,410	1,995
At Point Morse Hill Road	2.5	585	1,045	1,255	1,740
Twitchell Brook					
At U.S. Route 2 (State Routes 5 & 26)	1.9	400	670	780	1,030
At approximately 1.0 mile upstream from confluence with Stony Brook	2.5	287	461	545	763
At confluence with Stony Brook	3.1	349	559	661	923
Webb River					
At confluence with Androscoggin River	133.0	4,510	6,800	7,800	10,000
At upstream Dixfield corporate limits	116.0	3,780	5,760	6,620	8,600
West Branch Ellis River					
At its confluence with Ellis River	54.2	6,500	10,800	12,900	18,400
At a point 1,700 feet upstream of the confluence of Stony Brook	26.5	4,900	7,600	8,900	12,000
West Branch Nezinscot River					
At confluence with the Nezinscot River	55.8	*	*	5,370	*
At Paris Hill Road	45.2	*	*	5,070	*
Upstream from Darnit Brook	29.7	*	*	3,620	*

*Data not computed

TABLE 7 – SUMMARY OF DISCHARGES (continued)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQUARE MILES)	PEAK DISCHARGES (CUBIC FEET PER SECOND) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Whitney Brook					
At confluence with Androscoggin River	23.7	1,060	1,700	2,030	2,980
Above confluence of Childs Brook	15.1	710	1,150	1,380	2,050

*Data not computed

A summary of peak elevation-frequency relationships for Barkers Pond, Moose Pond, and Saturday Pond is shown in Table 8, "Summary of Stillwater Elevations".

TABLE 8 – SUMMARY OF STILLWATER ELEVATIONS

FLOODING SOURCE	ELEVATION (FEET NAVD) 10-PERCENT ANNUAL CHANCE	2-PERCENT ANNUAL CHANCE	1-PERCENT ANNUAL CHANCE	0.2-PERCENT ANNUAL CHANCE
Barkers Pond	--	--	497	--
Moose Pond	--	--	524	--
Saturday Pond	--	--	533	--

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. Flood profiles were drawn showing the computed water-surface elevations for floods of the selected recurrence intervals. Users should be aware that some 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.

Cross section data for the below-water sections were obtained from field surveys. Cross sections were located at close intervals above and below bridges, culverts, and dams in order to compute the significant backwater effects of these structures. In addition, cross sections were taken between hydraulic controls whenever warranted by topographic changes.

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 FIRM (Exhibit 2).

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

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

Precountywide Analyses

All cross sections, bridges and culverts were surveyed to obtain elevation data, structural data, and structural geometry. Cross sections were selected immediately below changes in stream configuration. Roughness coefficients (Manning's "n") were determined by field inspection at each cross section using a step-by-step procedure. Where feasible, transposed cross sections were used to reduce the number of surveyed cross sections. Transposed cross sections are surveyed sections which can be transferred either upstream or downstream to represent a location which is similar in valley shape.

All elevations from the precountywide analyses were referenced from National Geodetic Vertical Datum of 1929 (NGVD).

In the Town of Andover, topographic data were obtained from surveyed valley and bridge cross sections and from USGS topographic maps (Reference 32 and 38). Water-surface elevations of floods of the selected recurrence intervals were calculated using the SCS WSP-2 computer program (Reference 39).

Starting water-surface elevations for the Ellis River, in the Town of Andover, were determined from an estimated 2-year frequency elevation on the Androscoggin River. Starting water-surface elevations for the West Branch Ellis River were determined from calculated water-surface elevations on the Ellis River at the confluence of the West Branch Ellis River. In the area east of State Route 5, between Sawyer Brook and the West Branch Ellis River, the locations of base flood elevations were approximated using USGS topographic maps and engineering judgment (Reference 32 and 38). Flood profiles were drawn to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

In Rumford, although the Ellis River was designated an approximate study area, USGS ran the step-backwater program using cross section and bridge data available from the then recent Flood Hazard Analyses for the Ellis River, performed by the U.S. SCS (Reference 40). Since the 1-percent annual chance flood elevations determined by the USGS were in close agreement with those published by the SCS, these elevations were used for the approximate study on the Ellis River.

For all other streams and ponds studied by approximate methods in Rumford, the 1-percent annual chance flood elevations were determined using a regional stage-frequency method developed by the Maine office of the USGS in 1972. Frequency analysis of stream gauging station records throughout the state showed the rise in stage caused by the 1-percent annual chance flood to be approximately 10 feet above the water-surface elevation shown on the Geological Survey maps. The rise on lakes, ponds, and swamps was estimated to be 5 feet above the mapped elevations. Elevations determined by adding 5 and 10 feet to the mapped elevations were modified where appropriate by engineering judgment.

In Bethel, water-surface elevations of floods of the selected recurrence intervals for the streams studied by detailed methods (not including Androscoggin River) were computed using the SCS WSP-2 computer program (Reference 39). Starting water-surface elevations for the Sunday River, the Pleasant River, the Alder River, Mill Brook, Twitchell Brook, and Sanding Brook were determined from given slopes; and for Kendall Brook, starting water-surface elevations were determined from given elevations at its confluence with the Alder River.

In the May 2, 1991, Town of Bethel FIS, cross section data for the Androscoggin River were obtained from aerial photographs (Reference 41). In the 1997 Town of Bethel FIS revision, cross-section data for the Androscoggin River were determined using two sources. First, cross sections from the original model were used. Second, additional cross-sections were added to the model, which were obtained from field surveys. The U.S. Route 2 Bridge was also surveyed to obtain elevation data and structural geometry.

For the Androscoggin River from confluence with the Swift River to the Hanover-Bethel-Rumford corporate limits, and for the Swift and Web River in Mexico, the cross sections were obtained by photogrammetry from aerial photographs (Reference 42).

Cross sectional data on the Androscoggin River from the Peru-Rumford corporate limits to confluence with the Swift River, and on the Swift River, from confluence with Androscoggin River to just above Scotty Brook at the Rumford-Mexico corporate limits, were obtained from the precountywide FIS for the Town of Mexico (Reference 43). These cross sections were field checked for shape and elevations and used in the step-backwater computations for flood elevations.

Water-surface elevations of floods of selected recurrence intervals along the Androscoggin River in the Town of Bethel were originally computed using the SCS WSP-2 computer program (Reference 39). In the 1997 Town of Bethel revision, water-surface elevations were computed using the Federal Highway Administration's WSPRO step-backwater computer program (Reference 44, 45, and 46). Results from the step-backwater modeling were compared to historic data available from the 1936 and 1987 floods as part of the calibration process (Reference 6 and 7). There is agreement between the historic and computed data.

Water-surface profiles for the Androscoggin River in Rumford and Mexico, as well as for the Swift River in Mexico, were developed using the U.S. Geological Survey step-backwater computer program E431 (Reference 26). On the reach of the Androscoggin River near Rumford Falls where critical flow was encountered, a new version of this program called J635 was used (Reference 47). This backwater model was calibrated using profile information available for the 1936 flood (Reference 6). The Swift River water-surface profiles also used E431.

In Canton, the overbank portions of the cross-section data for the Androscoggin River and Whitney Brook were obtained from topographic maps compiled from aerial photographs (Reference 48). Data for Riley Dam were provided by International Paper Company. The channel distances given on the E431 computer printout for Whitney Brook are based on the hydraulic flow distance, and therefore, may not agree with the reference distances on the profiles, maps, and tables. Water-surface elevations of floods of the selected recurrence intervals were computed using the USGS E431 step-backwater computer program (Reference 49 and 50). Starting water-surface elevations for the

Androscoggin River at Riley Dam were computed by using standard, flow over broad-crested weir formulas (Reference 50). Starting water-surface elevations for Whitney Brood were determined using normal depth calculations. Starting water-surface calculations and flood profiles were verified by comparison with historic flood data from the 1936 and 1987 floods (Reference 6 and 25). The Town of Peru FIS used this as their starting water-surface elevation data at the Peru/Canton corporate limits.

For the Swift and Webb Rivers in the Town of Mexico, the starting surface elevations were determined from the backwater elevation on the Androscoggin River. Flood profiles for the Webb River were determined using the computer program "HEC-2 Water Surface Profiles" developed by the U.S. Army Corps of Engineers (References 51).

Cross section data for the detailed study areas in Brownfield were obtained from photogrammetric maps (Reference 52). The acceptability of all assumed hydraulic factors, cross sections, and hydraulic structure data was checked by computations that approximated historic floodwater profiles. Water-surface elevations of floods of the selected recurrence intervals on the Shepards River were computed through the use of the USACE HEC-2 step-backwater computer program (Reference 53). A slope-area computation was used to determine the starting water-surface elevations.

Water-surface elevations for Saco River in Brownfield were determined by using HEC-1 and HEC-2 (Reference 29 and 53). Starting water-surface elevations for the Saco River were determined by the slope-area method. Using data from the field surveys and topographic maps, stage-storage relationships at selected valley cross sections on the Saco River were computed. The stage-discharge relationships were developed by computing water-surface profiles for various frequency storms. The USACE HEC-2 computer program (Reference 53) was used to compute the stage-discharge relationship. The combination of these two relationships, a storage discharge curve, was used in HEC-1 (Reference 29) to route the flood hydrographs through each reach. The routed peak discharge for the selected recurrence interval was then translated into an elevation at each cross section. Flood profiles were drawn to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

In Buckfield, cross sections and geometry of hydraulic structures were obtained from field surveys conducted during the 1990 field season by the USGS. Cross section extensions were based on information contained on USGS topographic maps (Reference 32 and 54). The 1-percent annual chance flood elevations for the streams studied in detail were computed by applying the WSPRO step-backwater computer model (Reference 45 and 55). Flood profiles were drawn showing computed water-surface elevations for the 1-percent annual chance flood. The starting water-surface elevation for the Nezinscot River was determined from a step-backwater analysis beginning at the dam in the Town of Turner (part of Androscoggin County). The water-surface elevation at the dam in Turner was determined using a critical depth computation. The starting water-surface elevations for the East and West Branches Nezinscot River were determined to be the elevation at the upstream limit of the Nezinscot River analysis. The starting water-surface elevation for the West Branch Nezinscot River above the Buckfield Dam was determined by applying the appropriate flow over weir equation documented in a USGS publication (Reference 50).

Cross section data for the detailed study areas in Denmark were obtained from photogrammetric maps (Reference 52). Starting water-surface elevations for all streams were calculated using the slope-area method. Flood elevations for the approximate study streams were obtained from the Flood Hazard Boundary Map (FHBM) (Reference 56). Water-surface elevations of floods of the selected recurrence intervals were computed through the use of the COE HEC-2 step-backwater computer program (Reference 57).

For Dixfield and Newry, 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 table. Cross sections for the flooding sources studied by detailed methods were obtained from field surveys. Water-surface elevations of floods of the selected recurrence intervals in Dixfield were computed using the NRCS Water Surface Profile 2 computer program. Water-surface elevations of floods in Newry were computed using HEC-RAS, a step-backwater program (Reference 58). Starting water-surface elevations were calculated using a normal depth computation based on the energy slope.

Cross-section data for the detailed study areas in Fryeburg were obtained from photogrammetric maps (Reference 52). All assumed hydraulic factors, cross sections, and hydraulic structure data were checked by computations that approximated historic floodwater profiles (Reference 26 and 59). Using data from the field surveys and photogrammetric maps, stage-storage relationships at selected valley cross sections on the Saco River and the Old Course Saco River were computed (Reference 52). The stage-discharge relationships were developed by computing water-surface profiles for various frequency storms. The USACE HEC-2 computer program was used to compute the stage-discharge relationship (Reference 51). The combination of these two relationships, a storage-discharge curve, was used in HEC-1 to route the flood hydrographs through each reach. The routed peak discharge for the selected recurrence interval was then translated into an elevation at each cross section. Flood profiles were drawn to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

Cross section data for the detailed study areas in Hiram were obtained from photogrammetric maps (Reference 52). The acceptability of all assumed hydraulic factors, cross sections, and hydraulic structure data was checked by computations that duplicated historic floodwater profiles. Starting water-surface elevations for the Saco and Ossipee Rivers, and Hancock Brook and Ridlon Brook-Spectacle Ponds Brook were calculated using the slope-area method. Water-surface elevations of floods of the selected recurrence intervals were computed through the use of USACE HEC-2 step-backwater computer program (Reference 57).

The 1-percent annual chance flood elevations for Lake Anasagunticook and Bear Pond in Hartford were determined from a reservoir routing analysis. The inflow hydrograph was routed through the water bodies using the modified Puls method (Reference 28). The starting elevations for the analyses were based on steady state, mean flow conditions.

In the Towns of Norway and Oxford, the overbank portions of the cross section data for the Little Androscoggin River, Pennesseewassee Stream, and Bird Brook were obtained from photogrammetric analyses and topographic maps compiled from aerial photographs (Reference 48). Water-surface elevations of floods of the selected recurrence intervals were computed using the USGS E431 step-backwater program (Reference 60).

Results from the step-backwater modeling on the Little Androscoggin River were compared to historic data available from the 1936 flood as part of the calibration process (Reference 61). Computed water-surface elevations were also compared to elevations of high water marks, obtained by the USGS, from the January 28, 1986 and April 1987 floods. The January 1986 flood had a recurrence interval of approximately 10 years at the South Paris USGS gaging station. Starting water-surface elevations for the Little Androscoggin River were taken from the precountywide Flood Insurance Study for the Town of Mechanic Falls in Androscoggin County (Reference 62). Starting water-surface elevations for Pennesseewassee Stream were determined using slope-conveyance methods. Staring water-surface elevations for Bird Brook were taken to be those for Pennesseewassee Stream at the confluence of Bird Brook. Timing of flood peaks on Pennesseewassee Stream and Bird Brook should be comparable.

Also in Oxford, starting water-surface elevations for Thompson Lake Outlet were determined using slope/conveyance methods (Reference 46).

In Paris, cross section data for the backwater analyses for the Little Androscoggin River and Stony Brook were developed from photogrammetric analyses and topographic maps compiled from aerial photography (Reference 45). Water-surface elevations of floods of the selected recurrence intervals were computed using the USGS E431 Step-Backwater Program, as described for Norway and Oxford (Reference 60). Results were also compared to historic data available, with the same results as above. Starting water-surface elevations at Billings Darn on the Little Androscoggin River were based on critical depth computations. The resultant elevations were compared to high-water marks available for the 1936 and 1987 floods (Reference 4). Starting water-surface elevations for Stony Brook were determined using slope-conveyance methods (Reference 46).

In West Paris, cross section data for the Little Androscoggin River were obtained from topographic maps at a scale of 1:24,000 with a contour interval of 20 feet (Reference 32). Water-surface elevations for the Little Androscoggin River were taken from profiles developed using a water-surface computation model (WSPRO) developed by the USGS for the Federal Highway Administration (Reference 45). The starting water-surface elevation used at the downstream corporate limits was determined by the slope/area method (Reference 46). The starting water-surface elevation used for the profile computations above Snow Falls was determined from the rating curve developed for the USGS gauging station located at the site.

In Otisfield, water-surface elevations for the selected recurrence intervals were computed by the SCS WSP-2 computer program (Reference 39). Starting water-surface elevations were taken from the precountywide Flood Insurance Study for Casco, Maine (in Cumberland County) (Reference 63). Cross-section data for the Crooked River were obtained from aerial photographs and field surveys (Reference 64). Flood profiles were drawn to an accuracy of 0.5 foot for floods of the selected recurrence intervals. The approximate areas were determined by using topographic maps (Reference 22), aerial photographs (Reference 64), and field checks to verify the boundaries in the Flood Hazard Boundary Map for Otisfield (Reference 65).

In Peru, cross section data used in the hydraulic analyses for Peru were obtained from field surveys. Because flood elevations for Worthley Pond are controlled by the channel and the Worthley Pond Road bridge at the outlet of the pond, the step-backwater model was used to study this area and determine the flood elevation for the pond (Reference 66). Starting water-surface elevations for Worthley Pond were based on slope-conveyance calculations. Starting water-surface calculations and flood profiles were verified by comparison to historical flood data from the 1936 and 1987 floods (References 25; Reference 6).

Cross section data for the detailed study areas in Porter were obtained from photogrammetric maps (Reference 52). Water-surface profiles were developed for the 10 - , 50-, 100-, and 500-year floods using the U.S. Army Corps of Engineers HEC-2 step-backwater computer program (Reference 51). The computer program was started using the slope-area method at the confluence of the Saco River and continued upstream. A trial-and-error procedure was employed to calibrate the program utilizing the 1936 flood of record on the Ossipee River (Reference 6). For both Mill Brook and Spectacle Ponds Brook, the computer program was started using the slope-area method. Flood profiles were drawn to an accuracy of 0.5 foot for floods of the selected recurrence intervals. For the streams studied by approximate methods, the elevations of the 1-percent annual chance flood were developed from normal depth calculations and topographic maps (Reference 32).

Water-surface elevations of floods of the selected recurrence intervals in Waterford were computed by the SCS WSP-2 computer program (Reference 39). Starting water-surface elevations for the Crooked River were \taken from the Flood Hazard Analyses for the Towns of Harrison (in Cumberland County) and Otisfield (Reference 22). Water-surface profiles for Kedar Brook were started from the Keoka Lake elevations. Cross sections for the Crooked River and Pappoose Pond were obtained from aerial photographs flown in November 1971 at a scale of 1"=800' (Reference 64). Cross sections for Kedar Brook and Keoka Lake were also obtained from field surveys. Flood profiles were drawn to an accuracy of 0.5 foot for floods of the selected recurrence intervals.

Analysis for this Countywide Revision

Cross sections for the flooding source studied by detailed methods were obtained from field surveys and supplemented by LIDAR data. 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 FIRM.

Water-surface elevations of floods of the selected recurrence intervals were computed using the USACE HEC-RAS 3.1.3 step-backwater computer program (Reference 67). The starting water surface elevations for the 10, 2-, 1- and 0.2-percent annual chance flood profiles at the mouth were calculated by the HEC-RAS normal depth computation routine and downstream water surface slopes estimated from channel survey data. Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

Roughness factors (Manning's "n" values) used in the hydraulic computations were determined from field observations, guided by U.S. Geological Water Supply Publications (Reference 68 and 69). Table 9, "Manning's "n" values" shows the channel and overbank "n" values for the streams studied by detailed methods:

TABLE 9 – MANNING'S "n" VALUES

Flooding Source	Channel "n"	Overbanks
Alder River	0.062-0.067	0.063-0.110
Androscoggin River	0.040-0.045	0.065-0.110
Androscoggin River (Canton)	0.050-0.055	0.050-0.120
Androscoggin River (Dixfield)	0.038-0.050	0.045-0.100
Androscoggin River (Mexico)	0.040-0.045	0.045-0.100
Aunt Hannah Brook	0.055	0.065-0.090
Barkers Brook (revised)	0.04	0.090-0.1
Barkers Pond Outlet (revised)	0.04-0.045	0.10-0.12
Bird Brook	0.035-0.060	0.060-0.140
Butterfield Brook	0.055-0.067	0.050-0.095
Crooked River	0.039-0.078	0.060-0.150
Crooked River	0.051-0.070	0.075-0.140
Crooked River (revised)	0.032-0.078	0.07-0.15
East Branch Nezinscot River	0.040-0.045	0.050-0.15
Ellis River	0.050-0.070	0.050-0.100
Hancock Brook (revised)	0.04-0.045	0.10-0.12
Harvey Brook	0.055-0.060	0.065-0.095
Hugh Brook	0.065-0.067	0.080-0.090
Kedar Brook	0.060-0.075	0.060-0.100
Kendall Brook	0.060-0.065	0.095-0.110
Little Androscoggin River	0.035-0.040	0.050-0.110
Little Androscoggin River (Oxford)	0.030-0.040	0.035-0.120
Little Androscoggin River (Paris)	0.030-0.060	0.045-0.130
Little Androscoggin River (West Paris)	0.030-0.045	0.035-0.130
Mill Brook	0.060-0.065	0.062-0.110
Mill Brook (Porter)	0.035-0.045	0.070-0.090
Moose Pond Outlet	0.045-0.06	0.09-0.15
Newton Brook	0.050-0.065	0.075-0.095
Nezinscot River	0.030-0.040	0.050-0.15
Old Course Saco River	0.04-0.045	0.08-0.10
Ossipee River	0.03-0.045	0.07-0.09
Paddy Meadow Brook	0.060	0.090
Pennesseewassee Stream	0.025-0.070	0.025-0.120
Pleasant River	0.062	0.070-0.110
Potash Brook	0.050-0.060	0.045-0.075
Ridlon Brook	0.035-0.045	0.07-0.09
Saco River	0.04-0.045	0.08-0.10
Saco River (Hiram)	0.04-0.045	0.09-0.10
Sanding Brook	0.062-0.067	0.055-0.085
Saturday Pond Outlet	0.05	0.15
Sevenmile Stream	0.050-0.067	0.045-0.095
Shepards River	0.045	0.09
Spectacle Ponds Brook	0.035-0.045	0.070-0.090

TABLE 9 – MANNING'S "n" VALUES (continued)

Flooding Source	Channel "n"	Overbanks
Stony Brook (revised)	0.045	0.055-0.09
Sunday River	0.060-0.063	0.065-0.110
Sunday River (Newry)	0.045-0.062	0.065-0.085
Swift River	0.035-0.070	0.040-0.120
Thompson Lake Outlet	0.033-0.038	0.040-0.100
Tucker Valley Brook	0.065-0.067	0.090-0.095
Twitchell Brook (revised)	0.045-0.065	0.09-0.11
Webb River	0.025-0.045	0.025-0.070
West Branch Ellis River	0.045-0.075	0.060-0.090
West Branch Nezinscot River	0.030-0.060	0.050-0.15
Whitney Brook	0.040-0.045	0.055-0.120
Worthley Pond	0.045-0.060	0.025-0.090

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

3.3 Vertical Datum

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

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD 88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. This can be done by applying a standard conversion factor. The Flood Profiles, and Base (1-percent annual chance) Flood Elevations (BFEs) in the precountywide FIS reports, are in NGVD. These were converted to NAVD by applying the conversion factor of -0.5 feet to each detailed study stream in the effective FIS reports (**NGVD – 0.5 ft. = NAVD**). 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. For information regarding conversion between the NGVD 29 and NAVD 88, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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

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 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.

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

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

4.1 Floodplain Boundaries

In order to provide a national standard without regional discrimination, the 1-percent-annual-chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance flood is employed to indicate additional areas of flood risk in the community.

For unrevised streams in Oxford County, data was taken from previously printed FISs for each individual community and are compiled below.

For each stream studied by detailed methods, the 1- and 0.2-percent-annual-chance floodplain boundaries have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 and 1:62,500, with a contour interval of 20 feet (Reference 38 and 54); at a scale of 1:24,000, with contour intervals of 10 and 20 feet (Reference 32); at a scale of 1:4,800, with a contour interval of four feet (Reference 48); at a scale of 1:4,800, with a contour interval of five feet (Reference 52); and at a scale of 1:24,000 enlarged to a scale of 1:12,000 with a contour interval of 20 feet (Reference 32).

Aerial photographs for the Town of Andover were also used to interpolate between cross sections.

For the Town of Waterford, in addition to using topographic maps, the boundaries were interpolated between cross sections using aerial photographs on flood plain maps at a scale of 1”=400’ with a contour interval of four feet (Reference 32, 38, and 70).

For the Towns of Brownfield, Denmark, and Hiram, the boundaries were interpolated between cross sections using photogrammetric maps at a scale at a scale of 1:4,800, with a contour interval of five feet (Reference 71).

For the Town of Rumford, the boundaries were interpolated between cross sections by plotting photogrammetrically using aerial photographs, at a scale of 1:6000, the flood boundaries along the Androscoggin River, from confluence with the Swift River to the Hanover-Bethel-Rumford corporate limits (Reference 42). At a scale of 1:4800 with a contour interval of five feet, flood boundaries were plotted along the Androscoggin River from the Peru-Rumford corporate limits to its confluence with Swift River and for the Swift River from its mouth to the Mexico-Rumford corporate limits using the flood elevations obtained from the J635 computer program (Reference 47).

For flooding sources studied by approximate methods, the boundaries of the 1-percent annual chance floodplain were delineated using the FHBMs for the Town of Andover (Reference 72); Town of Bethel (Reference 73); Town of Brownfield (Reference 74); Town of Canton, also using USGS topographic maps (Reference 54; Reference 75); Town of Lovell (Reference 76); Town of Otisfield (Reference 65); Town of Oxford, also using USGS topographic maps (References 54 and 77); Town of Paris, also using USGS topographic maps (References 54 and 78); Town of Peru (Reference 79); Town of Porter (Reference 80); Town of Waterford (Reference 81); and the Town of West Paris (Reference 82).

For streams studied by approximate methods in the Towns of Buckfield, Dixfield, and Newry, the boundaries of the 1-percent annual change floodplain remained essentially unchanged from the delineation shown on the previously printed Flood Insurance Study for those towns (References 83, 84 and 85).

In the Town of Mexico, Edmunds Bog Brook, Walton Brook, Abbott Brook and Chase Brook, Mitchell Brook, and Tributary 1 on the Swift River were studied by approximate methods. The 1-percent annual chance floodplain boundary was taken from U.S. Geological Survey Flood Prone Area Maps (Reference 86 and 87).

For the areas studied by approximate methods in Norway, 1-percent annual chance floodplain boundaries were delineated using USGS topographic maps at a scale of 1:24,000, with contour intervals of 10 and 20 feet, and the Flood Hazard Boundary Map for the Town of Norway (References 38, 54 and 88).

For the Town of Rumford, the computed 1-percent annual chance flood elevations used for the approximate flood boundary on the Ellis River were delineated on topographic maps at a scale of 1:4800, with a contour interval of 10 feet, published by the U.S. Army Corps of Engineers (Reference 89). The boundaries for the other streams studied by approximate methods were determined by the methods described in Section 3.2, specifically pertaining to Rumford. The boundary of the average rise caused by the 1-percent annual chance flood was plotted using the best topographic maps available, and compared to the Flood Hazard Boundary Map for Rumford, Maine (Reference 18). The boundaries for the Concord River and Barkers, Logan, Meadow, Split and Bean Brooks were delineated from topographic maps (References 32 and 89) and, Scotty and Wyman

Brooks from base maps used for the Flood Insurance Study for the Town of Mexico, Maine (Reference 43). Approximate flood boundaries in some portions of the study area were taken from the Federal Insurance Administration Flood Hazard Boundary Map for Rumford, Maine (Reference 18).

The flood boundaries of the approximate areas in the Towns of Denmark, Hiram and Fryeburg were delineated on topographic maps at a scale of 1:24,000, with a contour interval of 20 feet (References 32, 56, and 90). The approximate flood boundaries were obtained from the flood hazard Boundary map for each respective town (Reference 56 and 87). These areas were checked by information gathered from the detailed study areas and information from the towns. No normal depth calculations were made. With the approval of the FIA, the Zone A designation in the Flood Hazard Boundary Map for Denmark was changed to Zone C for Perley Pond, Hancock Pond, Walden Pond, Granger Pond, Moose Pond, and Moose Pond Brook because of minima1 flood hazards.

For the streams studied by approximate methods, only the 1-percent-annual-chance floodplain boundary is shown on the FIRM (Exhibit 2).

For streams revised for this countywide FIS, the boundaries between cross sections were determined using GIS – based automated modeling techniques based on LIDAR derived data sets, including a Gridded DEM, TIN file, and 2' contour interval.

The LIDAR derived data sets, including a Gridded DEM, TIN file, 2' contours and a mass point, and Breaklines were used for H&H modeling and delineation of the floodplain.

In order to assist the community with floodplain management along the revised reaches of Barkers Brook, Crooked River, Hancock Brook, Stony Brook and Twitchell Brook, a

summary of the revised base flood (regulatory) elevations has been provided in Table 10, “Floodplain Data".

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

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Barkers Brook (Town of Bethel)						
A	24,430	764	1,877	1.2	633.5	633.5
B	25,344	275	397	5.1	635.0	635.0
C	25,411	422	415	4.0	636.1	636.1
D	26,140	379	913	1.8	637.3	637.3
E	26,227	411	622	2.7	637.4	637.4
F	26,245	682	2,434	0.7	637.9	637.9
G	27,535	543	663	2.5	639.0	639.0
H	28,937	143	430	3.6	645.6	645.6
I	29,856	103	265	5.9	650.3	650.3
J	31,483	598	1,923	0.8	653.3	653.3
K	32,853	554	553	2.8	654.6	654.6
L	34,097	420	1,318	1.2	657.8	657.8
M	35,304	866	1,320	1.2	659.2	659.2
N	36,919	294	583	2.7	663.8	663.8

[1] Feet above confluence with Androscoggin River

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

BARKERS BROOK (TOWN OF BETHEL)

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Crooked River (Town of Otisfield)						
A	-659	*	*	*	333.8	333.8
B	-380	*	*	*	334.3	334.3
C	-181	*	*	*	334.8	334.8
D	-125	*	*	*	334.9	334.9
E	80	*	*	*	338.4	338.4
F	430	*	*	*	338.9	338.9
G	897	*	*	*	339.2	339.2
H	1,677	*	*	*	340.3	340.3
I	2,565	*	*	*	341.3	341.3
J	4,169	*	*	*	342.4	342.4
K	6,065	*	*	*	344.0	344.0
L	7,073	*	*	*	344.7	344.7
M	7,756	*	*	*	345.1	345.1
N	8,333	*	*	*	345.1	345.1
O	9,337	*	*	*	347.9	347.9
P	10,325	*	*	*	349.5	349.5
Q	10,941	*	*	*	350.4	350.4
R	11,779	*	*	*	352.4	352.4
S	12,392	*	*	*	358.3	358.3
T	13,025	*	*	*	362.8	362.8
U	13,650	*	*	*	367.5	367.5
V	13,734	*	*	*	371.2	371.2
W	13,816	*	*	*	373.1	373.1
X	13,982	*	*	*	373.6	373.6
Y	14,357	*	*	*	374.3	374.3
Z	15,110	*	*	*	374.5	374.5

[1] Feet above mouth

*No floodplain data available

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

CROOKED RIVER (TOWN OF OTISFIELD)

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Crooked River (Town of Otisfield)						
AA	16,216	*	*	*	374.9	374.9
AB	17,845	*	*	*	375.4	375.4
AC	18,938	*	*	*	375.5	375.5
AD	19,895	*	*	*	375.7	375.7
AE	21,646	*	*	*	376.1	376.1
AF	22,745	*	*	*	376.4	376.4
AG	24,617	*	*	*	376.8	376.8
AH	26,177	*	*	*	377.5	377.5
AI	26,764	*	*	*	377.8	377.8
AJ	27,320	*	*	*	378.3	378.3
AK	27,868	*	*	*	379.1	379.1
AL	27,947	*	*	*	379.0	379.0
AM	28,654	*	*	*	380.0	380.0
AN	30,578	*	*	*	380.9	380.9
AO	32,099	*	*	*	381.7	381.7
AP	32,834	*	*	*	382.1	382.1
AQ	33,433	*	*	*	382.8	382.8
AR	34,367	*	*	*	384.9	384.9
AS	35,234	*	*	*	387.3	387.3
AT	35,944	*	*	*	394.2	394.2
AU	36,143	*	*	*	395.8	395.8
AV	36,193	*	*	*	397.1	397.1
AW	37,011	*	*	*	398.7	398.7

[1] Feet above mouth

*No floodplain data available

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

CROOKED RIVER (TOWN OF OTISFIELD)

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
East Branch Nezinscot River						
A	1610	805	8780	0.5	322.0	322.0
B	3810	961	9260	0.5	322.0	322.0
C	5990	831	5640	0.8	322.1	322.1
D	7430	177	1130	3.9	322.8	322.8

[1] Feet above confluence with Nezinscot River

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

EAST BRANCH NEZINSCOT RIVER

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Hancock Brook						
A	423	*	*	*	361.3 [2]	348.3
B	1,285	*	*	*	361.3 [2]	350.3
C	2,318	*	*	*	361.3	351.8
D	3,715	*	*	*	367.3	367.3
E	3,861	*	*	*	374.0	374.0
F	4,222	*	*	*	379.9	379.9
G	5,158	*	*	*	383.4	383.4
H	5,773	*	*	*	383.9	383.9
I	6,070	*	*	*	389.5	389.5
J	7,230	*	*	*	389.6	389.6
K	8,420	*	*	*	390.1	390.1
L	9,649	*	*	*	393.7	393.7
M	10,863	*	*	*	405.1	405.1
N	10,989	*	*	*	410.3	410.3
O	11,595	*	*	*	414.2	414.2
P	11,721	*	*	*	417.4	417.4
Q	11,923	*	*	*	417.8	417.8
R	12,177	*	*	*	428.2	428.2
S	12,866	*	*	*	428.2	428.2
T	13,498	*	*	*	442.0	442.0
U	14,169	*	*	*	452.0	452.0
V	14,749	*	*	*	466.6	466.6
W	15,781	*	*	*	475.7	475.7
X	16,917	*	*	*	482.5	482.5
Y	18,031	*	*	*	491.8	491.8
Z	18,272	*	*	*	493.5	493.5

[1] Feet above confluence with Saco River
[2] Elevations considering the backwater effects from Saco River

*No floodplain data available

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

HANCOCK BROOK

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Hancock Brook						
AA	18,300	*	*	*	493.8	493.8
AB	18,623	*	*	*	496.9	496.9

[1] Feet above confluence with Saco River

*No floodplain data available

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

HANCOCK BROOK

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE**[1]	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Little Androscoggin River						
DQ	116,870	128	738	8.9	388.4	388.4
DR	117,220	184	1,720	3.8	407.8	407.8
DS	117,770	344	2,660	2.5	408.2	408.2
DT	119,020	247	2,130	3.1	408.7	408.7
DU	120,050	368	3,440	1.9	409.2	409.2
DV	120,980	289	1,870	3.5	409.6	409.6
DW	122,220	272	1,820	3.6	412.2	412.2
DX	123,570	164	1,190	5.5	416.9	416.9
DY	124,310	194	1,300	5.0	457.4	457.4
DZ	124,900	282	1,860	3.5	458.0	458.0
EA	125,300	280	2,060	3.2	458.3	458.3
EB	125,720	368	2,120	3.1	458.4	458.4
EC	125,990	377	2,190	3.0	458.6	458.6
ED	126,860	187	1,750	3.7	459.0	459.0
EE	127,570	198	1,800	3.6	459.3	459.3
EF	129,070	1,800	6,870	0.8	459.9	459.9
EG	129,670	1,980	5,820	0.9	460.0	460.0
EH	131,070	2,410	5,820	0.9	460.3	460.3
EI	131,670	2,450	8,890	0.6	460.5	460.5
EJ	133,270	3,320	7,400	0.7	460.8	460.8
EK	134,870	1,290	3,070	1.8	460.9	460.9
EL	135,920	534	1,440	2.8	461.8	461.8
EM	136,070	219	757	5.4	461.7	461.7
EN	136,170	253	1,320	3.1	466.5	466.5
EO	137,920	303	2,260	1.8	468.1	468.1
EP	139,830	210	710	5.8	471.1	471.1

[1] Feet above Androscoggin/Oxford County Boundary

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

LITTLE ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Little Androscoggin River						
EQ	140,840	209	1,160	3.5	476.4	476.4
ER	140,950	243	1,570	2.6	478.2	478.2
ES	141,015	244	1,580	2.6	478.2	478.2
ET	141,045	250	1,730	2.4	480.7	480.7
EU	141,070	250	1,730	2.4	480.7	480.7
EV	141,370	398	2,620	1.6	484.2	484.2
EW	141,780	400	2,650	1.6	484.3	484.3
EX	142,170	519	3,220	1.3	485.0	485.0
EY	145,270	736	5,330	0.8	485.2	485.2
EZ	146,600	759	4,820	0.8	485.3	485.3
FA	147,980	304	1,580	2.6	485.7	485.7
FB	149,420	202	755	5.4	489.1	489.1

[1] Feet above Androscoggin/Oxford County Boundary

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

LITTLE ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Nezinscot River						
A	1440	167	2060	4.9	316.0	316.0
B	3300	238	2910	3.4	316.7	316.7
C	5730	561	6050	1.5	317.2	317.2
D	7887	963	11300	0.8	317.7	317.7
E	10230	455	3880	2.4	317.8	317.8
F	12200	618	4390	2.1	318.4	318.4
G	13950	282	3280	2.8	319.0	319.0
H	17210	920	5820	1.6	319.9	319.9
I	18970	655	2430	3.8	320.2	320.2
J	20720	213	2810	3.3	320.9	320.9
K	21920	742	8590	1.1	321.7	321.7

[1] Feet from County Boundary

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY
OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODPLAIN DATA

NEZINSCOT RIVER

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Stony Brook						
AD	11,000	*	*	*	478.7	478.7
AE	11,072	*	*	*	480.8	480.8
AF	11,205	*	*	*	487.0	487.0
AG	11,256	*	*	*	486.7	486.7
AH	11,731	*	*	*	503.6	503.6
AI	12,433	*	*	*	518.0	518.0
AJ	12,649	*	*	*	521.2	521.2
AK	13,049	*	*	*	522.1	522.1
AL	13,564	*	*	*	523.8	523.8
AM	14,064	*	*	*	530.5	530.5
AN	14,275	*	*	*	532.1	532.1
AO	14,840	*	*	*	534.7	534.7
AP	15,871	*	*	*	541.4	541.4
AQ	16,635	*	*	*	552.0	552.0
AR	17,469	*	*	*	569.8	569.8
AS	17,949	*	*	*	577.0	577.0

[1] Feet above confluence with Little Androscoggin River

*No floodplain data available

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODPLAIN DATA

STONY BROOK

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
Twitchell Brook (Town of Paris)						
A	360	147	176	3.8	392.7 [2]	392.7
B	907	61	104	6.4	398.1	398.1
C	1,877	522	979	0.7	401.0	401.0
D	2,295	590	718	0.9	401.5	401.5
E	3,677	90	171	3.7	405.8	405.8
F	4,811	74	134	4.7	414.3	414.3
G	5,048	89	627	1.0	424.3	424.3
H	5,484	41	66	8.3	426.7	426.7
I	6,544	26	62	8.8	470.2	470.2
J	6,944	119	195	2.8	480.8	480.8
K	7,638	103	193	2.8	486.8	486.8

[1] Feet above confluence with Stony Brook
[2] Elevations considering the backwater effects from Stony Brook

FLOODING SOURCE		FLOODPLAIN			WATER SURFACE ELEVATION (FEET NAVD)	
CROSS SECTION	**DISTANCE[1]**	**WIDTH (FEET)**	**FLOW AREA (SQ. FEET)**	**MEAN VELOCITY (FEET/SEC.)**	**REGULATORY**	**1% ANNUAL CHANCE**
West Branch Nezinscot River						
A	3880	550	2650	2.0	322.3	322.3
B	5400	90	770	7.0	349.9	349.9
C	6830	360	2100	2.6	363.2	363.2
D	8300	996	5400	1.0	363.5	363.5
E	11740	611	3443	1.6	364.2	364.2
F	14490	257	1470	3.7	366.6	366.6
G	20330	924	6510	0.8	372.2	372.2
H	23160	1742	10900	0.3	372.4	372.4
I	25000	371	805	4.5	377.8	377.8
J	26950	85	355	10.2	402.7	402.7

[1] Feet above confluence with Nezinscot River

TABLE 10

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODPLAIN DATA

WEST BRANCH NEZINSCOT RIVER

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent-annual-chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways used for this study were computed for certain stream segments on the basis of equal-conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (see Table 11, "Floodway Data"). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

No floodways were computed for the Saco River from Route 160 to the upstream corporate limits of Brownfield; for Shepards River from the Maine Central Railroad to the upstream Brownfield corporate limits; for Pleasant Pond area; for Androscoggin River in Dixfield; for Nezinscot River, East Branch Nezinscot River, and West Branch Nezinscot River in Buckfield; for Saco River and Old Course Saco River in Fryeburg; for Barkers Brook and Sunday River in Newry; for Androscoggin River in Peru; for Little Androscoggin River in West Paris; or for the vicinity of Chisholm Bridge on Androscoggin River. Also, no floodways were computed for the Towns of Hartford and Lovell

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 11, "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.

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 11, for certain downstream cross sections of Sunday River, Alder River, Mill Brook, Kendall Brook, Twitchell Brook, and Sanding Brook in Andover; of Whitney Brook in Canton; of Harvey Brook, Newton Brook, and Potash Brook in Dixfield, of Pennesseewassee Stream in Norway; of Thompson Lake Outlet in Oxford; and of Kedar Brook in Waterford are lower than the regulatory flood elevations in that area, which must take into account the 1-percent annual chance flooding due to backwater from other sources.

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

For this countywide FIS, no new floodways were computed for the revised reaches of Barkers Brook, Crooked River, Hancock Brook, Stony Brook or Twitchell Brook.

Under the State of Maine Revised Statutes Annotated (M.R.S.A.) Title 38 § 439-A, 7C where the floodway is not designated on the Flood Insurance Rate Map, the floodway is considered to be the channel of a river or other water course and the adjacent land areas to a distance of one-half the width of the floodplain, as measured from the normal high water mark to the upland limit of the floodplain, unless a technical evaluation certified by a registered professional engineer is provided demonstrating the actual floodway based upon approved FEMA modeling methods.

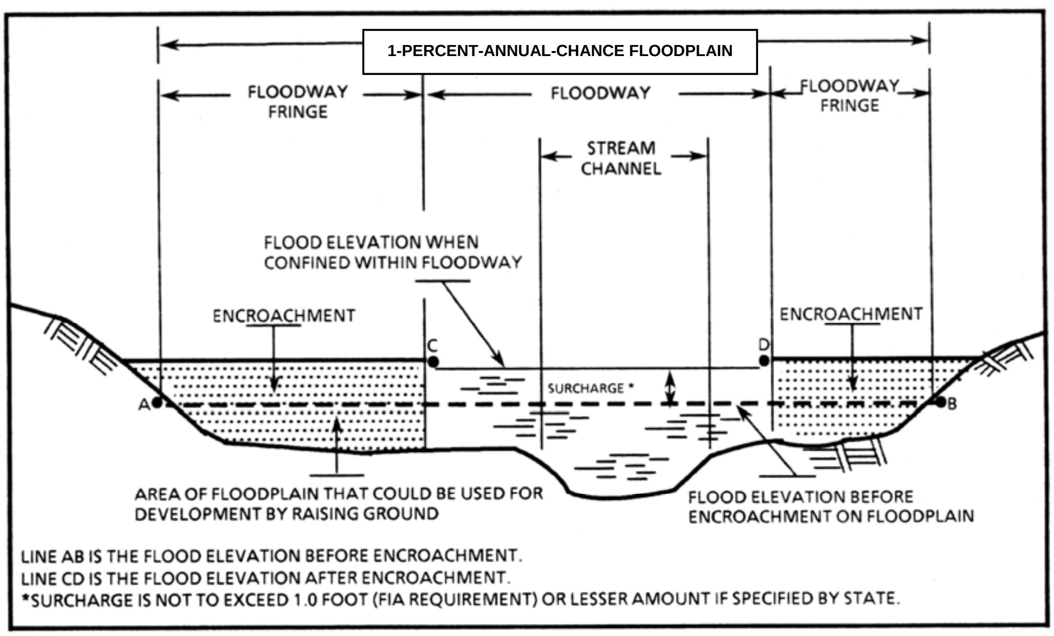

FIGURE 1 – FLOODWAY SCHEMATIC

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	100	1,308	3,500	1.4	647.8	641.6 [2]	642.6	1.0
B	2,200	1,620	10,641	0.5	647.8	642.8 [2]	643.8	1.0
C	12,950	366	2,097	1.2	647.8	647.7 [2]	648.7	1.0
D	20,575	67	450	2.9	657.0	657.0	658.0	1.0
E	22,850	28	267	4.5	665.7	665.7	666.7	1.0
F	23,475	28	155	7.8	679.2	679.2	680.2	1.0
G	25,500	28	195	5.6	700.9	700.9	701.9	1.0
H	29,800	141	507	1.6	708.9	708.9	709.9	1.0

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

ALDER RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	750	550 / 200 [2]	14,800	5.7	381.7	385.9	385.9	0.0
B	1,580	588	14,900	5.7	382.1	382.1	382.1	0.0
C	3,000	440	12,000	7.1	382.8	382.8	382.9	0.1
D	3,700	360	9,740	8.8	383.2	383.2	383.3	0.1
E	4,500	490	12,800	6.7	384.4	384.4	384.5	0.1
F	5,790	840	18,640	4.6	385.4	385.4	385.5	0.1
G	7,100	800	19,200	4.4	385.9	385.9	385.9	0.0
H	8,240	480	10,900	7.8	386.1	386.1	386.3	0.2
I	9,780	510	11,400	7.5	387.8	387.8	388.1	0.3
J	11,090	530	12,600	6.8	389.2	389.2	389.4	0.2
K	11,725	740	12,400	6.9	389.6	389.6	389.8	0.2
L	12,450	1,170	22,000	3.9	390.8	390.8	391.0	0.2
M	14,010	1,300	23,500	3.6	391.3	391.3	391.5	0.2
N	15,150	1,850	304,000	2.8	391.6	391.6	392.0	0.4
O	16,380	2,640	344,000	2.5	391.9	391.9	392.4	0.5
P	17,490	2,330	32,900	2.6	392.2	392.2	392.7	0.5
Q	18,520	1,930	26,300	3.2	392.4	392.4	393.0	0.6
R	20,570	980	19,400	4.4	392.8	392.8	393.6	0.8
S	22,090	730	23,100	3.7	393.1	393.1	394.1	1.0
T	22,690	620	18,300	4.7	393.2	393.2	394.2	1.0
U	23,610	1,270	22,900	3.7	393.6	393.6	394.6	1.0
V	26,480	3,170	37,000	2.3	394.4	394.4	395.4	1.0
W	29,290	2,550	29,300	2.9	395.0	395.0	396.0	1.0
X	29,750	2,270	27,900	3.1	395.2	395.2	396.2	1.0
Y	31,260	1,670	21,900	3.9	395.7	395.7	396.7	1.0
Z	33,310	1,030	17,800	4.8	396.5	396.5	397.5	1.0
AA	34,780	980	20,400	4.2	397.1	397.1	398.1	1.0

[1] FEET ABOVE FRANKLIN / OXFORD COUNTY BOUNDARY

[2] WIDTH / WIDTH WITHIN COUNTY LIMITS

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	36,530	1,290	25,400	3.4	397.7	397.7	398.7	1.0
AC	37,550	700	18,900	4.5	397.9	397.9	398.9	1.0
AD	38,920	1,160	20,400	4.2	398.3	398.3	399.3	1.0
AE	40,230	1,150	18,700	4.6	398.8	398.8	399.7	0.9
AF	42,130	1,080	17,600	4.8	399.6	399.6	400.5	0.9
AG	43,100	1,190	26,400	3.2	400.0	400.0	401.0	1.0
AH	44,570	730.00	18,000	4.7	400.4	400.4	401.4	1.0
AI	45,340	540.00	14,100	6.0	400.7	400.7	401.7	1.0
AJ	46,610	510.00	13,800	6.2	401.5	401.5	402.5	1.0
AK	48,515	480.00	14,480	5.9	402.4	*	*	*
AL	50,215	640.00	14,840	5.7	403.0	*	*	*
AM	51,955	1,340.00	19,900	4.3	403.7	*	*	*
AN	53,415	1,770.00	19,000	4.5	404.1	*	*	*
AO	54,745	2,230.00	23,300	3.6	404.6	*	*	*
AP	58,455	1,200.00	20,800	4.1	405.6	*	*	*
AQ	62,765	1,560.00	21,700	3.9	406.7	*	*	*
AR	64,145	870.00	12,200	7.0	407.1	*	*	*
AS	65,580	770.00	13,800	6.2	408.6	*	*	*
AT	66,965	2,010.00	25,700	3.3	409.5	*	*	*
AU	68,085	1,140.00	17,500	4.9	409.8	*	*	*
AV	69,855	1,450.00	17,200	5.0	410.5	*	*	*
AW	70,975	510.00	12,000	7.0	411.1	*	*	*
AX	72,465	960.00	17,600	4.8	412.0	*	*	*
AY	74,945	840.00	14,500	5.9	412.6	*	*	*
AZ	76,615	950.00	15,400	5.5	413.3	*	*	*
BA	78,735	1,850.00	29,500	2.9	414.4	*	*	*
BB	79,825	1,290.00	23,900	3.6	414.6	*	*	*

[1] FEET ABOVE FRANKLIN / OXFORD COUNTY BOUNDARY

* NO FLOODWAY DATA IS AVAILABLE FOR THIS CROSS-SECTION. INFORMATION SHOWN IS FOR 1% ANNUAL CHANCE FLOOD.

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	81,745	1,850	25,000	3.3	415.0	*	*	*
BD	82,845	1,490	25,000	3.3	415.3	*	*	*
BE	83,830	1,050	16,100	4.8	415.4	*	*	*
BF	84,695	700	14,100	5.5	416.4	*	*	*
BG	86,465	880	15,000	5.2	417.2	*	*	*
BH	88,045	500	9,150	8.5	417.7	*	*	*
BI	89,445	380	7,480	10.4	418.8	*	*	*
BJ	89,545	310	7,530	10.4	418.8	417.8	418.7	0.9
BK	89,645	310	7,570	10.3	418.8	418.0	418.8	0.8
BL	91,545	870	16,600	4.7	420.4	420.4	421.3	0.9
BM	92,185	810	14,300	5.5	420.7	420.7	421.6	0.9
BN	93,025	810	17,200	4.5	421.3	421.3	422.1	0.8
BO	96,045	350	8,030	9.7	422.4	422.4	423.2	0.8
BP	98,665	340	7,140	10.9	425.8	425.8	426.7	0.9
BQ	99,245	340	7,500	10.4	426.9	426.9	427.7	0.8
BR	99,675	340	7,730	10.1	427.6	427.6	428.4	0.8
BS	102,895	330	7,770	10.0	431.5	431.5	432.4	0.9
BT	104,225	510	10,700	7.3	433.6	433.6	434.4	0.8
BU	105,555	320	6,270	12.4	434.4	434.4	435.2	0.8
BV	105,665	320	6,370	12.2	434.7	434.7	435.5	0.8
BW	105,955	320	6,880	11.4	436.1	436.1	436.9	0.8
BX	106,305	370	8,320	9.4	437.2	437.2	438.0	0.8
BY	106,485	370	9,110	8.6	437.5	437.5	438.4	0.9
BZ	106,715	370	9,230	8.5	437.9	437.9	438.7	0.8
CA	107,665	370	9,630	8.1	438.7	438.7	439.5	0.8
CB	108,945	400	10,300	7.6	439.6	439.6	440.3	0.7
CC	109,375	400	12,900	4.9	440.6	440.6	441.0	0.4

[1] FEET ABOVE FRANKLIN / OXFORD COUNTY BOUNDARY

* NO FLOODWAY DATA IS AVAILABLE FOR THIS CROSS-SECTION. INFORMATION SHOWN IS FOR 1% ANNUAL CHANCE FLOOD.

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CD	110,175	300	10,400	6.0	440.6	440.6	441.1	0.5
CE	110,425	300	7,150	8.7	440.6	440.6	441.2	0.6
CF	110,925	500	11,200	5.6	441.5	441.5	442.2	0.7
CG	111,475	300	4,140	15.1	441.5	441.5	442.2	0.7
CH	111,725 [2]	290	3,337	18.7	448.2	448.2	448.2	0.0
CI	112,045 [2]	300	3,097	20.2	469.6	469.6	469.6	0.0
CJ	112,275 [2]	317	3,803	16.4	487.3	487.3	487.3	0.0
CK	112,975	300	5,550	11.3	493.3	493.3	493.3	0.0
CL	113,245	264	3,650	17.1	493.3	493.3	493.3	0.0
CM	113,535	400	6,740	9.3	498.3	498.3	498.6	0.3
CN	114,235	680	17,900	3.5	513.1	513.1	513.1	0.0
CO	114,645	150	7,020	8.9	513.1	513.1	513.1	0.0
CP	115,805	290	8,250	7.6	609.7	609.7	609.7	0.0
CQ	116,205	190	5,350	11.7	609.7	609.7	609.7	0.0
CR	116,535	400	11,300	5.5	614.8	614.8	614.9	0.1
CS	117,435	450	14,500	4.3	615.2	615.2	615.2	0.0
CT	118,145	400	12,500	5.0	615.2	615.2	615.3	0.1
CU	118,605	550	15,000	4.2	615.4	615.4	615.5	0.1
CV	120,445	280 / 350 [3]	18,900	3.3	615.7	615.7	615.9	0.2
CW	122,315	500	14,300	4.4	615.8	615.8	616.1	0.3
CX	123,745	500	14,700	4.2	616.0	616.0	616.3	0.3
CY	125,325	570	14,400	4.3	616.2	616.2	616.6	0.4
CZ	126,535	490	13,300	4.7	616.3	616.3	616.8	0.5
DA	127,645	420	11,700	5.3	616.5	616.5	617.0	0.5
DB	128,785	450	12,600	5.0	616.8	616.8	617.3	0.5
DC	130,265	650	15,300	4.1	617.2	617.2	617.8	0.6
DD	131,325	720	17,100	3.7	617.4	617.4	618.0	0.6

[1] FEET ABOVE FRANKLIN / OXFORD COUNTY BOUNDARY

[2] 100-YEAR FLOOD CONDITIONS WITHOUT CONSIDERATION OF ENCROACHMENT

[3] WIDTH (LEFT SIDE OF ISLAND)/ WIDTH (RIGHT SIDE OF ISLAND)

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DE	132,455	400	10,800	5.8	617.6	617.6	618.1	0.5
DF	133,145	460	11,500	5.4	617.9	617.9	618.4	0.5
DG	134,125	560	13,700	4.6	618.2	618.2	618.8	0.6
DH	134,705	480	11,600	5.4	618.4	618.4	618.9	0.5
DI	135,975	460	12,400	5.1	618.6	618.6	619.3	0.7
DJ	136,475	545	14,000	4.5	618.8	618.8	619.5	0.7
DK	137,415	550	14,200	4.4	618.9	618.9	619.6	0.7
DL	138,045	480	12,600	4.9	619.0	619.0	619.8	0.8
DM	138,735	350	10,000	6.3	619.1	619.1	619.8	0.7
DN	139,445	330	9,480	6.6	619.3	619.3	620.1	0.8
DO	140,155	470	13,500	4.6	619.9	619.9	620.6	0.7
DP	140,955	450	12,300	5.1	620.0	620.0	620.7	0.7
DQ	141,555	450	12,200	5.1	620.1	620.1	620.9	0.8
DR	142,135	420	11,300	5.5	620.2	620.2	621.0	0.8
DS	142,795	360	10,300	6.1	620.4	620.4	621.1	0.7
DT	143,235	450	11,800	5.3	620.6	620.6	621.4	0.8
DU	143,785	480	12,400	5.1	621.0	621.0	621.6	0.6
DV	144,755	620	15,200	4.1	621.1	621.1	621.9	0.8
DW	145,455	650	16,400	3.8	621.3	621.3	622.1	0.8
DX	146,375	660	16,100	3.9	621.4	621.4	622.2	0.8
DY	147,255	450	12,000	5.2	621.5	621.5	622.3	0.8
DZ	148,175	390	10,300	6.1	621.7	621.7	622.5	0.8
EA	149,095	400	10,400	6.0	622.1	622.1	622.9	0.8
EB	150,055	380	9,640	6.5	622.4	622.4	623.2	0.8
EC	150,805	390	9,390	6.7	622.7	622.7	623.5	0.8
ED	151,625	510	13,400	4.7	623.4	623.4	624.1	0.7
EE	152,365	500	14,500	4.3	623.6	623.6	624.3	0.7

[1] FEET ABOVE FRANKLIN / OXFORD COUNTY BOUNDARY

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
EF	153,335	600	13,800	4.5	623.7	623.7	624.4	0.7
EG	153,965	600	13,400	4.7	623.8	623.8	624.5	0.7
EH	154,815	600	12,700	4.9	623.9	623.9	624.7	0.8
EI	157,365	900	17,000	3.7	624.5	624.5	625.4	0.9
EJ	158,045	1,400	24,000	2.6	624.7	624.7	625.6	0.9
EK	159,025	*	*	*	624.8	624.8	625.8	1.0
EL	160,355	1,500	21,100	3.0	624.9	624.9	625.9	1.0
EM	161,295	1,200	19,600	3.2	625.0	625.0	626.0	1.0
EN	162,255	1,200	17,300	3.6	625.2	625.2	626.2	1.0
EO	163,625	840	14,700	4.3	625.4	625.4	626.4	1.0
EP	164,375	1,000	17,300	3.6	625.7	625.7	626.7	1.0
EQ	165,045	*	*	*	625.8	625.8	626.8	1.0
ER	165,795	*	*	*	626.3	626.3	627.3	1.0
ES	167,855	*	*	*	626.6	626.6	627.5	0.9
ET	168,835	1,800	31,600	1.7	626.6	626.6	627.6	1.0
EU	169,285	*	*	*	626.6	626.6	627.6	1.0
EV	170,285	*	*	*	626.8	626.8	627.7	0.9
EW	172,670	1,390	28,300	1.8	627.0	627.0	628.0	1.0
EX	175,620	285	13,000	3.9	627.3	627.3	628.3	1.0
EY	178,920	110	23,700	2.1	628.0	628.0	629.0	1.0
EZ	182,620	840	40,700	1.2	628.4	628.4	629.4	1.0
FA	186,170	*	*	*	628.7	628.7	629.7	1.0
FB	189,270	227	10,000	5.0	629.7	629.7	630.6	0.9
FC	192,370	*	*	*	631.3	631.3	632.2	0.9
FD	194,720	205	8,580	5.9	632.7	632.7	633.6	0.9
FE	198,570	*	*	*	635.4	635.4	636.0	0.6
FF	200,120	196	7,720	6.4	636.5	636.5	637.1	0.6

[1] FEET ABOVE FRANKLIN / OXFORD COUNTY BOUNDARY

*FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
FG	203,070	467	9,250	5.3	638.6	638.6	639.0	0.4
FH	206,520	*	*	*	640.4	640.4	640.7	0.3
FI	211,120	1,603	20,800	2.4	642.3	642.3	642.7	0.4
FJ	214,020	310	6,740	6.9	643.0	643.0	643.4	0.4
FK	216,170	803	13,100	3.6	644.3	644.3	644.7	0.4
FL	219,720	727	11,200	4.0	645.0	645.0	645.5	0.5
FM	222,070	518	11,800	3.8	645.6	645.6	646.1	0.5
FN	224,920	568	11,700	3.8	646.1	646.1	646.6	0.5
FO	227,970	1,053	13,000	3.4	646.7	646.7	647.2	0.5
FP	231,350	1,885	23,900	1.8	647.6	647.6	648.2	0.6
FQ	235,750	*	*	*	648.3	648.3	648.9	0.6
FR	237,600	2,499	35,900	1.2	649.4	649.4	650.0	0.6
FS	241,540	3,119	37,200	1.1	649.7	649.7	650.2	0.5
FT	244,270	1,395	14,300	3.0	649.9	649.9	650.5	0.6
FU	247,620	263	5,250	8.1	651.5	651.5	652.0	0.5
FV	250,270	717	11,000	3.9	653.8	653.8	654.5	0.7
FW	253,390	446	8,250	5.0	655.0	655.0	655.7	0.7
FX	255,470	1,435	20,400	2.0	656.0	656.0	656.6	0.6
FY	257,650	396	7,030	5.9	656.9	656.9	657.4	0.5
FZ	261,070	949	12,300	3.3	658.8	658.8	659.2	0.4

[1] FEET ABOVE FRANKLIN / OXFORD COUNTY BOUNDARY

*FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,790	42	235	5.6	435.3	435.3	436.2	0.9
B	3,305	161	748	2.0	442.3	442.3	442.3	0.0

[1] FEET ABOVE CONFLUENCE WITH WEBB RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

AUNT HANNAH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	350	40	210	3.6	374.7	374.7	375.5	0.8
B	470	20	103	7.3	374.7	374.7	375.7	1.0
C	560	20	143	5.2	377.0	377.0	377.0	0.0
D	820	40	219	3.4	377.5	377.5	377.7	0.2
E	1,020	30	137	5.5	378.2	378.2	378.3	0.1
F	1,060	30	133	5.6	379.2	379.2	379.2	0.0
G	1,280	25	150	5.0	380.2	380.2	380.4	0.2
H	1,340	35	211	3.6	380.8	380.8	381.0	0.2
I	1,460	80	352	2.1	381.3	381.3	381.3	0.0
J	2,290	140	614	1.2	381.6	381.6	382.4	0.8
K	2,850	60	418	1.8	381.7	381.7	382.7	1.0
L	2,930	150	630	1.2	381.8	381.8	382.8	1.0

[1] FEET ABOVE CONFLUENCE WITH PENNESSEEWASSEE STREAM

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

BIRD BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	805	52	171	4.8	473.4	473.4	474.4	1.0

[1] FEET ABOVE CONFLUENCE WITH SEVENMILE STREAM

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

BUTTERFIELD BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,340	129	1,452	7.7	452.7	452.7	453.7	1.0
B	1,940	99	918	12.2	463.7	463.7	464.7	1.0
C	6,580	889	7,641	1.5	467.1	467.1	468.1	1.0
D	14,810	578	5,050	2.2	471.1	471.1	472.1	1.0
E	22,350	279	3,638	2.9	475.2	475.2	476.2	1.0
F	25,390	538	5,820	1.8	476.0	476.0	477.0	1.0
G	25,535	825	8,320	1.3	477.3	477.3	478.3	1.0
H	31,460	370	4,580	2.3	479.3	479.3	480.3	1.0
I	38,655	605	6,186	1.6	481.4	481.4	482.4	1.0
J	44,260	758	7,575	1.3	482.9	482.9	483.9	1.0
K	47,585	250	3,382	2.9	485.8	485.8	486.8	1.0
L	52,745	134	1,893	5.3	487.9	487.9	488.9	1.0
M	56,825	241	3,686	2.7	490.1	490.1	491.1	1.0
N	62,045	437	5,996	1.6	491.6	491.6	492.6	1.0
O	62,925	712	11,024	0.8	492.1	492.1	493.1	1.0
P	68,205	392	3,918	2.3	494.7	494.7	495.7	1.0
Q	70,015	166	2,011	4.4	497.4	497.4	498.4	1.0
R	73,605	150	2,147	4.1	503.3	503.3	504.3	1.0
S	79,135	322	3,181	2.7	508.0	508.0	509.0	1.0
T	80,865	117	1,013	8.6	523.6	523.6	524.6	1.0
U	82,625	138	1,237	7.0	536.2	536.2	537.2	1.0
V	84,095	271	2,263	3.8	543.1	543.1	544.1	1.0
W	84,425	283	2,080	4.2	545.4	545.4	546.4	1.0
X	86,435	221	2,724	3.2	553.1	553.1	554.1	1.0

[1] DISTANCE FROM NORWAY / WATERFORD CORPORATE LIMITS

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

CROOKED RIVER (TOWN OF WATERFORD)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	9,350	1,646	11,324	1.8	635.3	635.3	636.3	1.0
B	22,150	1,100	8,497	2.4	641.7	641.7	642.7	1.0
C	44,025	587	3,310	2.3	649.8	649.8	650.8	1.0
D	46,125	109	1,191	6.3	658.2	658.2	659.2	1.0
E	46,205	124	1,505	5.0	661.1	661.1	662.1	1.0

[1] FEET FROM CORPORATE LIMITS

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

ELLIS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	501	82	669	2.2	406.4	391.8 [2]	392.2	0.4
B	901	82	628	2.3	406.4	392.1 [2]	392.4	0.3

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

HARVEY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	540	24	134	11.5	531.3	531.3	532.3	1.0
B	1,465	18	109	13.2	561.4	561.4	562.3	0.9

[1] FEET ABOVE CONFLUENCE WITH SEVENMILE STREAM

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

HUGH 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
A	300	202	810	1.9	498.8	498.4 [2]	499.4	1.0
B	713	54	328	4.6	505.9	505.8 [2]	506.8	1.0

[1] FEET ABOVE CONFLUENCE WITH KEOKA LAKE

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM KEOKA LAKE

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

KEDAR BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	10,500	723	2,900	0.7	647.8	646.2 [2]	647.2	1.0

[1] FEET ABOVE CONFLUENCE WITH ALDER RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

KENDALL BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	40	600	4,540	2.7	299.2	299.2	299.7	0.5
B	850	700	5,350	2.3	299.4	299.4	300.0	0.6
C	3,110	660	4,620	2.7	299.8	299.8	300.6	0.8
D	4,520	450	3,160	3.9	300.2	300.2	301.0	0.8
E	5,480	330	3,740	3.3	300.5	300.5	301.5	1.0
F	6,510	330	2,680	4.6	300.9	300.9	301.8	0.9
G	7,960	270	3,070	4.0	301.9	301.9	302.8	0.9
H	9,980	400	3,230	3.8	302.8	302.8	303.5	0.7
I	12,620	170	2,190	5.7	303.7	303.7	304.5	0.8
J	14,100	380	2,480	5.0	304.2	304.2	305.1	0.9
K	14,720	460	3,280	3.8	305.2	305.2	305.8	0.6
L	15,740	430	4,020	3.1	305.4	305.4	306.3	0.9
M	16,180	360	3,460	3.6	305.7	305.7	306.6	0.9
N	16,600	300	3,240	3.8	305.7	305.7	306.6	0.9
O	16,820	300	5,350	2.3	306.1	306.1	307.1	1.0
P	16,960	320	2,510	4.9	306.6	306.6	307.3	0.7
Q	17,130	130	1,780	7.0	307.3	307.3	307.7	0.4
R	18,010	650	5,360	2.3	308.2	308.2	308.7	0.5
S	19,190	*	*	*	308.4	308.4	309.0	0.6
T	24,660	*	*	*	309.0	309.0	309.8	0.8
U	26,300	*	*	*	309.2	309.2	310.1	0.9
V	27,350	*	*	*	309.4	309.4	310.3	0.9
W	28,110	400	2,710	4.5	309.4	309.4	310.3	0.9
X	29,440	*	*	*	311.0	311.0	311.5	0.5
Y	29,650	160	1,960	5.4	311.6	311.6	312.0	0.4
Z	30,490	180	2,050	5.2	312.3	312.3	312.7	0.4
AA	31,160	*	*	*	312.6	312.6	313.2	0.6

[1] FEET ABOVE ANDROSCOGGIN / OXFORD COUNTY BOUNDARY

*FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	31,400	310	3,140	3.4	312.7	312.7	313.3	0.6
AC	32,210	600	5,370	2.0	312.9	312.9	313.8	0.9
AD	34,500	650	5,450	2.0	313.6	313.6	314.5	0.9
AE	36,090	870	7,110	1.5	314.1	314.1	315.0	0.9
AF	38,430	*	*	*	314.6	314.6	315.5	0.9
AG	40,290	550	4,340	2.4	315.0	315.0	316.0	1.0
AH	41,750	900	6,020	1.8	315.8	315.8	316.6	0.8
AI	43,400	1,000	9,810	1.1	316.2	316.2	317.2	1.0
AJ	44,840	780	7,260	1.5	316.4	316.4	317.4	1.0
AK	46,080	650	6,650	1.6	316.6	316.6	317.6	1.0
AL	48,550	640	4,140	2.6	317.5	317.5	318.5	1.0
AM	51,300	650	5,100	2.1	319.2	319.2	320.0	0.8
AN	52,780	880	8,180	1.3	319.8	319.8	320.7	0.9
AO	54,240	600	6,040	1.8	320.0	320.0	321.0	1.0
AP	55,190	550	5,320	2.0	320.1	320.1	321.1	1.0
AQ	56,080	980	6,300	1.7	320.4	320.4	321.4	1.0
AR	57,820	830	4,680	2.3	321.1	321.1	322.1	1.0
AS	58,580	890	6,770	1.6	321.4	321.4	322.4	1.0
AT	60,960	670	4,640	2.3	321.8	321.8	322.8	1.0
AU	62,290	250	2,350	4.5	322.4	322.4	323.2	0.8
AV	62,870	240	2,140	5.0	322.8	322.8	323.6	0.8
AW	63,340	120	2,460	4.3	323.2	323.2	324.2	1.0
AX	63,550	120	1,890	5.6	323.3	323.3	324.2	0.9
AY	65,160	750	7,510	1.4	324.1	324.1	325.1	1.0
AZ	66,430	470	4,840	2.1	324.2	324.2	325.2	1.0
BA	67,880	580	4,490	2.3	324.6	324.6	325.6	1.0
BB	68,880	130	2,180	4.7	325.0	325.0	325.9	0.9

[1] FEET ABOVE ANDROSCOGGIN / OXFORD COUNTY BOUNDARY

*FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BC	69,530	300	3,280	3.1	325.4	325.4	326.2	0.8
BD	69,920	400	3,350	3.1	325.5	325.5	326.3	0.8
BE	70,950	650	6,020	1.7	326.0	326.0	326.9	0.9
BF	71,500	700	4,550	2.3	326.1	326.1	327.1	1.0
BG	74,110	650	4,640	2.0	327.6	327.6	328.5	0.9
BH	74,860	380	2,390	3.9	328.1	328.1	328.9	0.8
BI	75,300	250	2,160	4.3	328.3	328.3	329.2	0.9
BJ	75,750	270	2,080	4.5	328.6	328.6	329.5	0.9
BK	76,230	230	2,580	3.6	329.3	329.3	330.2	0.9
BL	79,380	1,200	6,320	1.5	331.2	331.2	332.2	1.0
BM	80,000	350	4,110	2.3	331.5	331.5	332.4	0.9
BN	80,610	120	1,660	5.6	331.8	331.8	332.8	1.0
BO	81,000	120	1,440	6.5	332.4	332.4	333.4	1.0
BP	81,110	140	1,950	4.8	333.1	333.1	334.0	0.9
BQ	81,470	120	1,140	8.2	333.7	333.7	334.5	0.8
BR	81,760	90	1,140	8.2	335.5	335.5	336.3	0.8
BS	82,840	120	1,610	5.8	338.7	338.7	339.5	0.8
BT	83430	130	2,150	4.4	339.2	339.2	340.2	1.0
BU	84,060	190	2,510	3.7	339.6	339.6	340.6	1.0
BV	84,350	130	1,940	4.8	339.8	339.8	340.8	1.0
BW	84,770	370	3,750	2.5	340.4	340.4	341.4	1.0
BX	85,420	130	1,760	5.3	340.8	340.8	341.8	1.0
BY	85,530	210	3,590	2.6	341.3	341.3	342.2	0.9
BZ	85,790	100	1,120	8.4	341.3	341.3	342.2	0.9
CA	85,980	130	1,580	5.9	342.4	342.4	343.4	1.0
CB	86,070	*	*	*	343.0	343.0	343.9	0.9
CC	86,160	220	2,440	3.8	349.7	349.7	349.8	0.1

[1] FEET ABOVE ANDROSCOGGIN / OXFORD COUNTY BOUNDARY

*FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
CD	86,820	690	10,300	0.9	349.9	349.9	349.9	0.0
CE	88,070	680	4,998	1.8	349.9	349.9	349.9	0.0
CF	89,280	*	*	*	350.2	350.2	350.2	0.0
CG	89,440	*	*	*	351.0	351.0	351.2	0.2
CH	90,350	200	2,080	4.2	351.6	351.6	351.9	0.3
CI	91,080	180	1,260	7.0	352.2	352.2	352.6	0.4
CJ	91,160	*	*	*	353.3	353.3	353.9	0.6
CK	92,450	420	3,730	2.4	354.1	354.1	354.8	0.7
CL	93,080	350	3,260	2.7	354.4	354.4	355.1	0.7
CM	93,530	350	3,510	2.5	354.5	354.5	355.4	0.9
CN	94,930	920	8,080	1.1	355.0	355.0	355.9	0.9
CO	96,030	650	5,220	1.7	355.3	355.3	356.3	1.0
CP	96,700	620	5,340	1.6	355.6	355.6	356.6	1.0
CQ	97,260	*	*	*	355.8	355.8	356.8	1.0
CR	97,790	600	3,250	2.7	356.0	356.0	357.0	1.0
CS	98,550	*	*	*	356.7	356.7	357.7	1.0
CT	99,550	270	1,780	5.0	357.6	357.6	358.6	1.0
CU	100,130	210	1,800	4.9	358.4	358.4	359.4	1.0
CV	100,650	100	1,260	7.0	359.0	359.0	360.0	1.0
CW	101,180	100	1,230	7.2	360.2	360.2	361.0	0.8
CX	102,020	370	4,190	2.1	361.6	361.6	362.6	1.0
CY	102,500	500	4,640	1.9	361.9	361.9	362.8	0.9
CZ	103,300	240	2,050	4.3	362.3	362.3	363.1	0.8
DA	104,040	380	2,790	3.2	363.2	363.2	364.2	1.0
DB	104,930	460	3,710	2.4	364.4	364.4	365.3	0.9
DC	105,620	550	3,950	2.2	364.9	364.9	365.7	0.8
DD	107,060	*	*	*	366.1	366.1	367.0	0.9

[1] FEET ABOVE ANDROSCOGGIN / OXFORD COUNTY BOUNDARY

*FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
DE	108,070	340	2,660	3.3	367.5	367.5	368.4	0.9
DF	109,240	320	1,990	4.1	368.8	368.8	369.7	0.9
DG	109,870	250	2,150	3.8	369.7	369.7	370.7	1.0
DH	111,330	450	3,560	2.3	371.4	371.4	372.2	0.8
DI	112,320	*	*	*	372.5	372.5	373.4	0.9
DJ	113,030	*	*	*	374.9	374.9	375.8	0.9
DK	114,150	*	*	*	377.3	377.3	378.1	0.8
DL	114,980	130	1,420	5.8	381.8	381.8	382.7	0.9
DM	115,480	*	*	*	382.9	382.9	383.7	0.8
DN	115,880	100	1,440	5.7	385.1	385.1	385.6	0.5
DO	116,440	130	1,170	7.0	386.2	386.2	386.7	0.5
DP	116,650	*	*	*	387.1	387.1	387.6	0.5

[1] FEET ABOVE ANDROSCOGGIN / OXFORD COUNTY BOUNDARY

[2] FOR CROSS SECTIONS DQ TO FB REFER TO 1% FLOODPLAIN DATA TABLE

[3] NO FLOODWAY DATA IS AVAILABLE FOR THIS CROSS-SECTION. INFORMATION SHOWN IS FOR 1 % ANNUAL CHANCE FLOOD.

*FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

LITTLE ANDROSCOGGIN RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	2,075	319	1,788	0.8	649.1	637.5 [2]	638.5	1.0
B	2,375	110	1,062	1.4	649.1	642.3 [2]	643.3	1.0
C	4,875	324	2,702	0.6	649.1	642.6 [2]	643.6	1.0
D	6,400	47	448	3.4	650.7	650.7	651.7	1.0
E	6,775	107	718	2.1	653.4	653.4	654.4	1.0
F	7,275	49	315	4.8	655.4	655.4	656.4	1.0

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MILL BROOK (TOWN OF BETHEL)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	110	70	256	5.6	381.9	376.6 [2]	377.4 [2]	0.8
B	1,280	68	326	4.4	384.9	384.9	385.9	1.0
C	2,240	104	421	3.4	389.7	389.7	390.6	0.9
D	3,100	27	151	9.6	394.5	394.5	395.2	0.7
E	3,510	60	249	5.8	399.9	399.9	400.8	0.9
F	3,775	22	121	11.9	402.3	402.3	402.9	0.6
G	3,935	41	204	7.1	406.1	406.1	406.5	0.4

[1] FEET ABOVE MOUTH

[2] WATER-SURFACE ELEVATIONS GIVEN WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM THE OSSIPEE RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

MILL BROOK (TOWN OF PORTER)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	300	184	935	2.9	408.8	393.1 [2]	394.0	0.9
B	3,470	315	1,765	1.7	408.8	400.4 [2]	400.9	0.5
C	6,775	37	368	5.7	408.8	405.5 [2]	406.2	0.7
D	13,056	64	694	3.4	471.0	471.0	471.6	0.6
E	15,115	90	800	2.7	473.7	473.7	474.3	0.6
F	15,715	54	369	5.7	476.0	476.0	477.0	1.0
G	15,880	47	175	11.0	481.7	481.7	481.9	0.2
H	18,575	782	3,429	0.6	489.0	489.0	490.0	1.0
I	25,225	316	1,121	1.6	499.7	499.7	500.7	1.0
J	29,410	47	331	6.3	527.4	527.4	528.4	1.0
K	30,640	29	163	13.0	571.5	571.5	572.3	0.8

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

NEWTON BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (F.P.S.)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
OSSIPEE RIVER								
A	400	157 / 82 [2]	1,184	11.6	282.6	273.4 [3]	274.4	1.0
B	3,260	*	*	*	282.9	282.9	282.9	0.0
C	8,820	*	*	*	286.7	286.7	287.5	0.8
D	12,665	*	*	*	290.4	290.4	291.0	0.6
E	15,120	130 / 60 [2]	1,238	10.9	291.7	291.7	292.3	0.6
F	18,080	*	*	*	296.7	296.7	297.3	0.6
G	21,850	158 / 88 [2]	1,550	8.7	299.7	299.7	300.4	0.7
H	26,940	150 / 80 [2]	1,362	9.9	309.8	309.8	310.2	0.4
I	29,050	120 / 50 [2]	1,666	8.1	313.4	313.4	314.2	0.8
J	31,280	235 / 80 [2]	1,176	11.5	319.1	319.1	319.1	0.0
K	36,379	150 / 65 [2]	1,109	12.1	346.9	346.9	347.2	0.3
L	36,643	251 / 121 [2]	2,808	4.8	354.7	354.7	355.1	0.4
M	37,646	100 / 60 [2]	848	15.9	356.7	356.7	356.8	0.1
N	38,227	110 / 45 [2]	1,327	10.2	361.2	361.2	362.0	0.8
O	39,283	290 / 135 [2]	3,126	4.3	370.2	370.2	370.7	0.5
P	41,395	159 / 99 [2]	1,682	8.0	371.2	371.2	371.6	0.4
Q	43,349	151 / 91 [2]	1,638	8.2	373.3	373.3	373.9	0.6
R	44,827	176 / 106 [2]	1,949	6.9	375.1	375.1	375.8	0.7
S	45,461	130 / 65 [2]	2,066	6.5	375.9	375.9	376.7	0.8
T	46,042	129 / 59 [2]	1,231	10.9	376.1	376.1	376.5	0.4
U	50,002	172 / 102 [2]	2,422	5.6	380.7	380.7	381.5	0.8
V	54,014	177 / 97 [2]	2,970	4.5	382.0	382.0	383.0	1.0
W	54,490	218 / 88 [2]	3,633	3.3	382.3	382.3	383.2	0.9
X	57,446	236 / 111 [2]	3,759	3.2	382.7	382.7	383.7	1.0
Y	59,770	301 / 226 [2]	4,239	2.7	383.0	383.0	384.0	1.0
Z	61,512	188 / 83 [2]	2,617	4.3	383.2	383.2	384.2	1.0

[1] FEET ABOVE MOUTH

[2] TOTAL WIDTH / WIDTH WITHIN OXFORD COUNTY

[3] ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT FROM SACO RIVER

* FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

OSSIPEE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (F.P.S.)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
OSSIPEE RIVER (CONTINUED)								
AA	62,198	172 / 67 [2]	2,209	5.1	383.4	383.4	384.4	1.0
AB	63,413	201 / 126 [2]	3,048	3.7	384.0	384.0	384.9	0.9
AC	66,158	400 / 185 [2]	4,916	2.3	384.5	384.5	385.5	1.0
AD	69,115	245 / 45 [2]	3,137	3.6	384.8	384.8	385.7	0.9
AE	71,122	330 / 150 [2]	5,089	2.2	385.2	385.2	386.2	1.0

[1] FEET ABOVE MOUTH

[2] TOTAL WIDTH / WIDTH WITHIN OXFORD COUNTY

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

OSSIPEE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	3,125	69	410	1.1	458.0	458.0	458.4	0.4

[1] FEET ABOVE CONFLUENCE WITH WEBB RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

PADDY MEADOW BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	50	75	617	2.6	326.6	320.2 [2]	321.2	1.0
B	960	60	455	3.6	326.6	320.8 [2]	321.8	1.0
C	1,820	150	509	3.2	326.6	323.7 [2]	323.9	0.2
D	2,060	30	130	11.9	346.2	346.2	346.3	0.1
E	2,230	60	436	3.7	373.7	373.7	373.7	0.0
F	3,040	170	1,170	1.4	374.1	374.1	374.3	0.2
G	4,200	150	899	1.8	374.2	374.2	374.6	0.4
H	4,290	120	659	2.5	374.4	374.4	374.7	0.3
I	4,670	100	713	2.3	374.5	374.5	374.9	0.4
J	5,220	190	1,360	1.2	374.5	374.5	375.2	0.7
K	5,980	150	970	1.2	374.6	374.6	375.4	0.8
L	6,250	70	853	1.3	374.6	374.6	375.4	0.8
M	6,340	60	432	2.6	375.4	375.4	375.7	0.3
N	6,580	60	388	2.9	375.4	375.4	375.9	0.5
O	7,150	100	733	1.6	375.5	375.5	376.4	0.9
P	7,820	28	176	6.5	376.0	376.0	377.0	1.0
Q	7,930	66	548	2.1	382.5	382.5	382.5	0.0
R	8,080	52	301	3.8	382.5	382.5	382.5	0.0
S	8,170	70	484	2.4	384.5	384.5	384.5	0.0
T	8,380	60	295	3.9	384.6	384.6	384.6	0.0
U	8,670	60	390	2.9	389.1	389.1	389.4	0.3

[1] FEET ABOVE CONFLUENCE WITH LITTLE ANDROSCOGGIN RIVER

[2] VALUE COMPUTED WITHOUT CONSIDERATION OF BACKWATER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

PENNESSEEWASSEE STREAM

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	850	374	3,158	1.6	660.4	660.4	661.4	1.0

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

PLEASANT RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	200	19	101	3.4	489.4	486.9 [2]	487.9	1.0

[1] FEET ABOVE CONFLUENCE WITH SEVENMILE STREAM

[2] ELEVATION COMPUTED WITHOUT CDONSIDERATION OF BACKWATER EFFECTS FROM SEVENMILE STREAM

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

POTASH BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	100	39	227	5.1	342.6	342.1 [2]	343.1	1.0
B	650	27	104	11.2	350.9	350.9	350.9	0.0
C	845	23	98	11.8	355.0	355.0	355.0	0.0
D	980	44	293	4.0	364.9	364.9	364.9	0.0
E	1,205	37	388	1.8	368.9	368.9	369.9	1.0
F	1,830	94	850	0.8	369.0	369.0	370.0	1.0
G	2,630	15	61	11.5	376.7	376.7	377.6	0.9

[1] FEET ABOVE MOUTH OF RIDLON BROOK

[2] ELEVATIONS WITHOUT CONSIDERING BACKWATER EFFECT OF THE OSSIPEE RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXOFRD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

RIDLON BROOK - SPECTACLE PONDS BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	3,400	274 / 127 [2]	6,284	4.3	284.6	284.6	285.6	1.0
B	7,705	576 / 450 [2]	6,896	4.0	286.0	286.0	287.0	1.0
C	15,105	284 / 154 [2]	5,517	4.9	290.0	290.0	290.9	0.9
D	16,225	977 / 247 [2]	20,589	1.3	291.0	291.0	291.9	0.9
E	17,160	280 / 145 [2]	3,800	7.2	351.9	351.9	352.7	0.8
F	19,490	260 / 155 [2]	4,481	6.1	355.8	355.8	356.3	0.5
G	26,075	225	4,437	6.2	358.8	358.8	359.7	0.9
H	27,975	214	5,640	4.8	360.4	360.4	361.3	0.9
I	32,655	246	5,064	5.4	362.3	362.3	363.1	0.8
J	36,250	1,530	16,734	1.6	363.3	363.3	364.2	0.9
K	41,650	2,212	29,618	0.9	363.6	363.6	364.5	0.9
L	49,145	804	9,946	2.7	364.0	364.0	364.8	0.8
M	52,690	823	10,331	2.6	364.9	364.9	365.8	0.9
N	58,320	1,029	11,883	2.3	366.8	366.8	367.8	1.0
O	60,405	1,932	24,388	1.1	367.2	367.2	368.2	1.0
P	75,325	1,591	12,206	2.2	369.3	369.3	370.3	1.0
Q	84,405	733	9,851	2.8	372.1	372.1	373.1	1.0
R	93,775	482	9,851	2.8	373.3	373.3	374.3	1.0
S	97,640	833	12,639	2.2	373.9	373.9	374.9	1.0
T	103,885	1,792	23,489	1.2	374.9	374.9	375.9	1.0
U	144,340	*	*	*	376.9	*	*	*
V	152,560	*	*	*	377.0	*	*	*
W	158,340	*	*	*	379.5	*	*	*
X	169,940	*	*	*	381.3	*	*	*
Y	174,060	*	*	*	381.6	*	*	*
Z	180,520	*	*	*	384.9	*	*	*
AA	188,240	*	*	*	386.4	*	*	*

[1] FEET ABOVE CONFLUENCE WITH OSSIPEE RIVER

[2] TOTAL WIDTH/WIDTH WITHIN OXFORD COUNTY

* NO FLOODWAY DATA IS AVAILABLE FOR THIS CROSS SECTION. INFORMATION SHOWN IS FOR 1 % ANNUAL CHANCE FLOOD.

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	190,170	*	*	*	387.3	*	*	*
AC	192,490	*	*	*	391.1	*	*	*
AD	196,470	*	*	*	392.6	*	*	*
AE	203,840	*	*	*	395.2	*	*	*
AF	209,590	*	*	*	397.2	*	*	*
AG	210,040	*	*	*	397.4	*	*	*
AH	212,510	*	*	*	404.1	*	*	*
AI	221,570	*	*	*	408.2	*	*	*
AJ	228,240	*	*	*	410.3	*	*	*
AK	229,390	*	*	*	411.2	*	*	*
AL	232,720	*	*	*	412.3	*	*	*

[1] FEET ABOVE CONFLUENCE WITH OSSIPEE RIVER

* NO FLOODWAY DATA IS AVAILABLE FOR THIS CROSS SECTION. INFORMATION SHOWN IS FOR 1 % ANNUAL CHANCE FLOOD.

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

SACO RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION(	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,300	685	197	1.7	647.8	640.7 [2]	641.7	1.0
B	1,725	202	110	3.0	647.8	644.7 [2]	645.7	1.0
C	2,150	15	64	5.2	648.7	648.7	649.7	1.0
D	2,575	15	69	4.8	656.2	656.2	657.2	1.0
E	3,000	13	47	7.1	660.5	660.5	661.5	1.0
F	3,600	13	45	7.3	675.8	675.8	676.8	1.0
G	4,650	14	44	4.3	694.5	694.5	695.5	1.0
H	5,150	9	37	5.6	722.2	722.2	723.2	1.0

[1] FEET ABOVE CONFLUENCE WITH ALDER RIVER
[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SANDING BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	445	314	1,281	6.8	424.5	424.5	425.4	0.9
B	2,935	179	1,114	6.1	439.3	439.3	440.2	0.9
C	5,898	204	1,029	6.6	466.7	466.7	467.7	1.0
D	7,748	59	434	11.3	485.1	485.1	485.9	0.8
E	9,548	78	461	10.7	507.4	507.4	508.4	1.0
F	13,104	38	365	11.0	542.7	542.7	543.7	1.0
G	15,269	153	613	5.3	559.1	559.1	560.0	0.9

[1] FEET ABOVE COUNTY BOUNDARY

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SEVENMILE STREAM

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	6,150	200	2,076	2.1	380.0	380.0	380.0	0.0
B	8,990	250	1,655	2.6	381.5	381.5	381.7	0.2
C	12,000	90	768	5.6	387.0	387.0	387.6	0.6
D	15,570	48	373	11.5	397.2	397.2	397.8	0.6
E	17,730	46	311	13.8	410.1	410.1	410.5	0.4
F	19,920	253	1,838	2.3	435.9	435.9	436.5	0.6
G	22,130	85	881	4.7	447.8	447.8	448.8	1.0
H	24,680	80	682	6.1	452.7	452.7	453.7	1.0
I	26,780	47	364	11.4	463.7	463.7	464.7	1.0
J	29,190	62	571	7.3	476.3	476.3	477.1	0.8
K	29,400	308	2,989	1.4	482.0	482.0	482.7	0.7
L	34,230	147	427	9.7	487.1	487.1	487.4	0.3
M	35,440	249	1,523	2.7	493.6	493.6	494.5	0.9
N	41,530	65	406	10.2	515.7	515.7	516.3	0.6

[1] FEET ABOVE STATE GAME MANAGEMENT AREA

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

SHEPARDS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	450	80	554	5.0	349.7	348.1 [2]	349.1	1.0
B	950	40	280	9.9	350.2	350.2	350.8	0.6
C	1,010	40	317	8.8	351.6	351.6	352.0	0.4
D	1,270	60	290	9.5	354.8	354.8	355.2	0.4
E	1,410	50	228	12.1	368.3	368.3	368.6	0.3
F	1,610	40	225	12.3	374.2	374.2	374.3	0.1
G	1,660	50	298	9.3	376.4	376.4	376.5	0.1
H	2,020	80	390	7.1	380.4	380.4	380.8	0.4
I	2,270	90	464	6.0	382.0	382.0	382.9	0.9
J	2,570	40	212	13.0	386.6	386.6	386.8	0.2
K	3,100	150	751	3.7	392.3	392.3	393.3	1.0
L	3,360	50	402	6.9	393.0	393.0	394.0	1.0
M	3,710	70	468	5.9	394.6	394.6	395.4	0.8
N	4,120	50	439	5.0	396.1	396.1	397.0	0.9
O	4,260	60	247	9.0	396.8	396.8	397.4	0.6
P	4,450	80	609	3.6	398.6	398.6	399.6	1.0
Q	4,730	35	199	11.1	399.3	399.3	400.1	0.8
R	4,970	40	234	9.4	404.2	404.2	404.4	0.2
S	5,130	40	182	12.1	408.3	408.3	408.4	0.1
T	5,210	70	575	3.8	413.6	413.6	413.6	0.0
U	5,400	50	322	6.9	413.6	413.6	413.7	0.1
V	5,630	40	258	8.6	414.4	414.4	414.5	0.1
W	5,920	70	519	4.3	415.6	415.6	416.2	0.6
X	6,360	50	275	8.0	416.8	416.8	417.1	0.3
Y	6,680	70	383	5.8	418.3	418.3	418.9	0.6
Z	6,840	200	669	3.3	419.1	419.1	419.6	0.5
AA	7,070	160	712	3.1	419.4	419.4	420.4	1.0

[1] FEET ABOVE CONFLUENCE WITH LITTLE ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM LITTLE ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

STONY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
AB	7,370	50	298	7.4	420.2	420.2	421.0	0.8
AC	7,950	50	214	10.3	428.3	428.3	428.3	0.0

[1] FEET ABOVE CONFLUENCE WITH LITTLE ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

STONY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,100	861	3,909	2.0	643.6	640.9 [2]	641.9	1.0
B	4,000	1,559	12,636	0.6	643.6	642.7 [2]	643.7	1.0
C	6,375	364	2,857	2.8	645.7	645.7	646.7	1.0
D	10,575	1,033	5,190	1.5	649.2	649.2	650.2	1.0

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

NOTE: Floodway data not aviailable for cross-sections E through AL

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

SUNDAY RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	780	550	6,170	4.4	439.9	439.9	439.9	0.0
B	2,480	570	6,570	4.2	441.9	441.9	442.3	0.4
C	3,630	325	3,660	7.5	443.1	443.1	443.3	0.2
D	3,780	350	4,010	6.8	444.4	444.4	444.6	0.2

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

NOTE: Floodway data not available for cross-sections E through M

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

SWIFT RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	290	90	683	3.2	310.6	307.0 [2]	308.0	1.0
B	320	60	213	10.3	312.9	312.9	312.9	0.0
C	360	55	414	5.3	314.4	314.4	314.4	0.0
D	500	70	366	6.0	314.8	314.8	314.8	0.0
E	580	50	323	6.8	316.2	316.2	316.3	0.1
F	750	125	929	2.4	316.9	316.9	317.2	0.3
G	1,500	140	896	2.5	317.1	317.1	317.6	0.5
H	2,220	70	574	3.8	317.4	317.4	318.0	0.6
I	2,520	70	557	4.0	317.7	317.7	318.4	0.7
J	2,960	50	493	4.5	317.8	317.8	318.6	0.8
K	3,330	*	*	*	317.8	317.8	318.7	0.9
L	3,390	*	*	*	318.4	318.4	319.4	1.0

[1] FEET ABOVE CONFLUENCE WITH LITTLE ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM LITTLE ANDROSCOGGIN RIVER

* FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

THOMPSON LAKE OUTLET

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	975	41	187	8.9	448.9	448.9	449.8	0.9
B	3,480	28	148	9.6	522.2	522.2	522.6	0.4
C	6,000	66	187	8.2	602.3	602.3	603.1	0.8

[1] FEET ABOVE OXFORD/FRANKLIN COUNTY BOUNDARY

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

ALL JURISDICTIONS

FLOODWAY DATA

TUCKER VALLEY BROOK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	1,645	75	384	2.6	646.6	640.6 [2]	641.6	1.0
B	2,250	*	*	*	646.7	644.1	645.1	1.0
C	3040	113	558	2.0	646.9	644.6	645.5	0.9
D	5670	153	384	5.4	653.8	653.9	653.9	0.0

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

* FOR FLOODWAY WIDTH DATA PLEASE REFER TO FIRM NOTES

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

TWITCHELL BROOK (TOWN OF BETHEL)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	15,176	2,655	30,595	0.4	434.0	434.0	435.0	1.0
B	20,296	1,275	15,160	0.7	434.0	434.0	435.0	1.0
C	28,776	720	6,735	1.5	434.3	434.3	435.3	1.0
D	28,921	265	2,135	4.8	435.2	435.2	436.2	1.0
E	29,086	320	2,270	4.5	435.3	435.3	436.3	1.0
F	30,776	260	2,250	4.5	436.2	436.2	437.2	1.0

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME
(ALL JURISDICTIONS)

FLOODWAY DATA

WEBB RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	875	1,036	5,305	2.4	646.9	646.9	647.9	1.0
B	10,025	858	5,070	2.7	659.8	659.8	660.8	1.0
C	12,825	275	2,371	4.3	666.5	666.5	667.5	1.0
D	13,325	113	829	12.7	670.2	670.2	671.2	1.0
E	13,725	132	1,736	6.0	680.0	680.0	681.0	1.0
F	15,325	1,001	5,069	2.1	681.5	681.5	682.5	1.0
G	23,675	221	1,503	5.9	754.8	754.8	755.8	1.0
H	24,575	213	1,081	8.3	768.4	768.4	769.4	1.0

[1] FEET ABOVE CONFLUENCE WITH ELLIS RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

WEST BRANCH ELLIS RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD 88)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	300	140	1,500	1.4	394.7	385.5 [2]	386.2	0.7
B	1,170	210	1,980	1.0	394.7	385.5 [2]	386.2	0.7
C	1,270	180	1,920	1.1	394.7	386.0 [2]	386.3	0.3
D	2,570	240	1,950	1.0	394.7	386.1 [2]	386.4	0.3
E	2,680	90	796	2.6	394.7	386.2 [2]	386.5	0.3
F	5,420	150	1,070	1.9	394.7	386.8 [2]	387.4	0.6
G	6,220	200	1,280	1.6	394.7	387.0 [2]	387.7	0.7
H	7,310	190	1,380	1.5	394.7	387.2 [2]	388.0	0.8
I	7,880	160	1,310	1.6	394.7	387.3 [2]	388.2	0.9
J	7,960	180	1,110	1.8	394.7	387.4 [2]	388.2	0.8
K	8,420	220	1,520	1.3	394.7	387.4 [2]	388.3	0.9
L	9,820	300	1,740	0.8	394.7	387.6 [2]	388.5	0.9
M	11,370	110	542	2.5	394.7	387.8 [2]	388.8	1.0
N	11,460	50	235	5.9	394.7	387.9 [2]	388.8	0.9
O	12,140	40	228	6.1	394.7	391.7 [2]	391.6	-0.1
P	12,280	25	169	8.2	394.7	392.0 [2]	392.0	0.0
Q	12,370	15	99	14.0	394.7	392.1 [2]	392.5	0.4
R	12,580	20	172	8.0	396.9	396.9	397.8	0.9

[1] FEET ABOVE CONFLUENCE WITH ANDROSCOGGIN RIVER

[2] ELEVATION COMPUTED WITHOUT CONSIDERATION OF BACKWATER EFFECTS FROM ANDROSCOGGIN RIVER

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME

(ALL JURISDICTIONS)

FLOODWAY DATA

WHITNEY BROOK

5.0 INSURANCE APPLICATION

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

Zone A

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

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by detailed methods. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

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

6.0 FLOOD INSURANCE RATE MAP

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

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

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

The countywide FIRM presents flooding information for the entire geographic area of Oxford County. Previously, separate FIRMs were prepared for each incorporated community of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps (FBFMs), where applicable. Historical data relating to the maps prepared for each community are presented in Table 12, “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)
*Adamstown T04 R02 WBKP, Township of	N/A	None	N/A	None
*Albany, Township of	N/A	None	N/A	None
Andover, Town of	November 8, 1974	October 15, 1976	January 3, 1985	None
*Andover North Surplus, Township of	N/A	None	N/A	None
*Andover West Surplus, Township of	N/A	None	N/A	None
*Batchelders Grant, Township of	N/A	None	N/A	None
Bethel, Town of	November 29, 1974	October 22, 1976	May 2, 1991	June 19, 1997
*BowmantownT04 R06 WBKP, Township of	N/A	None	N/A	None
Brownfield, Town of	September 13, 1974	January 14, 1977	April 1, 1981	None
Buckfield, Town of	August 2, 1974	July 9, 1976	November 1, 1985	September 3, 1992
Byron, Town of	December 6, 1974	None	September 4, 1985	None
*C Surplus, Township of	N/A	None	N/A	None
Canton, Town of	August 2, 1974	June 25, 1976	November 3, 1989	None

*No Special Flood Hazard Areas Identified

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME (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)
Denmark, Town of	December 24, 1976	None	July 2, 1980	None
Dixfield, Town of	June 28, 1974	October 29, 1976	March 4, 1985	September 7, 2001
Fryeburg, Town of	August 2, 1974	October 29, 1976	July 16, 1980	August 14, 1981
Gilead, Town of	February 7, 1975	None	July 7, 2009	None
*Grafton TA2, Township of	N/A	None	N/A	None
Greenwood, Town of	February 21, 1975	None	September 4, 1985	None
Hanover, Town of	December 24, 1976	None	September 4, 1985	None
Hartford, Town of	April 11, 1975	None	November 1, 1985	July 5, 1994
Hebron, Town of	April 11, 1975	June 11, 1976	December 31, 1976	None
Hiram, Town of	January 3, 1973	None	February 1, 1980	None
*Lincoln Plantation T5R2WBKP, Township of	N/A	None	N/A	None
Lovell, Town of	April 11, 1975	July 2, 1976	February 17, 1989	None
*Lower Cupsuptic T04 R03 WBKP, Township of	N/A	None	N/A	None

*No Special Flood Hazard Areas Identified

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME (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)
*Lynchtown T05 R04 WBKP, Township of	N/A	None	N/A	None
*Magalloway Plantation	N/A	None	N/A	None
*Mason, Township of	N/A	None	N/A	None
Mexico, Town of	March 8, 1974	None	August 15, 1977	May 15, 1981
Milton, Township of	February 21, 1975	None	April 17, 1987	None
Newry, Town of	April 4, 1975	None	September 4, 1985	May 5, 2003
Norway, Town of	September 13, 1974	July 16, 1976	September 4, 1991	None
Otisfield, Town of	January 31, 1975	April 2, 1976	May 19, 1981	None
*Oxbow T04 R05 WBKP, Township of	N/A	None	N/A	None
Oxford, Town of	July 16, 1975	November 5, 1976	May 2, 1991	None
Paris, Town of	July 19, 1974	October 22, 1976	September 27, 1991	None
*Parkertown T05 R03 WBKP, Township of	N/A	None	N/A	None
*Parmachenee T05 R05 WBKP, Township of	N/A	None	N/A	None

*No Special Flood Hazard Areas Identified

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME (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)
Peru, Town of	October 18, 1974	June 18, 1976	May 17, 1990	None
Porter, Town of	February 7, 1975	None	December 4, 1979	None
*Richardsontown T04 R01 WBKP, Township of	N/A	None	N/A	None
*Riley TA1, Township of	N/A	None	N/A	None
Roxbury, Town of	February 14, 1975	None	September 4, 1985	None
Rumford, Town of	October 5, 1973	October 29, 1976	July 16, 1980	None
Stoneham, Town of	February 21, 1975	None	January 3, 1986	None
Stow, Town of	January 24, 1975	August 6, 1976	November 14, 1978	None
Sumner, Town of	November 1, 1974	July 19, 1977	September 27, 1985	None
Sweden, Town of	January 17, 1975	None	October 31, 1978	None
*Township C, Township of	N/A	None	N/A	None
*Upper Cupsuptic T04R04WBKP, Township of	N/A	None	N/A	None
Upton, Town of	September 12, 1978	None	April 1, 1987	None

*No Special Flood Hazard Areas Identified

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME (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)
Waterford, Town of	February 14, 1975	None	April 1, 1982	None
West Paris, Town of	July 26, 1974	October 1, 1976	June 3, 1988	None
Woodstock, Town of	February 21, 1975	None	April 1, 1987	None

*No Special Flood Hazard Areas Identified

TABLE 12

FEDERAL EMERGENCY MANAGEMENT AGENCY

OXFORD COUNTY, ME (ALL JURISDICTIONS)

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

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

FISs have been prepared for adjacent communities and are in agreement with this FIS. These include reports prepared by Carroll County, New Hampshire: Town of Conway, Town of Freedom; York County, Maine: Town of Cornish, Town of Parsonsfield; Cumberland County, Maine: Town of Baldwin, Town of Bridgton, Town of Casco, Town of Harrison, Town of Naples, Town of Sebago; Androscoggin County, Maine: Town of Livermore, Town of Mechanic Falls, Town of Minot, Town of Poland, Town of Turner; and Franklin County, Maine: Town of Jay, Town of Rangeley, Town of Wilton (References 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, and 108).

This FIS report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the NFIP.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting FEMA Region I, 99 High Street, 6th Floor, Boston, MA 02110.

9.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Census Bureau, 2000 Census of Population and Housing, Population and Housing Unit Counts, PHC-3-21, Maine, Washington, DC, 2003.

2. National Oceanic and Atmospheric Administration, Climatography of the United States no. 81, Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree Days, 1971-2000: Region 17, Maine, 16 p., 2002.

3. Hodgkins, G. and G. Stewart, Flood of October 1996 in Southern Maine, U.S. Geological Survey Water-Resources Investigations Report 97-4189, 28 p, 1997.

4. U.S. Department of the Interior, Geological Survey, Water Supply Paper 1779-M, Historical Floods in New England, Washington, D.C., 1964.

5. U.S. Army Corps of Engineers, New England Division, Flood Plain Information: Little Androscoggin River, Waltham, Massachusetts, February 1974.

6. U.S. Department of the Interior, Geological Survey, Water Supply Paper 798, The Floods of March 1936, Part 1, New England Rivers, Washington, D.C., 1937.

7. U.S. Department of the Interior, Geological Survey, Open file Report 92-141, Flood of April 1987 in Maine, Augusta, Maine, 1992.

8. U.S. Water Resources Council, Hydrology Committee, Bulletin No. 17b, Guidelines for Determining Flood Flow Frequency, Washington, D.C., September 1981.

9. U.S. Department of the Interior, Geological Survey, Water Resources Data for Maine, Augusta, Maine, published annually.

10. New England River Basins Commission, Androscoggin River Basin Overview, Boston, Massachusetts, September 1981.

11. Ray, Diane, “Town of Canton, The Lazarus Project”, 2007 New England Flood Mitigation Conference, Mystic, Connecticut, April 2007.

12. U.S. Geological Survey, Water Supply Paper 1671, Magnitude and Frequency of Floods in the United States, 1964.

13. State of Maine, Saco River Corridor Commission, "An Act to Establish the Saco River Corridor," Chapter 150, Private and Special Laws, 1974; as amended and modified by Chapter 208 of the Private and Special Laws of 1974.

14. U.S. Department of the Interior, Geological Survey, Water-Supply Papers, Surface Water Supply of the United States, 1902-1960.

15. U.S. Army Corps of Engineers, Existing Flood Forecasting Procedures and Flood Hazard Evaluation: Androscoggin River Basin, Maine and New Hampshire, Waltham, Maine, January 1983.

16. Federal Emergency Management Agency, Flood Insurance Study, Town of Fryeburg, Oxford County, Maine, Washington, D. C., August 14, 1981.

17. Maine Department of Environmental Protection, Maine Shoreland Zoning; A Handbook for Shoreland Owners, Publication Number: DEPLW0674-D008, Augusta, Maine, Spring, 2008.

18. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Rumford, Maine, No. H0119, Scale 1:12,000; 1973; Revised 1976.

19. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 20, Computer Program, Project Formulation Hydrology, Washington, D.C., 1965.

20. U.S. Department of Agriculture, Soil Conservation Service, Flood Hazard Analysis, Conway, New Hampshire, December 1974.

21. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 20, Computer Program for Project Formulation Hydrology, March 1969.

22. U.S. Department of Agriculture, Soil Conservation Service, Flood Hazard Analyses, Crooked River, Harrison and Otisfield , Maine, Washington, D.C., April 1975.

23. U.S. Department of the Interior, Geological Survey, Open-File Report 75-292, A Technique for Estimating the Magnitude and Frequency of Floods in Maine by R. A. Morrill, Augusta, Maine, 1975.

24. U.S. Department of the Interior, Geological Survey, Office of Water Data Collection, Interagency Advisory Committee on Water Data, Guidelines for Determining Flood Flow Frequency, Bulletin 17B, Reston, Virginia, Revised September 1981.

25. U.S. Department of the Interior, Geological Survey, Open-File Report 87-460, Flood of April 1987 in Maine, Massachusetts, and New Hampshire by Richard A. Fontaine, Augusta, Maine, 1987.

26. U.S. Water Resources Council, Hydrology Committee, Bulletin No. 17, Guidelines for Determining Flood Flow Frequency, Washington, D.C., March 1976.

27. U.S. Geological Survey, Water Supply Paper, Surface Water Supply of the United States, 1902-1976.

28. Chow, Ven Te, Handbook of Applied Hydrology, McGraw Hill Book Co., Inc., New York, 1964.

29. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-1 Flood Hydrograph Package, Davis, California, January 1973.

30. U.S. Department of the Interior, Bureau of Reclamation, Design of Small Dams, U.S. Government Printing Office, Washington, D.C., 1974.

31. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 20, Computer Program, Project Formulation Hydrology, Washington, D. C., 1972.

32. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 Feet: East Stoneham, Maine, 1970; Greenwood, Maine, 1967; North Waterford, Maine, 1963; Waterford Flat, Maine, 1983; Kezar Falls, Maine, 1964; Canton, Maine, 1967; Rumford, Maine,1969; East Andover, Maine, 1968; Bryant Pond, Maine, 1967; Mt. Zircon, Maine, 1967; West Paris, Maine, 1967 and 1969; West Sumner, Maine, 1967 and 1969; Brownfield, Maine, 1964; Center Lovell, Maine, 1963; Fryeburg, Maine, 1963; Pleasant Mountain, Maine, 1963; East Andover, Maine, 1968; Ellis Pond, Maine, 1968; West Paris, Maine, 1969 and West Sumner, Maine 1969; Hiram, Maine, 1964; Cornish, Maine, 1964, North Sebago, Maine, 1983.

33. U.S. Department of the Interior, Geological Survey, Water-Resources Investigations Report 99-4008, Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence Intervals, 1999.

34. Fontaine, R.A., Drainage Areas of Surface Water Bodies of the Androscoggin River Basin in Southwestern Maine: U.S. Geological Survey Open-File Report, 78-556C, 1979.

35. American Geophysical Union, Water Resources Research, Comparison of Estimators of Standard Deviation for Hydrologic Time Series, Vol. 18, No. 15, Ty G. D. Tasker and E. J. Gilroy, Washington, D. C., 1982.

36. Hodgkins, G, Estimating the Magnitude of Peak Flows for Streams in Maine for Selected Recurrence Intervals: US Geological Survey Water-Resources Investigations Report 99-4008, 45 p, 1999.

37. Watershed Concepts Division of Hayes, Seay, Mattern and Mattern, 1999, Watershed Information System (WISE), application version 3.0.0.06, 2006.

38. U.S. Department of the Interior, Geological Survey, 15-Minute Series Topographic Maps, Scale 1:62,500, Contour Interval 20 Feet: Bethel, Maine, 1940; Bryant Pond, Maine, 1911; Fryeburg, Maine, 1909; Norway, Maine, 1946; Old Speck Mountain, Maine, 1943; Rumford, Maine, 1972, Poland, Maine, 1956.

39. U.S. Department of Agriculture, Soil Conservation Service, Technical Release No. 61, WSP-2 Computer Program, Washington, D. C., May 1976.

40. U.S. Department of Agriculture, Soil Conservation Service, Flood Hazard Analyses, Ellis River, Towns of Rumford and Andover, Maine, 1976.

41. U.S. Department of Agriculture, Soil Conservation Service, Aerial Photographs, Series LM-SCS-BETHEL-MA, Scale 1:9,600, May 1984.

42. Hoffman, Butter & Associates, Inc., Aerial Photographs, Androscoggin River, Scale 1:6,000, Atlanta, Georgia, April 21, 1976.

43. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, Town of Mexico, Maine, August 1977.

44. Federal Highway Administration, Report FHWA-IP-89-027, 177 pp, Users Manual for WSPRO - A Computer Model for Water-Surface Profile Computations, by James 0. Shearman, Washington, D.C., 1990.

45. Federal Highway Administration, Report FHWA/RD-86/108, Bridge Waterways Analysis Model: Research Report, by James 0. Shearman and others, Washington, D.C., 1986.

46. U.S. Department of the Interior, Geological Survey, Techniques of Water Resources Investigations, Book 3, Chapter A15, Computation of Water-Surface Profiles in Open Channels by Jacob Davidian, Washington, D.C., 1984.

47. U.S. Department of the Interior, Geological Survey, Modified Step-Backwater and Floodway Analyses, No. J635, Provisional Documentation 1977.

48. Kucera International of Mentor, Ohio, Topographic Maps compiled from aerial photographs, Scale 1:4,800, Contour Interval 4 Feet: Canton, Maine, 1985.

49. U.S. Department of the Interior, Geological Survey, Open-File Report, Computer Program E431, Users Manual, Computer Applications for Step-Backwater and Floodway Analyses by James O. Shearman, Washington, D.C., 1976. Revised Program J635, 1977.

50. U.S. Department of the Interior, Geological Survey, Techniques of Water Resources Investigations, Book 3, Chapter A5, Measurement of Peak Discharge at Dams by Indirect Methods, Washington, D. C., 1967.

51. U.S. Army Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water-Surface Profiles, Generalized Computer Program, Davis, California, October 1973.

52. J. W. Sewall Company, Photogrammetric Maps, Scale 1:4,800, Contour Interval Five Feet: Fryeburg, Hiram, and Parsonfield, Maine, January 1978.

53. U.S. Army Corps of Engineers, Hydrologic Engineering Center, Computer Program 72 3-X6-L202, HEC-2 Water-Surface Profiles, Users Manual, Davis, California, October 1973, (revised) November 1976.

54. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet: Canton, Maine, 1967; East Dixfield, Maine, 1968; Livermore Falls, Maine, 1967; Buckfield, Maine, 1967; Casco, Maine, 1983; Mechanic Falls, Maine, 1981; Norway, Maine, 1983; Oxford, Maine, 1980; Lake Auburn West, Maine, 1981; Buckfield, Maine, 1967; Norway, Maine, 1983, Steep Falls, Maine, 1983.

55. U.S. Department of the Interior, Geological Survey, written communication from James 0. Shearman, April 25, 1989.

56. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Denmark, Oxford County, Maine, December 1976.

57. U.S. Army Corps of Engineers, The Hydrologic Engineering Center, Computer Program 723-XG-L202A, HEC-2 Water-Surface Profiles, Users Manual, Davis, California, October 19'13, (revised) November 1976.

58. U.S. Army Corps of Engineers, Hydrologic Engineering Center. HEC-RAS River Analysis System, User's Manual, 1998.

59. U.S. Geological Survey, Water Supply Paper, Surface Water Supply of the United States, Resource Data for Maine, 1961-1976.

60. U.S. Department of the Interior, Geological Survey, Open-File Report 76-499, Computer Program E431, Users Manual, Computer Applications for Step-Backwater and Floodway Analysis, by James 0. Shearman, Washington, D.C., 1976.

61. Tower Publishing Co., Maine Register State Year Book and Legislative Manual, No. 115, Augusta, Maine, 1985.

62. Federal Emergency Management Agency, Flood Insurance Study, Town of Mechanic Falls, Androscoggin County, Maine, Washington, D. C., May 17, 1990.

63. Federal Emergency Management Agency, Flood Insurance Study, Town of Casco, Cumberland County, Maine, November 5, 1980.

64. U.S. Department of Agriculture, Soil Conservation Service, Aerial Photographs, ENM Series, May 1964; ME-CR Series, November 1971.

65. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Otisfield, Cumberland County, Maine, Washington, D.C., January 1975.

66. Federal Emergency Management Agency, Flood Insurance Study, Town of Peru, Oxford County, Maine, May 17, 1990..

67. US Army Corps of Engineers, Hydrologic Engineering Center, HEC-RAS, River Analysis System, version 3.1.3 May 2005.

68. U.S. Department of the Interior, Geological Survey, Water Supply Paper 2339, 38 p., Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains, 1989.

69. U.S. Department of the Interior, Geological Survey, Water-Supply Paper 2441, 133 p., Estimation of Roughness Coefficients for Natural Stream Channels with Vegetated Banks, 1998.

70. U.S. Department of Agriculture, Soil Conservation Service, Topographic Maps compiled from aerial photographs, Scale 1"=400', Contour Interval 4 Feet: Waterford, Maine, November 1971.

71. J.W. Sewall Company, Base Planimetric and Topographic Maps, Scale 1:4,800, Contour Interval 5 feet: Mexico, Maine, 1972.

72. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Andover, Oxford County, Maine, October 31, 1975.

73. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Bethel, Oxford County, Maine, Washington, D.C., October 22, 1976.

74. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Brownfield, Oxford County, Maine, January 1977.

75. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Canton, Oxford County, Maine, August 2, 1974.

76. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Lovell, Oxford County, Maine, July 2, 1976.

77. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Oxford, Oxford County, Maine, November 5, 1976.

78. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Paris, Oxford County, Maine, October 22, 1976.

79. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Peru, Oxford County, Maine, June 18, 1976.

80. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Porter, Oxford County, Maine, Scale 1:24,000, 1975.

81. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Waterford, Oxford County, Maine, December 12, 1975.

82. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of West Paris, Oxford County, Maine, October 1, 1976.

83. Federal Emergency Management Agency, Flood Insurance Study, Town of Buckfield, Oxford County, Maine, Washington, D.C., November 1, 1985.

84. Federal Emergency Management Agency, Flood Insurance Study, Town of Dixfield, Oxford County, Maine, Washington, D.C., November 1, 1985.

85. Federal Emergency Management Agency, Flood Insurance Study, Town of Newry, Oxford County, Maine, Washington, D.C., November 1, 1985.

86. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Flood Prone Area Maps, Scale 1:24,000, Contour Interval 20 feet: Dixfield, Maine, 1974.

87. U.S. Department of the Interior, Geological Survey, 15-Minute Series Flood Prone Area Map, Scale 1:62,500, Contour Interval 20 feet: Rumford, Maine, 1972.

88. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Norway, Oxford County, Maine, July 16, 1976.

89. U.S. Department of the Army, Corps of Engineers, Topographic Maps, Androscoggin Valley Flood Control Project - Rumford Falls Reservoir, Scale 1:4800, Contour Interval 10 feet: Augusta, Maine, 1937.

90. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Town of Hiram, Oxford County, Maine, January 1973.

91. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Conway, Carroll County, New Hampshire. Washington, D.C, June 3, 2002.

92. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Freedom, Carroll County, New Hampshire. Washington, D.C, July 3, 1995.

93. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Cornish, York County, Maine. Washington, D.C, September 18, 1979.

94. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Parsonfield, York County, Maine. Washington, D.C, June 18, 1979.

95. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Baldwin, Cumberland County, Maine. Washington, D.C, January 2, 1980.

96. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Bridgton, Cumberland County, Maine. Washington, D.C, November 3, 1981.

97. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Casco, Cumberland County, Maine. Washington, D.C, November 5, 1980.

98. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Harrison, Cumberland County, Maine. Washington, D.C, October 15, 1981.

99. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Naples, Cumberland County, Maine. Washington, D.C, October 1, 1981.

100. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Sebago, Cumberland County, Maine. Washington, D.C, March 1, 1981.

101. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Livermore, Androscoggin County, Maine. Washington, D.C, May 3, 1990.

102. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Mechanic Falls, Androscoggin County, Maine. Washington, D.C, May 17, 1990.

103. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Minot, Androscoggin County, Maine. Washington, D.C, May 17, 1990.

104. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Poland, Androscoggin County, Maine. Washington, D.C, May 20, 1996.

105. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Turner, Androscoggin County, Maine. Washington, D.C, May 5, 2003.

106. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Jay, Franklin County, Maine. Washington, D.C, November 15, 1989.

107. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Rangeley, Franklin County, Maine. Washington, D.C, September 8, 1999.

108. Federal Emergency Management Agency, Flood Insurance Rate Map, Town of Wilton, Franklin County, Maine. Washington, D.C, August 23, 2001.