USGS
science for a changing world

Prepared for the
Federal Emergency Management Agency, Region I and
the Maine Floodplain Management Program, State Planning Office

Scoping of Flood Hazard Mapping Needs for Androscoggin County, Maine

By Charles W. Schalk and Robert W. Dudley

Open-File Report 2007–1131

U.S. Department of the Interior
U.S. Geological Survey

Contents

CONVERSION FACTORS AND ABBREVIATIONS

Multiply	By	To obtain
Length		
inch (in.)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
Area		
square foot (ft^2)	0.09290	square meter (m^2)
square mile (mi^2)	2.590	square kilometer (km^2)
Volume		
cubic foot (ft^3)	0.02832	cubic meter (m^3)
Slope		
foot per mile (ft/mi)	0.1894	meter per kilometer (m/km)
Velocity and Flow		
foot per second (ft/s)	0.3048	meter per second (m/s)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)

OTHER ABBREVIATIONS USED IN REPORT

BAD	Best Available Data
BFE	Base Flood Elevation
CAC	Community Assistance Contact
CAV	Community Assistance Visit
DFIRM	Digital Flood Insurance Rate Map
FEMA	Federal Emergency Management Agency
FHBM	Flood Hazard Boundary Map
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
GIS	Geographic Information System
LOMC	Letter of Map Change
MEGIS	Maine Office of Geographic Information Systems
MFMP	Maine Floodplain Management Program
MNUSS	Mapping Needs Update Support System
NFIP	National Flood Insurance Program
USGS	United States Geological Survey

Scoping of Flood Hazard Mapping Needs for Androscoggin County, Maine

By Charles W. Schalk and Robert W. Dudley

Section 1. Introduction

This report was prepared by the U.S. Geological Survey (USGS) Maine Water Science Center as the deliverable for scoping of flood hazard mapping needs for Flood Insurance Study revision in Androscoggin County, Maine, under Federal Emergency Management Agency (FEMA) Inter-Agency Agreement Number HSFE01-06-X-0020. This section of the report explains the objective of the task and the purpose of the report.

Background

The Federal Emergency Management Agency (FEMA) developed a plan in 1997 to modernize the FEMA flood mapping program. FEMA flood maps delineate flood hazard areas in support of the National Flood Insurance Program (NFIP). FEMA's plan outlined the steps necessary to update FEMA's flood maps for the nation to a seamless digital format and streamline FEMA's operations in raising public awareness of the importance of the maps and responding to requests to revise them. The modernization of flood maps involves conversion of existing information to digital format and integration of improved flood hazard data as needed and as funds allow. To determine flood mapping modernization needs, FEMA has established specific scoping activities to be done on a county-by-county basis for identifying and prioritizing requisite flood-mapping activities for map modernization. The U.S. Geological Survey (USGS), in cooperation with FEMA and the Maine Floodplain Management Program (MFMP) State Planning Office, began scoping work in 2006 for Androscoggin County. Scoping activities included assembling existing data and map needs information for communities in Androscoggin County, documentation of data, contacts, community meetings, and prioritized mapping needs in a final scoping report (this document), and updating the Mapping Needs Update Support System (MNUSS) Database with information gathered during the scoping process.

The average age of the FEMA floodplain maps in Androscoggin County, Maine, is at least 17 years. Most studies were published in the early 1990s, and some towns have partial maps that are more recent than their study date. Since the studies were done, development has occurred in many of the watersheds and the characteristics of the watersheds have changed with time. Therefore, many of the older studies may not depict current conditions nor accurately estimate risk in terms of flood heights or flood mapping.

Scope of Work

The following is the scope of work as defined in the FEMA/USGS Statement of Work:

Task 1: Collect data from a variety of sources including community surveys, other Federal and State Agencies, National Flood Insurance Program (NFIP) State Coordinators, Community Assistance Visits (CAVs), and FEMA archives. Lists of mapping needs will be obtained from the MNUSS database, community surveys, and CAVs, if available. FEMA archives will be inventoried for effective FIRM panels, FIS reports, and other flood-hazard data or existing study data. Best available base map information, topographic data, flood-hazard data, and hydrologic and hydraulic data will be identified. Data from the MFMP database also will be utilized.

Task 2: Contact communities in Androscoggin County to notify them that FEMA and the State have selected them for a map update, and that a project scope will be developed with their input. Topics to be reviewed with the communities include (1) purpose of the Flood Map Project (for example, the changes that have prompted the map update); (2) the community's mapping needs; (3) the community's available mapping, hydrologic, hydraulic, and flooding information; (4) target schedule for completing the project; and (5) the community's engineering, planning, and geographic information system (GIS) capabilities.

On the basis of the collected information from Task 1 and community contacts/meetings in Task 2, the USGS will develop a draft project scope for the identified mapping needs of the communities in Androscoggin County. The draft project scope will summarize available information, evaluate effective FIS data for use in the project, and identify other data and the source of data needed to complete the project. The draft project scope will establish prioritized mapping needs according to census and waterbody criteria and estimate schedules and associated costs for completion of the components of flood mapping.

The following subject areas are documented in this report as set forth in the statement of work: available flood-mapping-related data and documented mapping needs, community meetings and contacts, scope and prioritization of mapping needs, and project methods. Scoping-level time and costs for identified mapping needs will be provided as a document separate from this report. The appendix section of this report provides a community by community summary of information obtained and used in the scoping process for all 14 communities in Androscoggin County that have Flood Insurance Rate Maps (FIRMs) and (or) Flood Insurance Studies (FISs) (table 1).

Table 1. Organized communities in Androscoggin County, Maine.
[CID, Community identification number; FIRM, Flood Insurance Rate Map; *, Community has a published Flood Insurance Study]

Community	CID	Land area, in square miles	Population (year 2000)	Population density (year 2000), in people per square mile	FIRM date
Auburn	230001	65.7	23,203	353	18-Oct-95*
Durham	230002	39.0	3,381	86.7	4-May-88*
Greene	230475	35.2	4,076	116	3-May-90*
Leeds	230003	43.4	2,001	630	16-Jul-90*
Lewiston	230004	35.5	35,690	1,005	28-Sep-79*
Lisbon	230005	23.8	9,077	381	4-Mar-85*
Livermore	230006	39.4	2,106	53.5	5-Aug-91*
Livermore Falls	230173	20.4	3,227	158	3-May-90*
Mechanic Falls	231007	11.2	3,138	280	17-May-90*
Minot	230008	29.7	2,248	75.7	17-May-90*
Poland	230009	47.2	4,866	103	20-May-96*
Sabattus	230011	26.9	4,486	167	15-Feb-80*
Turner	230010	62.7	4,972	79.3	5-May-03*
Wales	230439	16.9	1,322	78.2	21-Feb-75*
	Total	497	103,843	209 (average)	

Description of Androscoggin County

Androscoggin County in southern Maine (fig. 1) encompasses an area of 497 square miles (mi^2) and comprises 14 municipalities (towns and(or) cities) (table 1, fig. 1). The total population in Androscoggin County reported by the 2000 census was approximately 103,850 people. The population for the 2000 census represents a 1-percent decrease from the population reported in the 1990 census (105,260 people) and a 4-percent increase over the population reported in the 1980 census (99,660 people) (University of Maine, 2004).

Androscoggin County contains or borders 860 mapped ponds and lakes ranging in surface area from less than 0.1 acre to 4,300 acres for a total surface area of 18,176 acres (28 mi^2), based on GIS analysis. Median pond size is 0.3 acre; Thompson Lake, in the town of Poland, is the largest waterbody. Other notable lakes in Androscoggin County include Lake Auburn (2,280 acres), Sabattus Pond (1,960 acres), the Range Ponds (627 acres), and Androscoggin Lake (4,020 acres). Withdrawals by the Auburn and Lewiston water districts account for about 47 percent of Lake Auburn's annual outflow, or about 392 million cubic feet (ft^3) (Dudley, 2004). Lake Auburn serves as the principal water supply for about 45,000 people, or 43 percent of Androscoggin County. Two ponds in Livermore (Moose Hill and Parkhurst) also are used for public water supply.

Androscoggin County includes approximately 750 mi of rivers and streams (fig. 2). Androscoggin River is the largest river in Androscoggin County, flowing approximately from north to south through the county. Androscoggin River drains an area of about 3,420 mi^2 where it crosses the county line into Cumberland County.

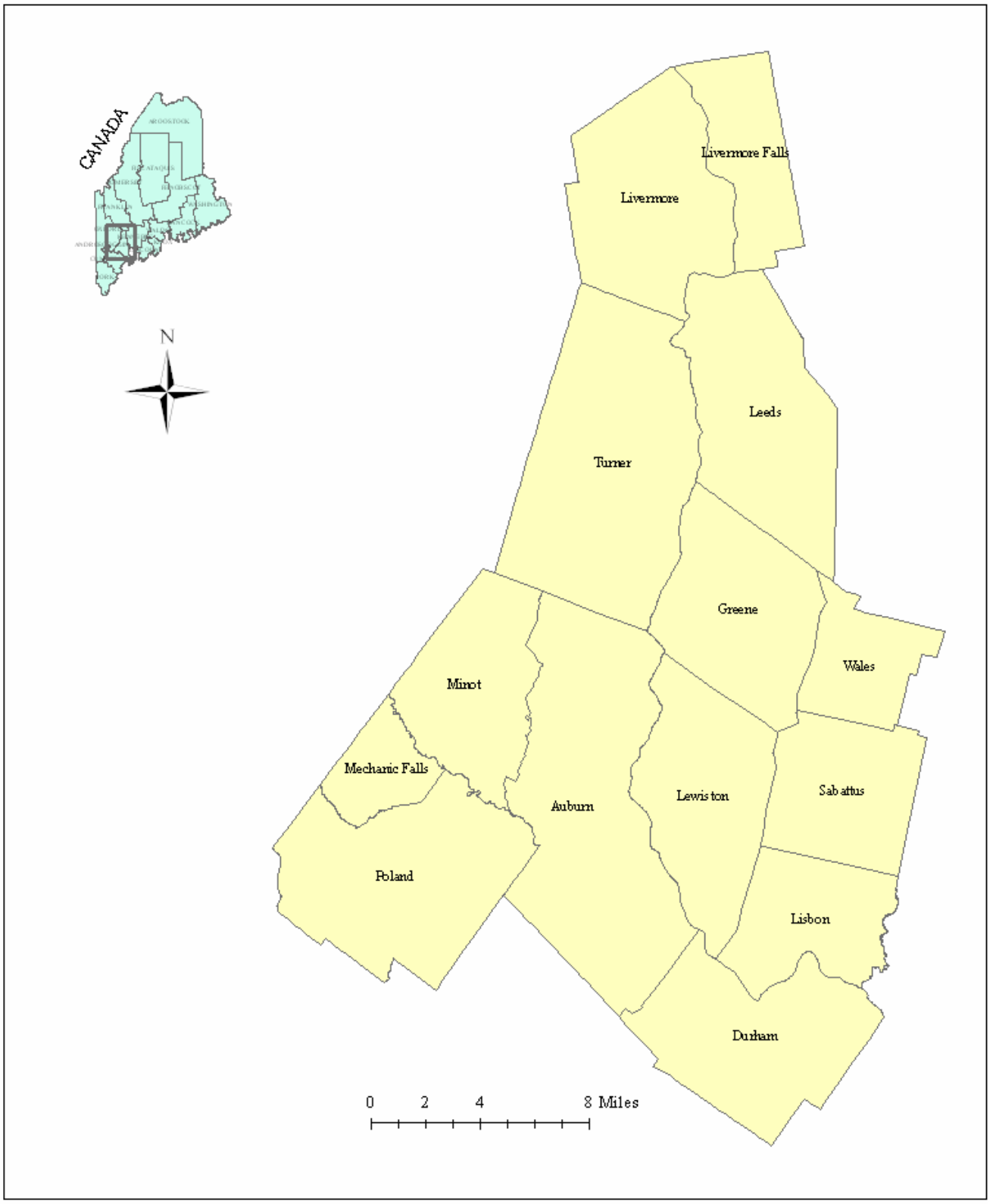


Figure 1. Communities in Androscoggin County, Maine.

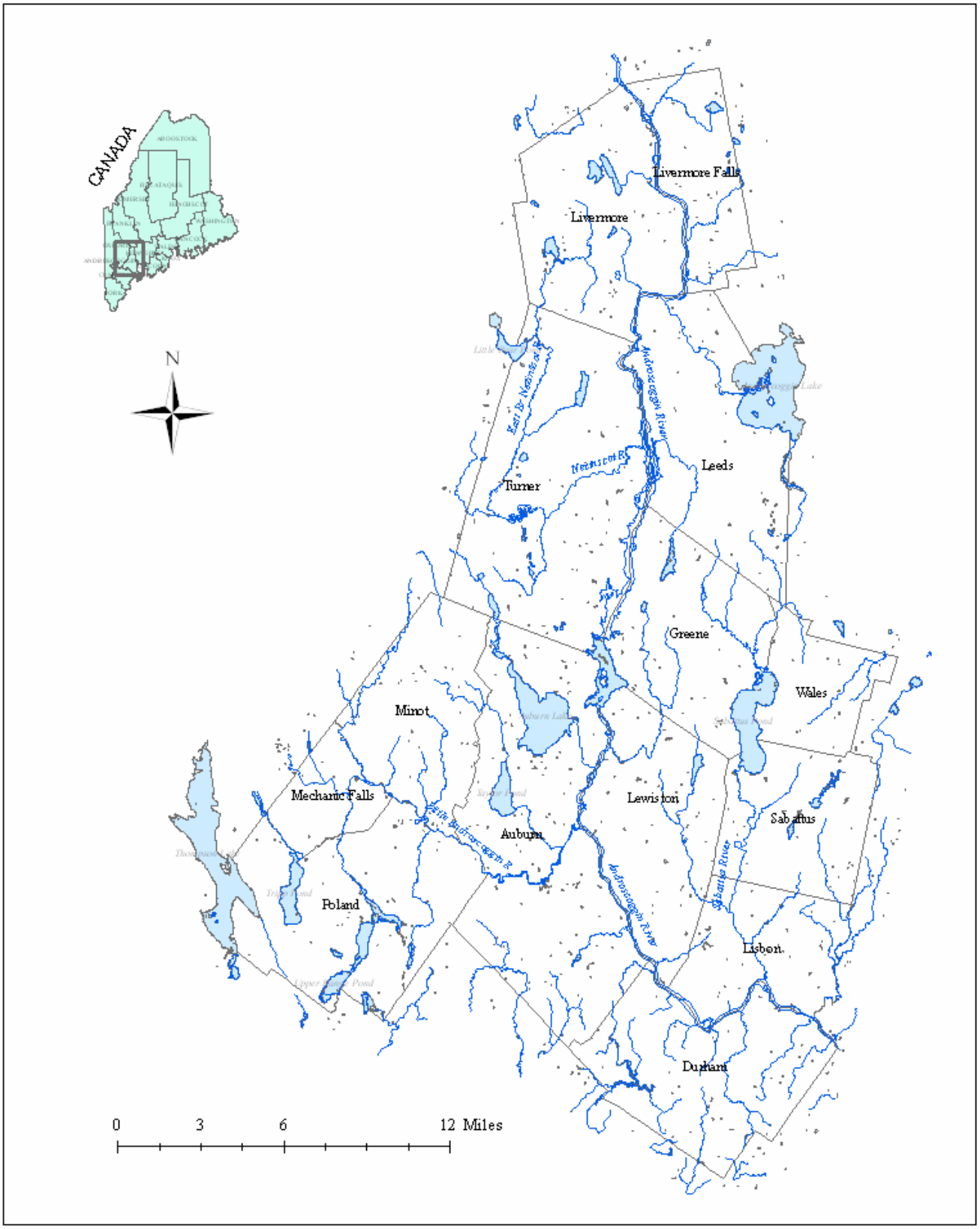


Figure 2. Hydrology of Androscoggin County, Maine.

Section 2. Available Flood-Mapping Data and Mapping Needs

Flood-mapping data and mapping needs were compiled as part of this effort by means of state and community contacts, community scoping meetings, and manual and on-line data searches. This report is a comprehensive compilation of data acquired for scoping tasks relating to Androscoggin County.

Community FISs and FIRMs

Androscoggin County includes 13 communities that have FIRMs with active FIS reports and 1 community (Wales) that has a FIRM with only unnumbered A-zones. The effective map dates range from February 1, 1975 (Wales) to May 5, 2003 (Turner). Twenty-five percent of the FIRMs in Androscoggin County are 20 years old or older; 93 percent are 10 years or older. The oldest FIRM is 31 years old, the most recent is 3 years old, and the average age is approximately 17 years. It is important to note that the effective map date is the date the map was last revised. Some revisions were minor adjustments and did not affect entire map panels. As a result, much of the information depicted on the county's floodplain maps is likely to be older than 17 years.

State of Maine Best Available Data (BAD) for Unnumbered A-Zones

Over several years, MFMP has developed information about the best available data (base flood elevations) for water bodies designated as unnumbered "A" zones on flood maps for communities throughout the State. The base flood elevations tabulated in this data set are derived from hydrologic and(or) hydraulic studies of water bodies that may be published in FISs for adjacent communities or published as part of flood studies not directly related to FEMA FISs (e.g. Army Corps of Engineer projects, Natural Resources Conservation Service projects, and Letters of Map Changes). These data are used in this report as part of the prioritization of mapping needs for a community (see section: Scope and Prioritization of Mapping Needs in Androscoggin County). These data are documented in the appendices of this report for each community. Information about these data is available from the MFMP web site at: *http://www.state.me.us/spo/flood/bad/,* accessed on September 8, 2006.

Letters of Map Change (LOMCs)

A Letter of Map Change (LOMC) is a letter issued by FEMA in response to a request to revise or amend an effective National Flood Insurance Program (NFIP) map to remove a property or reflect changed flooding conditions on the effective map. LOMCs may include Letters of Map Amendments (LOMAs), Letters of Map Revisions (LOMRs), and Letters of Map Revision based on Fill (LOMR-F) as defined below:

LOMAs: A LOMA is an official amendment, by letter, to an effective NFIP map. A LOMA establishes the property location in relation to the Special Flood Hazard Area (SFHA). There is no appeal period for LOMAs, and the letter becomes effective the date that it is sent.

LOMRs: A LOMR is an official revision, by letter, to an effective NFIP map. A LOMR may change flood-insurance risk zones, floodplain and(or) floodway boundary delineations, planimetric features, and(or) Base Flood Elevations (BFEs). The effective date of a LOMR depends on the type of change requested. For example, some LOMR's are effective on the date that the letter is issued and others become effective following an appeal period (typically 30 to 90 days or 6 months).

LOMR-F: A Letter of Map Revision based on Fill (LOMR-F) may be filed as a special case of the LOMR. A LOMR-F provides FEMA's determination concerning whether a structure or parcel has been elevated on fill above the BFE and excluded from the SFHA. A LOMR-F is an official revision, by letter, to an effective NFIP map. The letter becomes effective on the date that it is sent.

In addition to the categories above, *conditional* LOMAs, LOMRs, and LOMR-Fs may be issued by FEMA to comment on a proposed project or change. The letter does not revise an effective NFIP map, but indicates whether the project, if built as proposed, would be recognized by FEMA.

LOMCs in Androscoggin County

The presence and number of LOMCs in a community can be an indication of increasing development in a community and(or) problematic flood hazard boundaries. LOMCs are used in this report as part of the prioritization of mapping needs for a community (see section: Scope and Prioritization of Mapping Needs in Androscoggin County). LOMC data for Androscoggin County are summarized in table 2. A Geographic Information System (GIS) digital data set representing georeferenced locations of LOMCs in Androscoggin County was created as part of the scoping effort and uploaded to the Watershed Information System (WISE, a software package used by FEMA to catalogue scoping needs) database.

Table 2. Summary of letters of map change (LOMCs) in Androscoggin County, Maine.
[CID, Community identification number]

Community name	CID	Current map date	Map age (years)	Number of LOMCs
Auburn	230001	18-Oct-95*	11	4
Durham	230002	4-May-88*	18	1
Greene	230475	3-May-90*	16	1
Leeds	230003	16-Jul-90*	16	1
Lewiston	230004	28-Sep-79*	27	3
Lisbon	230005	4-Mar-85*	21	1
Livermore	230006	5-Aug-91*	15	0
Livermore Falls	230173	3-May-90*	16	0
Mechanic Falls	231007	17-May-90*	16	0
Minot	230008	17-May-90*	16	0
Poland	230009	20-May-96*	10	6
Sabattus	230011	15-Feb-80*	26	2
Turner	230010	5-May-03*	3	4
Wales	230439	21-Feb-75*	31	0

Community Flood Ordinances

The MFMP provides all participating communities (92 percent of the State's communities) with model floodplain management ordinances, guidance and review, and maintains all community flood ordinances on file. The contact for community flood ordinances is the MFMP:

Brigitte Ndikum-Nyada
Planning and Research Associate
Maine Floodplain Management Program
State Planning Office
184 State Street, 38 SHS
Augusta, ME 04333
Tel: 207-287-8932
Fax: 207-287-6489

Mapping Needs Update Support System (MNUSS)

In accordance with section 575 of the National Flood Insurance Reform Act of 1994 (Federal Emergency Management Agency, 1994), FEMA assesses "…the need to revise and update all floodplain areas and flood risk zones identified, delineated, or established based on an analysis of all natural hazards affecting flood risks." FEMA initiated the Mapping Needs Assessment (MNA) process, which identifies and prioritizes flood hazard mapping needs for communities nationwide. As part of this effort, FEMA developed MNUSS, which is an interactive, web-based software application that maintains an inventory of needs for future map updates. In particular, MNUSS stores information on the following two types of update needs:

Map Maintenance Needs: Includes changes to base map information, such as the addition of new roads, changes to corporate limits, and incorporation of LOMCs.

Flood Data Update Needs: Includes changes to flood hazard areas as a result of changes in hydrologic and hydraulic conditions, changes to Base Flood Elevations (BFEs), and(or) changes in the floodplain delineation.

Mapping needs may be viewed and entered into MNUSS by a variety of parties, including FEMA, state NFIP coordinators, study contractors, Cooperating Technical Partners (CTPs), and other Federal agencies, such as the U.S. Army Corps of Engineers (USACE) and the USGS. All potential entries are reviewed and approved by the FEMA MNUSS controller prior to entry into the system.

MNUSS entries for Androscoggin County are summarized in table 3. MNUSS records exist only for the towns of Durham and Turner. Of the 12 MNUSS entries on record, seven are not valid (having been addressed during Turner's updates in 2003), three require restudy (Durham), and two require floodways (Turner). All of the MNUSS entries relate to changes in base flood elevations (BFEs), and all are expected to increase the BFE by 1 to 5 ft.

For the scoping process, existing entries in MNUSS were retrieved by USGS and reviewed with MFMP and community representatives. The review process resulted in the identification of duplicate, outdated, missing, and(or) erroneous entries. These findings will provide the basis for updates to MNUSS or its successor upon completion of the scoping report. Existing MNUSS entries are compiled in appendix C.

Table 3. Summary of entries in the Mapping Needs Update Support System (MNUSS) for Androscoggin County, Maine.

[CID, Community Identification number; MFMP, Maine Floodplain Management Program; BFE, base flood elevation; DFIRM, Digital Flood Insurance Rate Map; BAD, best available data; NRCS, Natural Resources Conservation Service; --, not applicable]

Community name	CID	Number	MFMP comment	Anticipated BFE change
Auburn	230001	0	--	--
Durham	230002	3	Requires restudy	Increase greater than 5 feet
Greene	230475	0	--	--
Leeds	230003	0	--	--
Lewiston	230004	0	--	--
Lisbon	230005	0	--	--
Livermore	230006	0	--	--
Livermore Falls	230173	0	--	--
Mechanic Falls	231007	0	--	--
Minot	230008	0	--	--
Poland	230009	0	--	--
Sabattus	230011	0	--	--
Turner	230010	7	Addressed in 2003 study	Increase greater than 5 feet
Turner	230010	2	Floodways needed	Increase greater than 5 feet
Wales	230439	0	--	--

Community Assistance Visits (CAVs) and Community Assistance Contacts (CACs)

CAVs and CACs provide assistance to communities regarding the administration and enforcement of their floodplain management ordinances. A CAV is a scheduled visit (on the date opened) to an NFIP community for the purpose of conducting a comprehensive assessment of the community's floodplain management program. A CAC is used to establish a contact with a community for the purpose of determining if any problems or issues exist and to offer the community assistance if necessary. CACs can be conducted by means of a telephone call or brief visit. "Date opened" refers to the date that the visit or call was initiated, whereas "date closed" refers to the date that the results of the assistance call or visit is finalized. CAV and CAC data for the county are presented in table 4.

Table 4. Summary of Community Assistance Visits (CAVs) and Community Assistance Contacts (CACs) in Androscoggin County, Maine.

[CID, Community Identification number; FEMA, Federal Emergency Management Agency; --, no close date]

CID	Community name	Date opened	Agency	Type	Date closed
230001	Auburn	6/09/1998	FEMA	CAV	8/14/1998
230002	Durham	9/16/1998	STATE	CAC	8/06/1999
230002	Durham	8/04/2004	STATE	CAC	--
230475	Greene	8/31/1995	STATE	CAC	9/26/1995
230475	Greene	9/24/1998	STATE	CAC	6/07/1999
230003	Leeds	7/21/1993	STATE	CAC	--
230004	Lewiston	1/21/1993	STATE	CAV	2/08/1993
230005	Lisbon	6/30/1992	STATE	CAC	9/08/1992
230006	Livermore	4/11/1994	STATE	CAC	5/16/1994
230173	Livermore Falls	6/25/1993	STATE	CAC	9/01/1993
231007	Mechanic Falls	1/26/1994	STATE	CAC	3/22/1994
230008	Minot	8/24/1995	STATE	CAC	9/29/1995
230009	Poland	7/23/1992	STATE	CAC	9/04/1992
230011	Sabattus	7/28/1995	STATE	CAC	8/11/1995
230010	Turner	5/01/1991	STATE	CAC	5/13/1991

GIS Data

Most GIS data in Maine reside with the Maine Office of GIS (MEGIS) as the agency acts as a central repository for these data. Although not every community shares their GIS data with MEGIS, many data sets are shared and served over the Internet. Data can be accessed on the MEGIS web site at: http://apollo.ogis.state.me.us/. Community-specific data that are not shared with MEGIS are documented as part of the community scoping-meeting process (see interview data in Appendix B). All data served by MEGIS are referenced to North American Datum 1983 (NAD83), Universal Transverse Mercator (UTM) Zone 19, in meters, and are available to FEMA.

Base Map Data

Base map layers maintained by MEGIS include features such as roads, streams, and political boundaries. Base map data layers have been acquired from a variety of sources including the USGS and represent many of the feature types found on USGS topographic maps. More recently developed data were derived from various sources providing improved base map accuracy. Existing coverages maintained by MEGIS can be linked to or viewed at the following URL: http://apollo.ogis.state.me.us/

The southern part of Androscoggin County has detailed digital orthophotography available at 0.5-foot resolution; the 0.5-foot (each image pixel representing a planimetric square 0.5 feet on a side) imagery data set is a true-color mosaic of high-resolution digital orthophotographs produced from aerial photos collected over areas of southwest Maine in April 2001 (fig. 3). The remainder of the county is covered by 1-foot and 2-foot resolution digital orthophotographs produced from aerial photos collected over southwest Maine in spring 2003 (fig. 3). Community-specific aerial photographs are documented as part of the community scoping-meeting process (Appendix B).

The following cities and towns indicated during the interview process that they have base-map data available in some form:

Auburn – April 2006, scale 1"=600', color, digital ortho.

Lewiston – 1997 and 2001 photos, scale not known.

Lisbon – 1998 state ice storm photos, color.

Turner – Flown by Sewall, 2001; MEGIS should have these data.

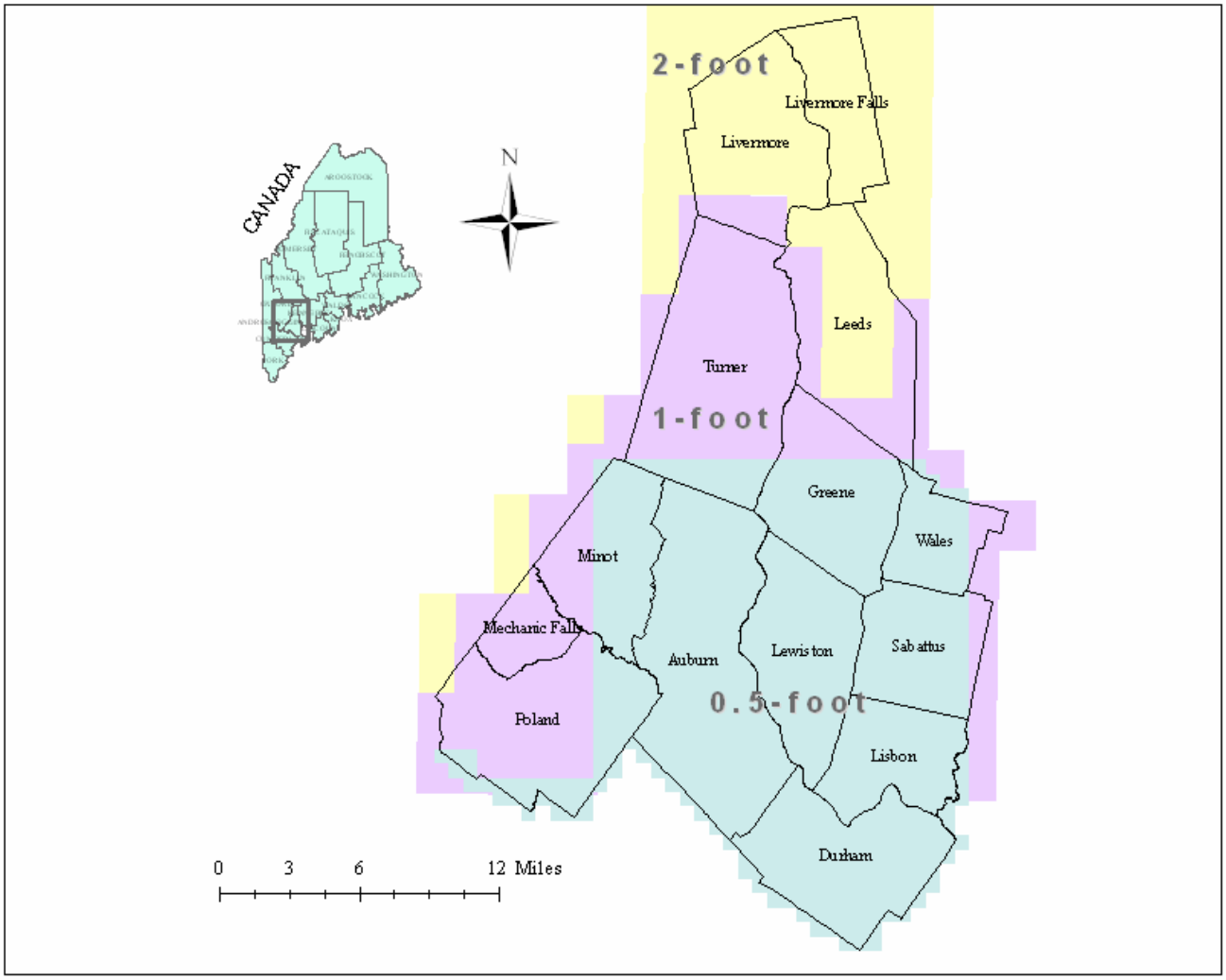


Figure 3. Orthophotography indices for Androscoggin County, Maine. Indices indicate coverage of 0.5-foot (each image pixel representing a planimetric square 0.5 foot on a side, shaded green), 1-foot (pink), and 2-foot (yellow) orthophotography archived and served through the internet by the Maine Office of Geographic Information Systems (MEGIS).

Topographic Data

Digitally scanned USGS 7.5-minute quadrangles provide topographic data for the entire state of Maine with 10- and 20-ft contour intervals, variable by location. Digital Elevation Models (DEM) also are available through the USGS National Elevation Dataset (NED). The NED has been developed by merging the highest-resolution, best quality elevation data available across the United States into a seamless raster format. NED horizontal datum for Maine is NAD83 and vertical datum is North American Vertical Datum 1988 (NAVD88). The NED is continually updated as best available DEM data become available. DEM data with 30 meter (m) resolution (each raster pixel represents a planimetric square 30 meters on a side) are available for the entire state of Maine. DEM data with 10-m resolution (1/3 arc second) are available for the entire state of Maine except for extreme northern Somerset and Oxford Counties. DEM data can be downloaded through the USGS Seamless Data Distribution Web site at *http://seamless.usgs.gov/web site/seamless/viewer.ph.*

The Maine Department of Transportation (MDOT) routinely collects detailed topographic data for highway projects. The data are typically limited to an area within 300 ft of the centerline of the highway. The scope, scale, and accuracy of the data are project specific and depend on the flight level of the survey. MDOT does not maintain any kind of searchable database cataloging these data. The MDOT Survey and Photogrammetric Group is willing to search their files for available data if they are provided a GIS shapefile of an area of interest. The primary contact for topographic data from the MDOT Survey and Photogrammetric Group is Tim Liseige, Photogrammetric and Control Engineer, (207) 624-3493, *tim.liseige@maine.gov*. Seven MDOT projects, dated 1965–79, intersect streams that were identified as needing updated flood-insurance studies for Androscoggin County (section *Prioritization of Waterbodies in Androscoggin County*), although the length of streams was not determined (table 5).

Table 5. Maine Department of Transportation mapped projects that intersect streams in Androscoggin County identified as needing updated flood-insurance studies.

Community	Description	Project	Waterbody	Date
Lewiston, Auburn	Circumferential	932-1(501)	Androscoggin River, Taylor Pond; Bobbin, Stetson, and Taylor Brooks	12/1/1968
Lewiston, Auburn	Minot Avenue - Center Street	D 951-9(81)	Androscoggin River	11/22/1972
Auburn	Routes 11, 121	F-017-1(16)	Little Andro-scoggin River	5/2/1969
Auburn	Topographic survey		Moose Brook	4/25/1979
Auburn	Routes 4, 100, 202; I-95	218(2) & 21-2(2)	Little Andro-scoggin River	4/25/1979
Livermore Falls	Route 4	F-021-1(11)	Androscoggin River	4/21/1965
Livermore Falls	Routes 4, 17	F-021-1(11)	Androscoggin River	4/21/1965

Community-specific topographic data are documented as part of the community scoping-meeting process (Appendix B). The following municipalities indicated during the interview process or to the State Planning Office that they have topographic data in some form:

Auburn – 2-ft contours citywide, digital, recent.

Lewiston – 2-ft contours citywide, digital, recent.

Hydrography Data

MEGIS, in cooperation with the USGS, is currently enhancing Maine's 1:24,000 digital hydrography data to create National Hydrography Dataset (NHD) high-resolution data (spatial data describing hydrologic features). The NHD data are partitioned into the following layers: streams, ponds, rivers, coast, and National Wetlands Inventory (NWI) data. Progress in this effort is ongoing—the current status of these data can be determined by contacting MEGIS at (207) 624-8800 or by visiting their web site *http://apollo.ogis.state.me.us/.* NHD data are available for download from the NHD geodatabase at *http://nhdgeo.usgs.gov/viewer.htm.*

Community-specific hydrography data are documented as part of the community scoping-meeting process (Appendix B). The following towns indicated during the interview process that they have hydrography data available in some form:

Auburn – Taylor Brook and Bobbin Mill Brook.

Livermore Falls – Contact Darrell Brown of Maine Land Development; assorted data throughout town.

Community GIS Contact Information

GIS contact information obtained through community scoping meetings is provided in Appendix B for each community as part of the interview data. Additional resources were identified through the Androscoggin Valley Council of Governments (AVCOG) (*http://www.avcog.org*), which serves partly as a GIS resource center for Androscoggin County. AVCOG often uses data available through MEGIS to respond to calls from towns for hardcopy maps. The maps are usually used for planning purposes, such as zoning maps and future land-use maps. The contact at AVCOG is Barbara Fortier, (207) 783-9186, *bfortier@avcog.org*, 125 Manley Road, Auburn, Maine, 04210.

Representatives of Poland and Turner indicated that they hope to have GIS capabilities within the next two years. Communities that have GIS capabilities include:

Auburn – contact Gary Johnson, 207-333-6601 x 1138.

Greene – contact the fire chief; they may have some ArcView licenses.

Lewiston - contact Jim Ward, GIS Coordinator, 207-784-5753.

Lisbon - contact Ryan Leighton, town engineer, 207-353-3000 x 116.

Community Meetings and Contacts

A community scoping meeting was held for Androscoggin County at AVCOG headquarters on Tuesday, December 12, 2006, from 11:30 a.m. to 2:00 p.m. An invitation letter (with agenda) specifying the time, place, and purpose of the meeting was mailed to at least two community officials in every municipality. The letters were addressed to the community code enforcement officer and to the community manager or first select person. Example copies of the letter and meeting agenda are

attached to this report. Thirteen representatives from nine communities and AVCOG attended the meeting (Livermore, Mechanic Falls, Minot, Sabattus, and Wales did not attend).

The goals of these meetings were to:

- Inform the communities of the nature and the intent of the flood map update process, and
- Solicit community input and discuss the flood-prone areas that communities would like to include as a part of the flood map update.

Robert Dudley, USGS Maine Water Science Center, and Tom Marcotte, MFMP, conducted the meeting with support from Charles Schalk (USGS) and Ellen O'Brien and Michael Montagna (MFMP). Community representatives were provided an overview of the Map Modernization program, the map production schedule, and the technical process.

The latter part of the meeting involved breaking out into small groups of community representatives with group leaders from USGS and MFMP. The group leaders administered and assisted with the completion of map needs interview forms (example attached, Appendix D). Community representatives were provided copies of their community's flood maps and were encouraged to document problem areas, concerns, and so forth, as necessary. Community representatives were asked to explain and prioritize their needs if possible. MNUSS entries were reviewed with community representatives for verification. The marked-up flood maps reside with the MFMP.

During the scoping meetings, the MFMP's Best Available Data (BAD) were reviewed with each community representative if BAD data existed for that community. The review was done to make the community aware of the information if they were not already aware of it, and to solicit input on BAD data if any additional information was available to the community that was not listed in the State Planning Office's BAD database.

The following three subject areas encompass the data gathered from the scoping meeting process and completion of interview forms: (1) community contact information, (2) areas of the existing flood maps where there are significant problems (poor mapping or development pressures) or changes to hydrologic/hydraulic conditions, and (3) community mapping resources. The data from the scoping meetings were entered into the WISE tool and are reported for each community in the Appendices as part of the interview data (Appendices A, B, and C).

Scope and Prioritization of Mapping Needs in Androscoggin County

Two prioritization schemes are presented in this section. The first scheme uses criteria provided by FEMA and MFMP to rank *communities* in Androscoggin County having the greatest need for updated mapping on the basis of risk, as quantified in census block-group data. This ranking meets the goals of the map modernization process as described in FEMA's mid-course adjustment (Federal Emergency Management Agency, 2006). The second scheme uses the results of the first, plus additional information about waterbodies according to community and MFMP representatives, to rank *flood hazards* (waterbodies) in Androscoggin County having the greatest need for updated mapping. This ranking can be used by FEMA to maximize the benefit of any future engineering studies.

Prioritization of Towns in Androscoggin County

USGS staff (Robert Dudley, Charles Schalk) met with MFMP staff (Lou Sidell, Tom Marcotte) in July 2006 as an initial kick-off meeting for the scoping process. An action item resulting from that meeting involved MFMP staff arriving at a list of criteria that should be considered for prioritizing potential mapping needs of towns in the county. MFMP decided that the 8 criteria identified by FEMA during their midcourse adjustment were adequate for assessment of priority by town and(or) census block. These 8 criteria are based on block-group data provided by the U.S. Census Bureau and are used to compute census block group risk scores. Table 6 lists the criteria and their data source.

Table 6. Maine Floodplain Management Program criteria for prioritization of community-based flood mapping needs in Androscoggin County.

[FIA, Federal Insurance Administration]

Criterion	Data source
Population density	Census block group data
Housing unit density	Census block group data
Claims density	FIA Claims dataset
Repetitive losses claims density	FIA Claims dataset
Repetitive loss properties density	FIA Claims dataset
Policies density	County distribution
Disasters	County distribution
Population growth from 1990-2000	County distribution

Scores for each of the criteria listed in table 6 were calculated and normalized for each census block group included in Androscoggin County. The normalization process encompassed two steps. First, the calculated value for each block group was compared with the range of values calculated for all block groups in the State of Maine. In this way, scores calculated for Androscoggin County would be scaled consistently with those calculated for every other county in Maine. Second, the logarithm of the calculated and scaled value for each block group was taken to place the scaled values in the range of 0 to 10. This was to equalize the weight of each of the scoring criteria. After the data had been normalized, the maximum census block group risk score for each town was recorded.

Results of the community-based flood mapping assessment on the basis of census block groups are shown in table 7. The communities of Auburn, Lewiston, and Mechanic Falls scored highest. After reviewing the results, MFMP determined them to be reasonable and in accord with their understanding of community-based mapping needs in Androscoggin County. Scoring results by census block group are provided in Appendix E.

Table 7. Maine Floodplain Management Program criteria for prioritization of community-based flood mapping needs in Androscoggin County.

[CID, community identification number; CBG, census block group]

Community	CID	Maximum CBG risk score
Auburn, City of	230001	56.08
Lewiston, City of	230004	43.87
Mechanic Falls, Town of	230007	40.19
Sabattus, Town of	230011	39.06
Lisbon, Town of	230005	32.51
Greene, Town of	230475	31.38
Turner, Town of	230010	31.37
Poland, Town of	230009	31.28
Minot, Town of	230008	30.93
Durham, Town of	230002	30.81
Leeds, Town of	230003	29.97
Livermore, Town of	230173	29.12
Livermore Falls, Town of	230006	27.30
Wales, Town of	230439	25.02

Prioritization of Waterbodies in Androscoggin County

Many towns and(or) census blocks in Androscoggin County are separated from neighboring towns and(or) census blocks by bodies of water that may need new or revised studies. In cases such as these, ranking the waterbodies in order of priority can promote most efficient use of limited resources for study in Androscoggin County. When a waterbody that serves as a boundary among several towns receives funding for study, then all of the towns that have that waterbody as a boundary can benefit from the results of the study.

Mapping needs for waterbodies were grouped into one of four different types of studies required to create or update flood hazard zones.

- Baseline–DFIRM only: The most economical method of creating a countywide DFIRM is through digitizing flood-hazard information from the effective FIRMs and FISs onto new mapping. This baseline option is currently being undertaken by MEGIS and other FEMA contractors.
- Redelineation: Existing hydrologic and hydraulic studies of the water body are adequate and the water body requires only the redelineation of the base flood elevations using updated topographic data.
- Limited Detailed Study: Automated tools are used to produce digital information or flood mapping for the water body in question has already been studied in detail and requires limited technical reworking of the hydrologic and(or) hydraulic analysis or the water body in question has not been studied in detail but it is expected that approximate methods would suffice to adequately map the flood hazard.
- Detailed Study: Can be performed to develop the digital information, including field surveyed cross-sections and structures. Because this is the most expensive type of study that FEMA can perform, the scope of the detailed study may be limited.

Note that Detail and Limited Detail studies are also assumed to need redelineation using updated topographic data, incorporating results from the new hydrologic and(or) hydraulic analyses.

USGS staff (Robert Dudley, Charles Schalk) met with MFMP staff (Lou Sidell, Tom Marcotte) on December 19, 2006, to review interview data and marked-up maps and to arrive at an initial list of mapping needs by waterbody for the county. Note that only waterbodies identified by the communities during the scoping effort were included in this list of mapping needs; waterbodies in communities that chose not to participate in the scoping effort are not included in the list. The mapping needs derived through these meetings were entered into the WISE scoping application. During this meeting, the criteria listed in table 8 were identified as necessary to the ranking of waterbodies and the type of study needed for each waterbody was identified. Descriptions of these criteria are provided in the text following table 8.

Table 8. Maine Floodplain Management Program criteria and qualitative weight for prioritization of waterbody-based flood mapping needs in Androscoggin County.

[MFMP, Maine Floodplain Management Program; LOMC, Letter of Map Change]

Community prioritization criteria	Weight	Range	Score
Ranking from census block-centered analysis	3	22.9 – 34.4	One-eighth of value; theoretical maximum = 10 points
Community and (or) MFMP priority	1	1 - 3	1 = highest = 10 points 2 = medium = 6 points 3 = lowest = 3 points
Connectivity	1	1 – 4	One point per connected community
Map age, in years	1	14 – 32	0.3 point per year
Map type	1	b, c, d, e	b = unnumbered A-Zone : 10 points c = map with elevations : 6 points d = map with elevations and floodways: 3 points e = map with coastal velocity zones: 3 points
Number of LOMCs	1	0 – 22	0.5 point per LOMC
Presence of best available data	1	Yes / No	Yes = 10, No = 0

In most cases, towns identified their highest waterbody mapping priorities during the scoping meeting. In some cases, priority was indicated by MFMP during the December 19 meeting on the basis of historically documented mapping needs of the towns. Higher priority was given to A-zone waterbodies with existing BAD where maps could be created or greatly improved by simply collecting improved topographic information and redelineating existing detailed base flood elevations. Higher priority was given to waterbodies that had been historically documented as a mapping need in either the MFMP's Database or MNUSS or both. Historical documentation of a mapping need is indicative of an ongoing need that has been known to be a need in the past. Priority was ranked from 1 (highest) to 3 (lowest). Many towns indicated more than three waterbodies that need to be addressed; in these cases, all waterbodies ranked as lowest priority were given a priority ranking of 3.

Higher priority was given to waterbodies with high connectivity, where connectivity is a measure of the number of neighboring communities that are adjacent to or would otherwise benefit from improved mapping of a particular water body. For example, an A-zone river reach that connected to a detailed study upstream or spanned multiple communities or a lake that bordered multiple communities would receive higher priority than a pond contained within the corporate limits of a single community.

Map age was calculated as the difference between December 2006 and the effective date of the map, in years. No communities in Androscoggin County operate with the "flat maps," or FHBMs that had been converted to FIRMs by letter.

Type of map also was included as a criterion. Maps that do not include studies and contain no BFEs are (b). Maps with BFEs but no delineated floodways are (c). Maps with BFEs and floodways are (d). Maps that include coastal velocity zones are (e). Highest scores were assigned to those maps with least amount of detail (b, then c, then d and e).

Because the number of LOMCs issued for a community is indicative of flooding issues, LOMCs were included in the scoring criteria. LOMCs that were included in the scoring were (a) those that contained coordinate information and could be plotted with some degree of certainty on a map, and (b) those determined from the map to relate to a particular waterbody. Other LOMCs (those that could not be located or assigned to a particular waterbody) were not included in the scoring.

As described above, the presence of BAD is helpful to prioritize the mapping needs of waterbodies. Waterbodies for which BAD were available were given a score of 10, whereas those for which BAD were not available were given a score of 0. BAD that required engineering investigation to determine its validity received a score of 5.

Summing the scoring criteria produced a waterbody-based prioritized list of mapping needs involving redelineation, limited detail study, or detailed study (table 9, fig. 4) for the waterbodies identified by the communities during the scoping effort. For example, the redelineation of all waterbodies in Auburn scored as follows:

Census-block ranking (* 3)	= 7.0 * 3 = 21.0
Community/MFMP priority	= 10 (highest priority)
Connectivity	= 3
Map age (scaled by years)	= 3.5
Map type	= 3
Number of LOMCs (* 0.5)	= 1.5
Presence of BAD	= 0
Sum	= 42.0

The highest scoring needs were city-wide redelineations requested by Auburn, Lewiston, and Poland. Auburn and Lewiston have 2-ft contours available that would facilitate redelineation efforts.

Table 9. Prioritized waterbody-based flood mapping needs in Androscoggin County requiring redelineation, limited detail study, or detailed study.

Rank	Waterbody	Community	CID	Study type	Score
1	All	Auburn	230001	Redelineation	42.0
2	All	Lewiston	230004	Redelineation	41.7
3	All	Poland	230009	Redelineation	37.4
4	Hart Brook	Lewiston	230004	Detail Study	34.7
5	Bobbin Mill Brook	Auburn	230001	Detail Study	34.4
6	Androscoggin Lake	Leeds	230003	Detail Study	34.2
7	East Branch Royal River	Durham	230002	Detail Study	32.7
8	Garcelon Bog	Lewiston	230004	Detail Study	32.2
9	Stetson Brook	Lewiston	230004	Detail Study	32.2
10	Meadow Brook	Auburn	230001	Detail Study	31.4
11	Moose Brook	Auburn	230001	Detail Study	31.4
12	Tributary A to Little Androscoggin River	Auburn	230001	Detail Study	31.4
13	Androscoggin River	Livermore Falls	230006	Redelineation	29.9
14	Dead River (south)	Leeds	230003	Detail Study	29.2
15	Newell Brook	Durham	230002	Detail Study	27.2
16	Dead River (north)	Leeds	230003	Detail Study	26.7
17	Davis Brook	Poland	230009	Limited Detail	25.4
18	Androscoggin River	Durham	230002	Redelineation	25.2
19	Redwater Brook	Livermore Falls	230006	Detail Study	24.9
20	Runaround Pond	Durham	230002	Detail Study	24.2
21	Unnamed tributary to Runaround Pond	Durham	230002	Redelineation	24.2
22	Lower Range Pond	Poland	230009	Detail Study	21.9

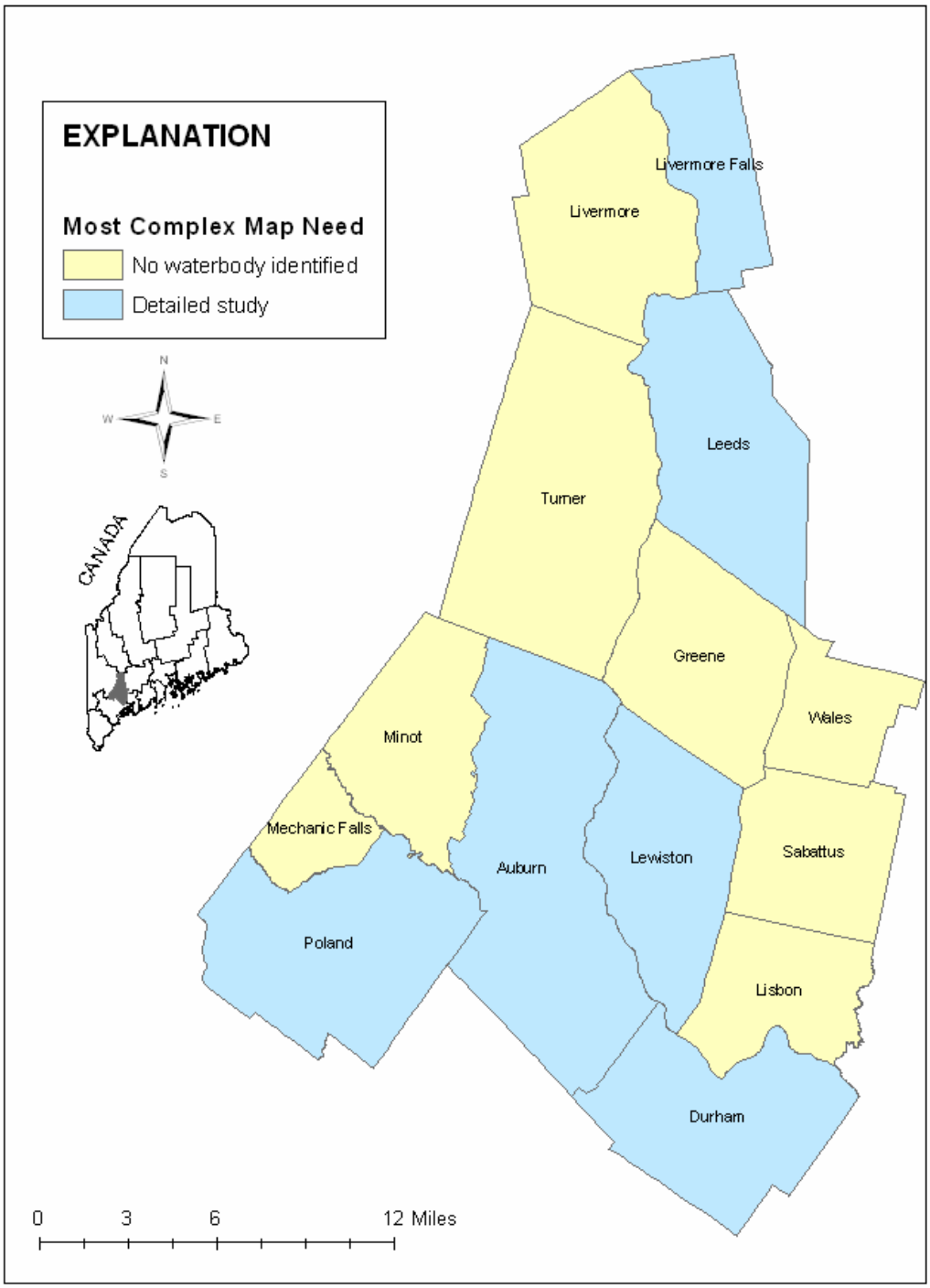


Figure 4. Types of waterbody studies needed by communities in Androscoggin County.

Project Time and Costs for Identified Mapping Needs

The USGS Maine Water Science Center will provide scoping-level time and cost estimates for the identified study needs for each water body listed in table 9. The time and cost estimates will include costs for hydrologic, hydraulic, and topographic data collection; analyses; and mapping, depending on the identified type of study needed for each water body. Detailed information about each waterbody being scoped, including spatial limits and affected length, will be included in the time and cost estimates. The time and cost estimates will be submitted to the cooperating agencies (FEMA, MFMP) as a separate document as set forth in the scope of work.

Project Alternatives

Costs can be reduced by cutting back on the level of effort for the hydrologic and hydraulic (H&H) analyses and(or) reducing the number of DFIRM panels.

Alternative H&H options that would help FEMA to reduce costs include reducing the study scope from a detailed study to a limited detail study or redelineation of current flood information only. Reducing the number of DFIRM panels by altering the mix of panel scales would lower the total panel count and reduce the estimated DFIRM production cost.

Section 3. Options for Future Mapping and DTM Preparation

Mapping Requirements

This section provides an assessment of the costs and benefits of utilizing the data cataloged in the previous section for the preparation of Digital Flood Insurance Rate Maps (DFIRMs) for Androscoggin County. Options are presented for using these data sets in various combinations and supplementing them with new data sets.

DFIRMs are produced from three broad categories of geospatial data: (1) Base Map, (2) Digital Terrain Model (DTM), and (3) Flood-Insurance Risk Zones. The spatial accuracy of each of these three categories is fixed by the specifications contained in the Guidelines and Specifications for Flood Hazard Mapping Partners, April 2003 (Guidelines and Specifications). Proposed DFIRM panels fro Androscoggin County are shown in fig. 5.

Base Maps: Base maps are acquired from MEGIS and will be used by FEMA as a "backdrop" to the flood-insurance risk zones shown on the DFIRMs.

Digital Terrain Models (DTMs): DTMs are used in conjunction with hydrologic and hydraulic models to interpret the limits of flood-insurance risk zones. DTMs represent terrain with irregularly-spaced spot elevations (x, y, z) and breaklines that indicate changes in ground slope at features such as the toe or top of channel banks or ridge lines. These data sets are generally photogrametrically compiled by a mapping contractor from stereo photos and utilized in the form of a Triangulated Irregular Network (TIN) or a Digital Elevation Model (DEM). A DEM uses a regular grid, or raster, spacing of (x, y, z) points to represent the land surface. Each grid cell is assigned an average elevation to represent the elevation of the ground that is covered by the grid cell. A DEM represents the terrain surface with a mesh of regularly spaced points, whereas a TIN uses contiguous triangular planes.

Flood-Insurance Risk Zones: Geographic boundaries produced by FEMA and provided in digital format.

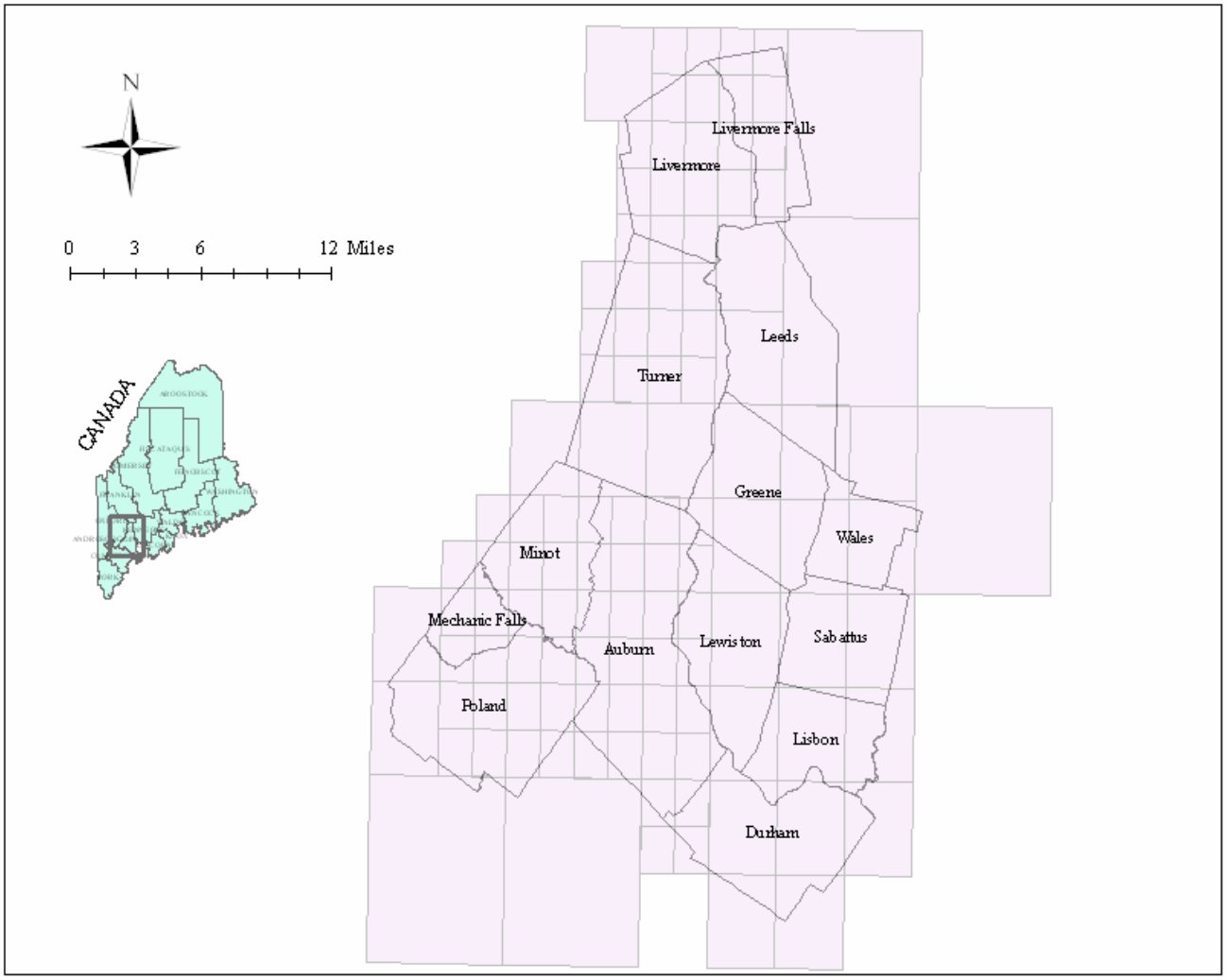


Figure 5. Proposed digital flood insurance rate map panels for Androscoggin County.

Base Map

Base maps are defined in the Guidelines and Specifications as the "map of the community that depicts cultural features (roads, railroad, bridges, dams, and culverts), drainage features, and corporate limits." Depending on the source of the base map, the specific features found on DFIRMs may include the following data and features:

Roads: centerlines, edge-of-pavement, right-of-way, names.

Railroads: names.

Bridges: names.

Flood Control Structures: headwall, dam, levee, names.

Airport Boundaries: names.

Rivers: centerlines, banks, names.

Streams: names.

Lakes: names.

Political Boundaries: county, municipality, special districts, wards, military reservations, Native American lands, names.

Land Use: parks, individual land parcels, names.

The Guidelines and Specifications specify "absolute horizontal accuracy" for base map features to establish horizontal accuracy for the position of the digital data set to its actual location on the earth's surface. The horizontal accuracy is specified as a statistical error distribution at the 95-percent confidence level and is specified in the Guidelines and Specifications as a function of finished map scale, as shown in table 10:

Table 10. Flood Insurance Rate Map (FIRM) Horizontal Accuracy.

FIRM map scale	Absolute horizontal accuracy at the 95-percent confidence level, in feet
1 in = 500 feet	19.0
1 in = 1,000 feet	38.0
1 in = 2,000 feet	45.6

MEGIS can provide digital mapping data for Androscoggin County for DFIRM production that meet these specifications.

Digital Terrain Models (DTMs)

FEMA typically develops DTMs for the production of DFIRMS as they are not widely available at the accuracies required by FEMA. The DTMs are used in conjunction with hydrologic and hydraulic models to interpret flood boundaries and can be used by the community for many other purposes other than flood management.

Guidelines and Specifications identify the following four types of DTMs: (1) Digital contours, (2) Digital Elevation Models (DEMs), (3) Mass points and breaklines, and (4) Triangulated Irregular Networks (TIN). Each of these models can be created from the other and their use is application dependent.

Under FEMA guidelines, the allowable DTMs are as follows:

Digital contours: continuous, nonintersecting lines of equal elevation separated by a specified elevation interval.

Digital Elevation Model (DTM): x, y, and z coordinates of regularly spaced points that form a grid.

Mass Points and Breaklines: x, y, and z coordinates of irregularly spaced points.

Triangulated Irregular Network (TIN): contiguous triangles with x, y, and z values at the vertices and faces with slope and aspect.

The Guidelines and Specifications specify what is referred to as "absolute vertical accuracy" for DTMs, which relates the elevation of the land surface in the digital data set to its actual elevation relative to a specific vertical datum. The National Standard for Spatial Data Accuracy (NSSDA) is specified as a statistical error distribution at the 90- and 95-percent confidence level as a function of the specified contour interval as shown in table 11:

Table 11. National Standard for Spatial Data Accuracy (NSSDA).

NSSDA contour interval	NSSDA 90-percent confidence interval	NSSDA 95-percent confidence interval
2 feet	1 foot	1.2 feet
4 feet	2 feet	2.4 feet

Contouring and DEMs are not printed on DFIRMs so their vertical accuracy is not labeled on the DFIRMs, but it is recorded in the metadata of elevation datasets used for hydrologic and hydraulic modeling.

Neither USGS nor MEGIS has elevation data suitable for hydraulic modeling by detailed methods and communities were contacted to find topographic or elevation data suitable for hydraulic modeling (e.g. 2-foot or 4-foot contours) (approximate and limited-detailed studies can often be done with less rigorous topographic standards). Community specific topographic data such as those developed by Auburn and Lewiston (2-ft contours) will be used if they meet FEMA standards. New elevation data will be developed as necessary.

DTM development options include (1) obtaining countywide DTM data that covers all communities and (2) obtaining DTM data only for selected floodplain areas as needed to support a detailed study, limited detailed study, restudy or re-delineation of flood hazard areas. Obtaining DTM data on a countywide basis is expensive; most of the acquired data would be outside of the floodplain and not needed for hydraulic analysis. If FEMA obtains new DTM data for selected areas as needed, keeping in mind that is most cost effective to consolidate areas, where possible, and optimizes flights, the unit costs could be reduced.

Flood-Insurance Risk Zones

Flood-insurance risk zones are created by FEMA to set insurance rates and manage the floodplain. Flood-insurance risk zone accuracy requirements are not specified in the Guidelines and Specifications but can be described in terms of the combined accuracies of the base map, DTM, and the hydrology and hydraulic simulation models.

FEMA flood insurance rate 100- and 500-year flood zones are being converted to digital data layers by MEGIS for each community participating in the National Flood Insurance Program (NFIP) in Maine. These datasets were developed by direct digitization of FIRM maps using data registration techniques that produced the best-fit registration to community boundaries or other suitable features.

The most common comment by community representatives was that a better base map is needed to allow easier determination of where the risk zone boundaries are relative to the existing features such as roads and buildings.

Section 4. References Cited

Dudley, R.W., 2004, Water Budget for Lake Auburn, Maine, May 1, 2000 through April 30, 2003: U.S. Geological Survey Water Scientific Investigations Report 2004–5106, 16 p.

Federal Emergency Management Agency, 1994, Title V–National Flood Insurance Reform; available on the Web at URL *http://www.fema.gov/pdf/nfip/riegle.pdf*, accessed January 8, 2007.

Federal Emergency Management Agency, 2006, Flood map modernization mid-course adjustment: accessed on December 12, 2006, at *http://www.fema.gov/library/viewRecord.do?id=2195*

University of Maine, 2004, Maine census data, population totals: Fogler Library, University of Maine, accessed on September 16, 2004, at *http://www.library.umaine.edu/census/*

Appendices

Appendix A: Community Contacts and Best Available Data: Androscoggin County

Auburn, City of

CID 230001 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 10/18/1995

Participating=Yes **LURC:** No **Ordinance Date:** 10/6/1997

Total No. NFIP Policies=87 **No. Claims Since 1978=** 54 **All LOMCs:** 4

David Galbraith 207-333-6600
Director of
City of Auburn
60 Court St.
Auburn ME 04210

Mark Stambach, CEO 207-333-6600
60 Court St.
Auburn ME 04210

Eric Cousens, CEO 207-333-6600
60 Court St.
Auburn ME 04210

Best Available Data:

Mapping Status:

Mapping Needs:

Durham, Town of

CID 230002 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 5/4/1988

Participating=Yes **LURC:** No **Ordinance Date:** 4/2/2005

Total No. NFIP Policies=13 **No. Claims Since 1978=** 5 **All LOMCs:** 1

John White 207-353-2561
Selectmen
Town of Durham
630 Hallowell Rd.
Durham ME 04222

Daniel Feeney, CEO 207-353-2561
18 Baston Rd`
No Yarmouth ME 04097

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Greene, Town of

CID 230475 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 5/3/1990

Participating=Yes **LURC:** No **Ordinance Date:** 2/20/1990

Total No. NFIP Policies=11 **No. Claims Since 1978=** 3 **All LOMCs:** 1

Charles Noonan 207-946-5146
Town Manager
Town of Greene
PO Box 510
Greene ME 04236

Randy Ray, CEO 207-946-5146
239 Lane Rd.
Greene ME 04236

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Leeds, Town of

CID 230003 Community Profile

Map Type: No Floodways **Current FIRM/FIS Map Date:** 7/16/1990
Participating=Yes **LURC:** No **Ordinance Date:** 6/1/2002
Total No. NFIP Policies=9 **No. Claims Since 1978=** 1 **All LOMCs:** 1

Jane Wheeler 207-524-5171
Selectmen
Town of Leeds
PO Box 206
Leeds ME 04263

Larry Grant, CEO 207-524-5171
30 Grant Rd.
Leeds ME 04263

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Lewiston, City of

CID 230004 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 9/28/1979

Participating= Yes **LURC:** No **Ordinance Date:** 6/17/1993

Total No. NFIP Policies= 39 **No. Claims Since 1978=** 20 **All LOMCs:** 3

James Bennett 207-784-2951
Administrator
City of Lewiston
27 Pine St.
Lewiston ME 04240

Gildace Arsenault, CEO 207-784-2951
27 Pine St.
Lewiston ME 04240

Best Available Data: Jepson Brook FEMA-LOMR 8/30/95

Mapping Status:

Mapping Needs:

ND, No Data

Lisbon, Town of

CID 230005 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 3/4/1985

Participating=Yes **LURC:** No **Ordinance Date:** 7/31/1999

Total No. NFIP Policies=8 **No. Claims Since 1978=** 6 **All LOMCs:** 1

Curtis Lunt 207-353-3000
Town Manager
Town of Lisbon
300 Lisbon St.
Lisbon ME 04250

Gerald Samson, CEO 207-353-3000
300 Lisbon St.
Lisbon ME 04250

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Livermore Falls, Town of

CID 230006 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 8/5/1991

Participating=Yes **LURC:** No **Ordinance Date:** 6/11/1997

Total No. NFIP Policies=2 **No. Claims Since 1978=** 3 **All LOMCs:** 0

Martin Puckett 207-897-3321
Town Manager
Town of Livermore Falls
2 Main St.
Livermore Falls ME 04254

Kenneth Pratt, CEO 207-897-3321
2 Main St.
Livermore Falls ME 04254

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Livermore, Town of

CID 230173 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 5/3/1990
Participating=Yes **LURC:** No **Ordinance Date:** 6/9/1999
Total No. NFIP Policies=13 **No. Claims Since 1978=** 2 **All LOMCs:** 0

Kurt Schaub 207-897-3207
Selectmen
Town of Livermore
10 Crash Rd.
Livermore ME 04253

Paula Coombs, CEO 207-931-8547
PO Box 65
Livermore Falls ME 04254

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Mechanic Falls, Town of

CID 230007 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 5/17/1990

Participating= Yes **LURC:** No **Ordinance Date:** 1/5/1998

Total No. NFIP Policies= 8 **No. Claims Since 1978=** 6 **All LOMCs:** 0

Dana Lee 207-345-2871
Town Manager
Town of Mechanic Falls
108 Lewiston St.
Mechanic Falls ME 04256

John Hawley, CEO 207-345-2221
PO Box 130
Mechanic Falls ME 04256

Best Available Data: Range Brook (SCS 8/78)

Mapping Status:

Mapping Needs:

ND, No Data

Minot, Town of

CID 230008 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 5/17/1990

Participating=Yes **LURC:** No **Ordinance Date:** 3/2/1991

Total No. NFIP Policies=2 **No. Claims Since 1978=** 0 **All LOMCs:** 0

Dean Campbell 207-783-3650
Selectmen
Town of Minot
329 Woodman Hill Rd.
Minot ME 04258

Kenneth Pratt, CEO 207-576-1413
250 Patten Rd
Greene ME 04236

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Poland, Town of

CID 230009 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 5/20/1996
Participating=Yes **LURC:** No **Ordinance Date:** 5/4/1996
Total No. NFIP Policies=10 **No. Claims Since 1978=** 0 **All LOMCs:** 6

Richard Chick 207-998-4601
Town Manager
Town of Poland
1231 Maine St.
Poland ME 04274

Arthur Dunlap, CEO 207-998-4601
1231 Maine St.
Poland ME 04274

Best Available Data: Range Brook (SCS 8/78) Worthley Brook (SCS 8/78)

Mapping Status:

Mapping Needs:

ND, No Data

Sabattus, Town of

CID 230011 Community Profile

Map Type: No Floodways **Current FIRM/FIS Map Date:** 2/15/1980
Participating=Yes **LURC:** No **Ordinance Date:** 6/1/1996
Total No. NFIP Policies=8 **No. Claims Since 1978=** 1 **All LOMCs:** 2

Tracy Fabrizio 207-375-4331
Administrator
Town of Sabattus
PO Box 190
Sabattus ME 04280

Richard Behr, CEO 207-375-8419
18 Lisbon Rd.
Sabattus ME 04280

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Turner, Town of

CID 230010 Community Profile

Map Type: Floodways **Current FIRM/FIS Map Date:** 5/5/2003

Participating=Yes **LURC:** No **Ordinance Date:** 4/5/2003

Total No. NFIP Policies=19 **No. Claims Since 1978=** 6 **All LOMCs:** 4

James Catlin 207-225-3414
Town Manager
Town of Turner
PO Box 157
Turner ME 04282

Roger Williams, CEO 207-225-3414
PO Box 91
E. Winthrop ME 04343

Best Available Data:

Mapping Status:

Mapping Needs:

ND, No Data

Wales, Town of

CID 230439 Community Profile

Map Type: Unnumbered A-zone **Current FIRM/FIS Map Date:** 2/21/1975
Participating=Yes **LURC:** No **Ordinance Date:** 6/11/2005
Total No. NFIP Policies=1 **No. Claims Since 1978=** 0 **All LOMCs:** 0

Paul Burgess 207-375-8881
Selectmen
Town of Wales
302 Centre Rd.
Wales ME 04280

Kenneth Pratt, CEO 207-576-1413
250 Patten Rd
Greene ME 04236

Best Available Data: Sabattus Pond BFE 248.2 NGVD per Sabattus FIS

Mapping Status:

Mapping Needs:

ND, No Data

Appendix B: Community Scoping Interview Data: Androscoggin County

SCOPING INTERVIEW DATA FOR: **Auburn**

CID: 230001 **Council Govt:** **Annual Town Meeting Date:**
Town Govt:

Community Representative Interviewed
David Galbraith
Dir Planning
Email: **Tel:** (207) 333-6601 **Fax:**

Floodplain Management Community Contact (if different from above)
Gary Johnson, Asst City Engineer; Eric Cousens, City planner/CEO. All at Auburn Hall, City of Auburn, 60 Court St, Auburn, ME, 04210.

Known problems with flood maps for your community

Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
Yes. P8 - along Andro R (LOMAs - use better topo data), Taylor Bk LOMA, possible elevation problem. P4 - mapping inaccurate, better local topo data avail.

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
Yes. P7 - need elevations in A zone near Taylor Pond, also need elevations updated in AE zone.

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. P15 - culverts on Meadow Bk. P12 - culvert on Moose Bk. P11 - Zone AE, Rt 136 culverts. P9 - culvert at Hardscrabble Rd, proposed bridge in AE zone over Little Andro R. P6, P4 - culvert change on Robin Mill Bk changed AE-zone elevations; better local topo data avail.

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
Yes. P5 - N end Taylor Pond, east shore - good topo data available.

Community Resources

Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
Yes. April 2006, scale 1"=600', color, digital ortho.

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
Yes. 2' contours citywide, digital.

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
Yes. Taylor Bk and Bobbin Mill Bk.

Do you have dedicated GIS capabilities (if so, provide contact information)?
Yes. Gary Johnson, 207-333-6601 x 1138, same city address.

Notes
Some high water marks kept, don't know who. Work with Lewiston to manage flood issues on Androscoggin R. No Lake Auburn issues because development not allowed; dam controls elevations.

Priorities: 1. Redelineation of existing elevations with latest 2-ft contour

SCOPING INTERVIEW DATA FOR: **Durham**

CID: 230002 **Council Govt:** **Annual Town Meeting Date:**
Town Govt: 1st Saturday April

Community Representative Interviewed
Daniel Feeney, John White
CEO, Admin Asst
Email: djfeeney@lisbonme.org **Tel:** (207) 353-3000 **Fax:** (207) 353-3007

Floodplain Management Community Contact (if different from above)
Phone: Daniel = 353-3000 x 122, John = 353-2561 x 203. Fax: Daniel = 353-3007, John = 353-5367.

Known problems with flood maps for your community

Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
Yes. Bowie Hill Rd (Zone A) (P10), subdivision. Swamp Rd (P5). Swamp Rd at Rt 9 (P5).

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
Yes. Need elevations in East Branch Royal R area (P15), Runaround Pond area (P15). Need better mapping delineation Androscoggin R (P15).

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. Bridge 1999, Newell Bk (Zone A)(P15); culvert planned, dam repaired 2004, Runaround Pond (Zone A)(P15). Bridge replaced 2004, Shiloh Rd (Zone A)(P5), Cedar Pond Road raised 2005 (Zone AE)(P5), new culvert and bridge 2006, Swamp Rd (Zone A)(P5).

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
No

Community Resources

Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
No

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
No

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
No

Do you have dedicated GIS capabilities (if so, provide contact information)?
No

Notes
Highest priorities are related to structures: (1) Rabbit Rd near East Branch Royal R, (2) Old Brunswick Rd at Newell Bk, (3) Swamp Rd at Rt 9. John Mann, surveyor, keeps high water marks.

One valid MNUSS record; the other two are duplicates.

SCOPING INTERVIEW DATA FOR: **Greene**

CID: 230475 **Council Govt:** **Annual Town Meeting Date:**
Town Govt: 1st weekend March

Community Representative Interviewed
Randall Ray
CEO
Email: ceogreene@fairpoint.net **Tel:** (207) 946-5146 **Fax:** (207) 946-2101
Floodplain Management Community Contact (if different from above)

Known problems with flood maps for your community
Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
No

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
No. Might contact Bruce Tufts, road foreman, 946-5146.

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. Probably don't affect flood zones. P4 - unnamed trib to Hooper Bk, culvert replaced 2006, reduced flooding (which wasn't shown on map). Lane Rd (P10), town added extra culvert 2006 to prevent overtopping.

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
No. Possible along Androscoggin R.

Community Resources
Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
No

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
No

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
No

Do you have dedicated GIS capabilities (if so, provide contact information)?
No

Notes
Bruce Tufts might keep high water marks.

No new mapping priorities.

SCOPING INTERVIEW DATA FOR: **Leeds**

CID: 230003 **Council Govt:** **Annual Town Meeting Date:**
Town Govt: 1st Saturday June

Community Representative Interviewed
Larry Grant
CEO
Email: leedsceo@fairpoint.net **Tel:** (207) 524-2754 **Fax:**
Floodplain Management Community Contact (if different from above)
Jane Wheeler, Admin Asst, 207-524-5171

Known problems with flood maps for your community
Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
No

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
No

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. Bridge and dam on Dead River (zone AE). May affect SFHA.

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
Yes. Off Fish Rd (Mountain View Drive), not shown in flood zone. Along Dead River in A zone. Lakeshore Drive (near Androscoggin Lake AE zone).

Community Resources
Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
No

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
No

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
No

Do you have dedicated GIS capabilities (if so, provide contact information)?
No

Notes
Cover sheet shows no LOMCs, but one appears on map along Dead River (intersection Rt 106 and 219). Town has issues with proper boundary appearance on waterbodies. A high priority would be redelineation of AE zones

SCOPING INTERVIEW DATA FOR: **Lewiston**

CID: 230004 **Council Govt:** **Annual Town Meeting Date:**
Town Govt:

Community Representative Interviewed
David Hediger
City planner
Email: dhediger@ci.lewiston.me.us **Tel:** (207) 784-2951 **Fax:**
Floodplain Management Community Contact (if different from above)

Known problems with flood maps for your community
Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
Yes. N shore No Name Pond (P5); elevations maybe OK but mapping bad, lots of elevation certificates. Garcelon Bog (Zone A2)(P10).

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
Yes. W side No Name Pond (Zone A)(P10).

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. Bridge at Hamel Rd washed out 2004 (P5)(Zone A3). Culvert work on W and S end No Name Pond (P10) probably changed boundaries (Zone A4, A). Culverts on Hart Bk nr Pleasant St (P10)(Zone A4).

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
Yes. Stetson Bk area, road changes, elevations and delineations possibly bad (Zone A12)(P10). Downtown along Androscoggin R; some elevation conflicts already known. Foss Rd Biz Park (P10) needs redelineation (Zone A7, B) for development.

Community Resources
Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
Yes. 1997 and 2001 photos, scale not known.

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
Yes. Citywide 2-ft contours available.

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
No

Do you have dedicated GIS capabilities (if so, provide contact information)?
Yes. GIS Coordinator is Jim Ward, 207-784-5753.

Notes
Lewiston and Auburn work together on Androscoggin R issues.

High priority is redelineation of existing elevations on local 2-ft contours;

SCOPING INTERVIEW DATA FOR: **Lisbon**

CID: 230005 **Council Govt:** **Annual Town Meeting Date:**
Town Govt: 3rd Monday May

Community Representative Interviewed
Gerald Samson
Assessor/CEO
Email: jsamson@lisbonme.org **Tel:** (207) 353-3000 **Fax:** (207) 353-3007
Floodplain Management Community Contact (if different from above)
Same. 207-353-3000 x 110

Known problems with flood maps for your community
Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
Yes. Webster Rd area (P2)(Zone A)

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
No

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. Miller hydro project, 1988 - did not seem to cause flooding issues that were in place prior to construction.

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
No

Community Resources
Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
Yes. 1998 - state ice storm photos, color.

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
No

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
No

Do you have dedicated GIS capabilities (if so, provide contact information)?
Yes. GIS contact is Ryan Leighton, town engineer, 207-353-3000 x 116

Notes
Priority - adding elevations to A zones, especially in Webster Rd area (P2)

SCOPING INTERVIEW DATA FOR: **Livermore Falls**

CID: 230006 **Council Govt:** **Annual Town Meeting Date:**
Town Govt: 2nd Saturday June

Community Representative Interviewed
Martin Puckett
Town manager
Email: townmanager@hme.org **Tel:** (207) 897-3321 **Fax:** (207) 897-9397
Floodplain Management Community Contact (if different from above)

Known problems with flood maps for your community
Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
No

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
No

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. (P3) Redwater Bk culvert (Zone A).

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
Yes. In-town area (P3); need better delineation of existing elevations; this is highest priority.

Community Resources
Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
No

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
No

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
Yes. Contact Darrell Brown of Maine Land Development; assorted data throughout town.

Do you have dedicated GIS capabilities (if so, provide contact information)?
No

Notes
Public works (207-897-3321) keeps high water marks.

SCOPING INTERVIEW DATA FOR: **Poland**

CID: 230009 **Council Govt:** **Annual Town Meeting Date:**
Town Govt: 1st Saturday April

Community Representative Interviewed
Arthur Dunlap
CEO
Email: adunlap@polandtownoffice.org **Tel:** (207) 998-4604 **Fax:** (207) 998-2002
Floodplain Management Community Contact (if different from above)

Known problems with flood maps for your community
Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
Yes. (P9D) Surveyed area is 5'-20' above 100-yr flood elevation (LOMA exists).

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
No

Note any significant changes in hydraulic structures (bridges, culverts, dams)
Yes. 2001, dam was replaced (P8, Lower Range Pond); same sill elevation, but gates were removed; no adjusting spillway any more. P8, 2007, Middle Range Pond dam may be replaced; maintain same elevation? P16, dam outlet from Estes Bog may be replaced in the next decade.

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
Yes. Most panels, highest priority - need improved map scale/delineations. Flooding is not an issue, but knowing where boundaries are IS an issue.

Community Resources
Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
No

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
No

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
No

Do you have dedicated GIS capabilities (if so, provide contact information)?
No. Hoping to add capability in 2 yrs or less.

Notes

SCOPING INTERVIEW DATA FOR: **Turner**

CID: 230010 **Council Govt:** **Annual Town Meeting Date:**
Town Govt: April

Community Representative Interviewed
James Catlin
Town manager
Email: manager@megalink.net **Tel:** (207) 225-3414 **Fax:** (207) 225-3100
Floodplain Management Community Contact (if different from above)
Roger Williams, CEO

Known problems with flood maps for your community
Do you have specific areas that don't flood (1% chance) but are currently in the floodplain?
No

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain?
No

Note any significant changes in hydraulic structures (bridges, culverts, dams)
No

Do you have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale?
No

Community Resources
Do you have aerial photography (or plans for any) (flight date, scale, color/bw)?
Yes. Sewall, 2001; MEGIS should have these data.

Do you have any topographic data (or plans for collecting) (digital terrain, contour maps)?
No

Do you have any data related to hydrologic/hydraulic studies (or plans for such studies)?
No

Do you have dedicated GIS capabilities (if so, provide contact information)?
No. Hope to implement ArcView in 2007. Contact Sandi Philipon.

Notes
High water marks kept by Eva Leavitt (town clerk) and Ross Gagne (EMA).

Will need at least 2 paper copies of digital FIRMS when available. MNUSS data

Appendix C: Existing MNUSS Data Entries: Androscoggin County

EXISTING MNUSS ENTRIES FOR ANDROSCOGGIN CTY

DURHAM, TOWN OF

CID 230002 MNUSS Summary

MNUSS NeedID 100000000010208 **Date of Need:** 10/13/1997

EAST BRANCH BROOK

Panel: 2300020015B

Need Desc: Changes to floodplain width **Length:** 6.5 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes: FLOODPLAIN NEEDS TO BE REDELINEATED AND BFE'S ADDED.

MFMP Comments: Requires restudy

MNUSS NeedID 100000000010208 **Date of Need:** 10/13/1997

EAST BRANCH BROOK

Panel: 2300020015B

Need Desc: Changes to floodplain width **Length:** 6.5 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes: FLOODPLAIN NEEDS TO BE REDELINEATED AND BFE'S ADDED.

MFMP Comments: Requires restudy

EXISTING MNUSS ENTRIES FOR ANDROSCOGGIN CTY

DURHAM, TOWN OF

CID 230002 MNUSS Summary

MNUSS NeedID 100000000010208 **Date of Need:** 10/13/1997

EAST BRANCH BROOK

Panel: 2300020015B

Need Desc: Changes to floodplain width **Length:** 6.5 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes: FLOODPLAIN NEEDS TO BE REDELINEATED AND BFE'S ADDED.

MFMP Comments: Requires restudy

EXISTING MNUSS ENTRIES FOR ANDROSCOGGIN CTY

TURNER, TOWN OF

CID 230010 MNUSS Summary

MNUSS NeedID 100000000010283 **Date of Need:** 12/11/1997

Nezinscot River

Panel: 2300100006B

Need Desc: Changes to hydraulic analysis **Length:** 5.21 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes: THE TOWN WOULD VERY MUCH LIKE A REVISION. THEY WANT HIGH VELOCITY A-ZONES, ADDED ELS.

MFMP Comments: Floodway needed

MNUSS NeedID 100000000010283 **Date of Need:** 12/11/1997

Nezinscot River

Panel: 2300100006B

Need Desc: Changes to hydraulic analysis **Length:** 5.21 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes: THE TOWN WOULD VERY MUCH LIKE A REVISION. THEY WANT HIGH VELOCITY A-ZONES, ADDED ELS.

MFMP Comments: Floodway needed

EXISTING MNUSS ENTRIES FOR ANDROSCOGGIN CTY

TURNER, TOWN OF

CID 230010 MNUSS Summary

MNUSS NeedID 100000000010282 **Date of Need:** 12/11/1997

ANDROSCOGGIN RIVER

Panel: 2300100090C

Need Desc: Changes to hydrologic conditions **Length:** 14.2 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes:

MFMP Comments: Not valid FIS 2003

MNUSS NeedID 100000000010282 **Date of Need:** 12/11/1997

ANDROSCOGGIN RIVER

Panel: 2300100085C

Need Desc: Changes to hydrologic conditions **Length:** 14.2 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes:

MFMP Comments: Not valid FIS 2003

EXISTING MNUSS ENTRIES FOR ANDROSCOGGIN CTY

TURNER, TOWN OF

CID 230010 MNUSS Summary

MNUSS NeedID 100000000010282 **Date of Need:** 12/11/1997

ANDROSCOGGIN RIVER

Panel: 2300100080C

Need Desc: Changes to hydrologic conditions **Length:** 14.2 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes:

MFMP Comments: Not valid FIS 2003

MNUSS NeedID 100000000010282 **Date of Need:** 12/11/1997

ANDROSCOGGIN RIVER

Panel: 2300100043C

Need Desc: Changes to hydrologic conditions **Length:** 14.2 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes:

MFMP Comments: Not valid FIS 2003

EXISTING MNUSS ENTRIES FOR ANDROSCOGGIN CTY

TURNER, TOWN OF

CID 230010 MNUSS Summary

MNUSS NeedID 100000000010282 **Date of Need:** 12/11/1997

ANDROSCOGGIN RIVER

Panel: 2300100041C

Need Desc: Changes to hydrologic conditions **Length:** 14.2 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes:

MFMP Comments: Not valid FIS 2003

MNUSS NeedID 100000000010282 **Date of Need:** 12/11/1997

ANDROSCOGGIN RIVER

Panel: 2300100035C

Need Desc: Changes to hydrologic conditions **Length:** 14.2 **mi**

Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes:

MFMP Comments: Not valid FIS 2003

EXISTING MNUSS ENTRIES FOR ANDROSCOGGIN CTY

TURNER, TOWN OF

CID 230010 MNUSS Summary

MNUSS NeedID 100000000010282 **Date of Need:** 12/11/1997

ANDROSCOGGIN RIVER

Panel: 2300100030C

Need Desc: Changes to hydrologic conditions **Length:** 14.2 **mi**

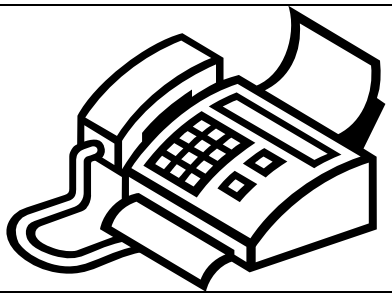
Anticipated BFE Change: Increased By Greater Than 5 feet

Location of Floodplain:

Need Notes:

MFMP Comments: Not valid FIS 2003

Appendix D: Attachments



To: Tom Marcotte, CFM
State Planning Office
Floodplain Management Program
184 State Street, 38 State House Station
Augusta, Maine 04333-0038

Fax Number: (207) 287-6489

FAX back date: ____/____ /2006

Sign-up FAX From:

Community Name:

_____

Primary Community Contact For Floodplain Management:

Name:_____Ph #:_____

Regarding: Attendance at Flood Map Modernization Scoping Meeting

Comments:

The following community official(s) will attend the scoping meeting indicated below:

Androscoggin County: AVCOG Office, 125 Manley Rd. Auburn. December 12th 2006

From 12:00 P.M. to 4:00 P.M.

Name: **Title and Phone Number**

1) _____ , _____

2) _____ , _____

3) _____ , _____

4) _____ , _____

STATE OF MAINE
EXECUTIVE DEPARTMENT
MAINE STATE PLANNING OFFICE
38 STATE HOUSE STATION
AUGUSTA, ME 04333

USGS
science for a changing world

FEMA

, Code Enforcement Officer
Town of
Street
, Maine 04

November 14, 2006

Dear

Subject: Important Meeting on Updating Your Community's Flood Maps

Flooding has caused more than $150,000,000 in damages to Maine's cities and towns during the past twenty years. Coastal and riverine floods impact the lives of our citizens almost annually. Recently completed County Hazard Mitigation Plans identify flooding as the foremost natural hazard in the majority of our sixteen counties.

When the National Flood Insurance Program (NFIP) was established in 1968 it provided for a three part approach to reducing damage from flooding. The first part was the establishment of a flood insurance program overseen by the Flood Insurance Administration (FIA). The second part was the identification and mapping of the flood hazard. The third part was a requirement for communities that wanted to participate in the NFIP to adopt and enforce floodplain management regulations designed to control development in flood prone areas. Of the three parts of the NFIP the second component, mapping the hazard, is the glue that holds the program together. Communities cannot control development if they do not know what areas of their municipality are threatened by flooding. Flood insurance cannot be provided equitably unless insurance agents are able to determine the level of risk for a specific property.

Nationwide the current Flood Insurance Rate Maps (FIRM) are aging and some states, such as Maine, have maps that are on average more than twenty years old. Congress realized that this was a problem and in 2004 provided funding to FEMA to begin a comprehensive updating of the maps. This updating effort is called "Flood Map Modernization", Map Mod for short.

Maine has actively participated in Map Mod since its inception. To date we have remapping projects underway in York, Cumberland and Oxford counties and have met with community officials to discuss their flood mapping needs in Kennebec and Somerset counties. During this fall and winter we will be gathering information on mapping issues and concerns in Penobscot, Lincoln, Hancock and Androscoggin counties. These meetings are designed to give municipal officials a chance to share with us any problems they have with their FIRMs and are called "Scoping Meetings" by FEMA.

Thursday, December 12th from 12:00 PM to 4:00 PM we will meet with officials from Androscoggin County communities at the AVCOG Office, located at 125 Manley Rd., Auburn.

OFFICE LOCATED AT: 184 STATE STREET
PHONE: (207) 287-3261 INTERNET: www.maine.gov/spo FAX: (207) 287-6489

During the Scoping Meeting we will meet with communities and review their current FIRM and discuss possible changes to the map to improve floodplain management at the local level.

We have attached three documents to this letter. One document is a **FAX-Back** form to allow you to sign up for the meeting. We ask that you reply to us by **November 29th.** The second document is a brief overview of the Map Mod process which can also be seen at our web-site www.maine.gov/spo/flood and the third document is the agenda for the meeting.

In preparation for the Scoping Meeting, we would like your community to identify flood mapping issues to be considered for study or review. It will be helpful to have the flooding issues prioritized and for you to be able to locate the areas of concern on the flood maps. In addition, it will also be beneficial to bring a brief narrative describing the reasons you would like to request that changes be made to the maps. This information will help us help you at the meeting and assist us in finalizing the scope of work necessary to update the maps. If your community is unable to attend the Scoping Meeting, this information may also be sent to the lead scoping agency working in collaboration with the Maine Floodplain Management Program and FEMA: USGS, 196 Whitten Road, Augusta, ME 04330.

If you have any questions regarding the Scoping Meeting or need additional information please feel free to contact Tom Marcotte at the State Planning Office (207-287-8051), Rob Dudley at USGS (207-622-8201 ext. 115) or Chuck Schalk at USGS (207-622-8201 ext. 111).

Thank you for your assistance with Map Mod.

Tom Marcotte, CFM
Maine Floodplain Management Program

G. Fred Vanderschmidt IV. CFM
FEMA Region I

Rob Dudley, P.E.
USGS Maine Water Science Center

Androscoggin County Community Interview Form
FEMA Map Modernization Program
December 12, 2006

Community: _____ Effective FIS/FIRM Date: _____

CID#: 230 __ __ __ GOVT: ☐ Town OR ☐ Council

If Town Government, Date of Annual Town Meeting: _____

Community Representative(s) attending meeting:

Name(s): _____

Title(s): _____

Tel: _____ Email(s): _____

Fax: _____

Floodplain Mgt Community Contact (and contact info if different from above): _____

_____

Known problems with flood maps for your community (note FIRM panel numbers)

(Note: Most base-map issues such as street names, roads, corporate boundaries, and spatial issues will be fixed when new digital FIRMS are produced) PLEASE PROVIDE ADDITIONAL INFORMATION FOR ANY YES ANSWERS BELOW

Do you have specific areas that don't flood (1% chance) but are currently in the floodplain? ☐ Yes ☐ No

_____

_____

_____

Do you have specific areas that flood (1% chance) but are not mapped in the floodplain or not mapped at all?
☐ Yes ☐ No

_____

_____

_____

Have any changes in hydraulic structures (bridges, culverts, dams) taken place that would change the maps?
☐ Yes ☐ No

_____

_____

_____

Do you currently have (or are you proposing) high-development areas where you need new or restudied flood elevations or improved map scale? ☐ Yes ☐ No

_____

_____

_____

_____

_____

Androscoggin County Community Interview Form

Community resources:

Do you have aerial photography or plans for any (flight date, scale, color/black & white)? ☐ Yes ☐ No

Do you have topographic data or plans for collecting any (digitail terrain, contour maps)? ☐ Yes ☐ No

Do you have any other data like special hydrologic/hydraulic studies (or plans for studies)? ☐ Yes ☐ No

Do you have dedicated GIS capabilities? ☐ Yes ☐ No (Provide GIS contact info if different from front page)

Do you know if someone in your community keep a record of high-water marks? Who? (fire/police/public works?)
☐ Yes ☐ No

Does your community work with neighboring communities to manage flood sources along town boundaries?
☐ Yes ☐ No List communities here:

Interviewer: Review MNUSS entries and BAD with town representative ☐ Done and all OK, or ☐ Done and see notes

Interviewer: Has the town representative indicated the flood map priorities on the provided map? ☐ Yes ☐ No

NOTES:

Appendix E: Census Block-Group Data

[CID, community identification number.]

Census block group	CID	Community name	Area, in square miles	Population density	Population density score	Population growth	Population growth score
230010101001	230001	Auburn	0.15	5,553.67	8.95	0.00	0.00
230010101002	230001	Auburn	0.27	3,588.53	8.66	0.00	0.00
230010102001	230001	Auburn	0.38	2,548.82	8.43	0.00	0.00
230010102002	230001	Auburn	0.82	2,247.79	8.34	0.00	0.00
230010102009	230001	Auburn	20.23	92.55	6.18	0.00	0.00
230010103001	230001	Auburn	0.11	10,580.72	9.39	0.00	0.00
230010103002	230001	Auburn	0.35	4,059.98	8.74	0.00	0.00
230010104001	230001	Auburn	0.62	2,435.66	8.39	0.00	0.00
230010104002	230001	Auburn	0.27	2,552.32	8.43	0.00	0.00
230010105001	230001	Auburn	0.12	7,736.88	9.18	0.00	0.00
230010105002	230001	Auburn	0.20	5,642.25	8.96	0.00	0.00
230010106001	230001	Auburn	1.13	972.02	7.77	0.00	0.00
230010106002	230001	Auburn	22.83	82.14	6.10	0.00	0.00
230010107001	230001	Auburn	1.12	938.83	7.75	0.00	0.00
230010107002	230001	Auburn	10.38	189.80	6.67	0.00	0.00
230010108001	230001	Auburn	0.83	2,237.93	8.34	0.00	0.00
230010108002	230001	Auburn	4.13	479.31	7.29	0.00	0.00
230010108009	230001	Auburn	1.84	61.53	5.91	0.00	0.00
230010201001	230004	Lewiston	0.12	8315.97	9.23	0.00	0.00
230010201002	230004	Lewiston	0.19	1,661.95	8.14	0.00	0.00
230010202001	230004	Lewiston	0.12	5,169.37	8.90	0.00	0.00
230010202002	230004	Lewiston	0.28	2,370.64	8.38	0.00	0.00
230010203001	230004	Lewiston	0.33	8,278.45	9.22	0.00	0.00
230010203002	230004	Lewiston	0.19	11,101.50	9.42	0.00	0.00
230010203003	230004	Lewiston	0.10	21,985.32	9.88	0.00	0.00
230010204001	230004	Lewiston	0.47	5,183.94	8.91	0.00	0.00
230010204002	230004	Lewiston	0.15	5,923.99	9.00	0.00	0.00
230010205001	230004	Lewiston	0.22	4,956.31	8.88	0.00	0.00
230010205002	230004	Lewiston	0.35	4,138.20	8.75	0.00	0.00
230010205003	230004	Lewiston	0.66	1,991.75	8.26	0.00	0.00
230010206001	230004	Lewiston	0.39	3,612.26	8.66	0.00	0.00
230010206002	230004	Lewiston	9.70	134.37	6.43	0.00	0.00
230010207001	230004	Lewiston	0.78	2,120.74	8.30	0.00	0.00
230010207002	230004	Lewiston	1.61	2,033.69	8.27	0.00	0.00
230010208001	230004	Lewiston	1.04	2,981.18	8.53	0.00	0.00
230010208002	230004	Lewiston	13.55	302.30	6.98	0.00	0.00
230010209001	230004	Lewiston	0.45	2,061.99	8.28	0.00	0.00
230010209002	230004	Lewiston	0.70	2,853.23	8.50	0.00	0.00
230010209009	230004	Lewiston	3.81	313.25	7.01	0.00	0.00
230010301002	230005	Lisbon	1.88	1,162.12	7.89	0.00	0.00
230010301009	230005	Lisbon	13.83	159.85	6.55	0.00	0.00
230010302001	230005	Lisbon	1.84	1,209.43	7.92	0.00	0.00
230010302002	230005	Lisbon	1.25	1,322.34	7.98	0.00	0.00
230010302009	230005	Lisbon	5.40	148.99	6.50	0.00	0.00
230010400001	230002	Durham	17.48	70.30	6.00	18.97	6.86
230010400002	230002	Durham	21.26	101.22	6.24	18.97	6.86
230010410001	230009	Poland	14.58	88.78	6.15	12.07	6.01
230010410002	230009	Poland	23.71	100.60	6.24	12.07	6.01
230010410003	230009	Poland	8.88	133.68	6.43	12.07	6.01

230010415001	230008	Minot	29.90	75.19	6.04	35.10	8.02
230010415002	230007	Mechanic Falls	8.07	174.94	6.61	7.50	5.11
230010415003	230007	Mechanic Falls	3.09	559.12	7.40	7.50	5.11
230010420001	230010	Turner	18.44	65.30	5.95	15.23	6.45
230010420002	230010	Turner	11.69	110.63	6.30	15.23	6.45
230010420003	230010	Turner	10.75	80.73	6.09	15.23	6.45
230010420004	230010	Turner	21.81	73.69	6.03	15.23	6.45
230010430001	230173	Livermore	20.44	56.74	5.85	8.00	5.23
230010430002	230173	Livermore	18.96	49.88	5.76	8.00	5.23
230010440001	230006	Livermore Falls	0.50	2,252.55	8.34	0.00	0.00
230010440002	230006	Livermore Falls	3.67	245.04	6.84	0.00	0.00
230010440003	230006	Livermore Falls	16.26	74.36	6.03	0.00	0.00
230010450001	230003	Leeds	43.45	46.06	5.71	19.89	6.95
230010460001	230475	Greene	13.89	129.60	6.41	11.34	5.89
230010460002	230475	Greene	14.22	104.88	6.27	11.34	5.89
230010460003	230475	Greene	7.21	108.85	6.29	11.34	5.89
230010465001	230011	Sabattus	1.54	700.42	7.55	21.37	7.09
230010465002	230011	Sabattus	4.20	195.89	6.69	21.37	7.09
230010465003	230011	Sabattus	20.94	123.42	6.38	21.37	7.09
230010465004	230439	Wales	17.10	77.32	6.06	8.09	5.26
Minimum			0.10	46.06	5.71	0.00	0.00
Maximum			43.45	21,985.32	9.88	35.10	8.02
Mean			7.21	2,308.60	7.51	4.74	1.99
Median			1.84	938.83	7.75	0.00	0.00

Census block group	Community identification number	Community name	Housing units density	Housing units density score	Claims density	Claims density score
230010101001	230001	Auburn	3,527.97	8.78	0.00	0.00
230010101002	230001	Auburn	2,174.98	8.37	60.31	9.03
230010102001	230001	Auburn	1,481.39	8.05	2.60	5.77
230010102002	230001	Auburn	1,140.91	7.83	1.22	4.98
230010102009	230001	Auburn	35.99	4.93	0.05	1.66
230010103001	230001	Auburn	5,384.33	9.13	0.00	0.00
230010103002	230001	Auburn	1,895.60	8.26	0.00	0.00
230010104001	230001	Auburn	903.24	7.64	1.62	5.28
230010104002	230001	Auburn	986.55	7.71	0.00	0.00
230010105001	230001	Auburn	3,604.29	8.80	68.17	9.16
230010105002	230001	Auburn	2,927.63	8.62	0.00	0.00
230010106001	230001	Auburn	385.44	6.92	4.43	6.32
230010106002	230001	Auburn	32.07	4.84	0.09	2.25
230010107001	230001	Auburn	393.93	6.94	2.68	5.80
230010107002	230001	Auburn	78.29	5.59	0.10	2.35
230010108001	230001	Auburn	933.78	7.66	0.00	0.00
230010108002	230001	Auburn	228.99	6.49	0.24	3.31
230010108009	230001	Auburn	31.58	4.83	0.00	0.00
230010201001	230004	Lewiston	6,032.83	9.23	16.67	7.70
230010201002	230004	Lewiston	1,090.82	7.79	15.44	7.62
230010202001	230004	Lewiston	2,921.82	8.62	0.00	0.00
230010202002	230004	Lewiston	1,181.77	7.86	0.00	0.00
230010203001	230004	Lewiston	2,152.70	8.36	0.00	0.00
230010203002	230004	Lewiston	6,129.07	9.24	0.00	0.00
230010203003	230004	Lewiston	13,999.80	9.93	0.00	0.00
230010204001	230004	Lewiston	2,668.30	8.54	0.00	0.00
230010204002	230004	Lewiston	3,401.83	8.75	41.23	8.64
230010205001	230004	Lewiston	2,375.75	8.45	0.00	0.00
230010205002	230004	Lewiston	1,845.19	8.24	2.83	5.86
230010205003	230004	Lewiston	1,033.77	7.75	10.61	7.23
230010206001	230004	Lewiston	1,574.18	8.10	0.00	0.00
230010206002	230004	Lewiston	58.53	5.34	0.00	0.00
230010207001	230004	Lewiston	920.83	7.65	0.00	0.00
230010207002	230004	Lewiston	940.16	7.67	0.62	4.28
230010208001	230004	Lewiston	1,243.84	7.90	0.00	0.00
230010208002	230004	Lewiston	122.41	5.96	0.00	0.00
230010209001	230004	Lewiston	821.68	7.56	2.23	5.61
230010209002	230004	Lewiston	1,076.74	7.78	1.43	5.15
230010209009	230004	Lewiston	136.54	6.05	0.00	0.00
230010301002	230005	Lisbon	504.07	7.15	0.53	4.12
230010301009	230005	Lisbon	67.96	5.47	0.00	0.00
230010302001	230005	Lisbon	494.30	7.13	0.00	0.00
230010302002	230005	Lisbon	531.82	7.19	0.00	0.00
230010302009	230005	Lisbon	60.71	5.37	0.00	0.00
230010400001	230002	Durham	26.26	4.67	0.00	0.00
230010400002	230002	Durham	37.54	4.97	0.05	1.61
230010410001	230009	Poland	52.00	5.24	0.00	0.00
230010410002	230009	Poland	43.40	5.09	0.00	0.00
230010410003	230009	Poland	59.57	5.36	0.00	0.00

230010415001	230008	Minot	27.56	4.71	0.00	0.00
230010415002	230007	Mechanic Falls	68.81	5.48	0.00	0.00
230010415003	230007	Mechanic Falls	222.42	6.46	0.32	3.61
230010420001	230010	Turner	24.62	4.62	0.05	1.75
230010420002	230010	Turner	46.46	5.15	0.00	0.00
230010420003	230010	Turner	32.74	4.86	0.00	0.00
230010420004	230010	Turner	28.80	4.75	0.05	1.58
230010430001	230173	Livermore	30.23	4.79	0.00	0.00
230010430002	230173	Livermore	23.62	4.58	0.00	0.00
230010440001	230006	Livermore Falls	1,123.26	7.82	0.00	0.00
230010440002	230006	Livermore Falls	126.20	5.99	0.00	0.00
230010440003	230006	Livermore Falls	29.58	4.77	0.00	0.00
230010450001	230003	Leeds	19.70	4.43	0.00	0.00
230010460001	230475	Greene	54.50	5.28	0.00	0.00
230010460002	230475	Greene	44.25	5.11	0.00	0.00
230010460003	230475	Greene	40.77	5.04	0.00	0.00
230010465001	230011	Sabattus	338.20	6.81	0.65	4.33
230010465002	230011	Sabattus	69.11	5.48	0.00	0.00
230010465003	230011	Sabattus	49.27	5.20	0.00	0.00
230010465004	230439	Wales	31.00	4.81	0.00	0.00
Minimum			19.70	4.43	0.00	0.00
Maximum			13,999.80	9.93	68.17	9.16
Mean			1,191.08	6.69	3.39	1.81
Median			385.44	6.92	0.00	0.00

Census block group	Community identification number	Community name	Repetitive loss claim density	Repetitive loss claim density score	Repetitive loss property density	Repetitive loss property density score
230010101001	230001	Auburn	0.00	0.00	0.00	0.00
230010101002	230001	Auburn	11.31	7.30	3.77	7.05
230010102001	230001	Auburn	0.00	0.00	0.00	0.00
230010102002	230001	Auburn	0.00	0.00	0.00	0.00
230010102009	230001	Auburn	0.00	0.00	0.00	0.00
230010103001	230001	Auburn	0.00	0.00	0.00	0.00
230010103002	230001	Auburn	0.00	0.00	0.00	0.00
230010104001	230001	Auburn	0.00	0.00	0.00	0.00
230010104002	230001	Auburn	0.00	0.00	0.00	0.00
230010105001	230001	Auburn	0.00	0.00	0.00	0.00
230010105002	230001	Auburn	0.00	0.00	0.00	0.00
230010106001	230001	Auburn	3.54	6.10	0.89	5.33
230010106002	230001	Auburn	0.00	0.00	0.00	0.00
230010107001	230001	Auburn	0.00	0.00	0.00	0.00
230010107002	230001	Auburn	0.19	3.07	0.10	2.69
230010108001	230001	Auburn	0.00	0.00	0.00	0.00
230010108002	230001	Auburn	0.00	0.00	0.00	0.00
230010108009	230001	Auburn	0.00	0.00	0.00	0.00
230010201001	230004	Lewiston	0.00	0.00	0.00	0.00
230010201002	230004	Lewiston	0.00	0.00	0.00	0.00
230010202001	230004	Lewiston	0.00	0.00	0.00	0.00
230010202002	230004	Lewiston	0.00	0.00	0.00	0.00
230010203001	230004	Lewiston	0.00	0.00	0.00	0.00
230010203002	230004	Lewiston	0.00	0.00	0.00	0.00
230010203003	230004	Lewiston	0.00	0.00	0.00	0.00
230010204001	230004	Lewiston	0.00	0.00	0.00	0.00
230010204002	230004	Lewiston	0.00	0.00	0.00	0.00
230010205001	230004	Lewiston	0.00	0.00	0.00	0.00
230010205002	230004	Lewiston	0.00	0.00	0.00	0.00
230010205003	230004	Lewiston	0.00	0.00	0.00	0.00
230010206001	230004	Lewiston	0.00	0.00	0.00	0.00
230010206002	230004	Lewiston	0.00	0.00	0.00	0.00
230010207001	230004	Lewiston	0.00	0.00	0.00	0.00
230010207002	230004	Lewiston	0.00	0.00	0.00	0.00
230010208001	230004	Lewiston	0.00	0.00	0.00	0.00
230010208002	230004	Lewiston	0.00	0.00	0.00	0.00
230010209001	230004	Lewiston	0.00	0.00	0.00	0.00
230010209002	230004	Lewiston	0.00	0.00	0.00	0.00
230010209009	230004	Lewiston	0.00	0.00	0.00	0.00
230010301002	230005	Lisbon	0.00	0.00	0.00	0.00
230010301009	230005	Lisbon	0.00	0.00	0.00	0.00
230010302001	230005	Lisbon	0.00	0.00	0.00	0.00
230010302002	230005	Lisbon	0.00	0.00	0.00	0.00
230010302009	230005	Lisbon	0.00	0.00	0.00	0.00
230010400001	230002	Durham	0.00	0.00	0.00	0.00
230010400002	230002	Durham	0.00	0.00	0.00	0.00
230010410001	230009	Poland	0.00	0.00	0.00	0.00
230010410002	230009	Poland	0.00	0.00	0.00	0.00
230010410003	230009	Poland	0.00	0.00	0.00	0.00

230010415001	230008	Minot	0.00	0.00	0.00	0.00
230010415002	230007	Mechanic Falls	0.00	0.00	0.00	0.00
230010415003	230007	Mechanic Falls	0.65	4.33	0.32	4.13
230010420001	230010	Turner	0.00	0.00	0.00	0.00
230010420002	230010	Turner	0.00	0.00	0.00	0.00
230010420003	230010	Turner	0.00	0.00	0.00	0.00
230010420004	230010	Turner	0.00	0.00	0.00	0.00
230010430001	230173	Livermore	0.00	0.00	0.00	0.00
230010430002	230173	Livermore	0.00	0.00	0.00	0.00
230010440001	230006	Livermore Falls	0.00	0.00	0.00	0.00
230010440002	230006	Livermore Falls	0.00	0.00	0.00	0.00
230010440003	230006	Livermore Falls	0.00	0.00	0.00	0.00
230010450001	230003	Leeds	0.00	0.00	0.00	0.00
230010460001	230475	Greene	0.00	0.00	0.00	0.00
230010460002	230475	Greene	0.00	0.00	0.00	0.00
230010460003	230475	Greene	0.00	0.00	0.00	0.00
230010465001	230011	Sabattus	0.00	0.00	0.00	0.00
230010465002	230011	Sabattus	0.00	0.00	0.00	0.00
230010465003	230011	Sabattus	0.00	0.00	0.00	0.00
230010465004	230439	Wales	0.00	0.00	0.00	0.00
Minimum			0.00	0.00	0.00	0.00
Maximum			11.31	7.30	3.77	7.05
Mean			0.23	0.30	0.07	0.28
Median			0.00	0.00	0.00	0.00

Census block group	Community identification number	Community name	Policies density	Policies density score	Disasters	Disasters score	Final census block group score
230010101001	230001	Auburn	0.00	0.00	14	8.24	25.97
230010101002	230001	Auburn	60.31	8.56	14	8.24	57.20
230010102001	230001	Auburn	10.41	7.19	14	8.24	37.67
230010102002	230001	Auburn	1.22	5.52	14	8.24	34.91
230010102009	230001	Auburn	0.05	3.03	14	8.24	24.04
230010103001	230001	Auburn	0.00	0.00	14	8.24	26.76
230010103002	230001	Auburn	0.00	0.00	14	8.24	25.23
230010104001	230001	Auburn	1.62	5.75	14	8.24	35.29
230010104002	230001	Auburn	3.74	6.39	14	8.24	30.77
230010105001	230001	Auburn	68.17	8.65	14	8.24	44.02
230010105002	230001	Auburn	0.00	0.00	14	8.24	25.82
230010106001	230001	Auburn	9.75	7.14	14	8.24	47.82
230010106002	230001	Auburn	0.13	3.79	14	8.24	25.22
230010107001	230001	Auburn	0.89	5.28	14	8.24	34.01
230010107002	230001	Auburn	0.39	4.63	14	8.24	33.23
230010108001	230001	Auburn	10.86	7.22	14	8.24	31.46
230010108002	230001	Auburn	5.82	6.74	14	8.24	32.06
230010108009	230001	Auburn	0.54	4.90	14	8.24	23.86
230010201001	230004	Lewiston	0.00	0.00	14	8.24	34.39
230010201002	230004	Lewiston	10.29	7.18	14	8.24	38.96
230010202001	230004	Lewiston	0.00	0.00	14	8.24	25.76
230010202002	230004	Lewiston	7.10	6.89	14	8.24	31.37
230010203001	230004	Lewiston	0.00	0.00	14	8.24	25.82
230010203002	230004	Lewiston	0.00	0.00	14	8.24	26.90
230010203003	230004	Lewiston	0.00	0.00	14	8.24	28.05
230010204001	230004	Lewiston	0.00	0.00	14	8.24	25.69
230010204002	230004	Lewiston	54.98	8.48	14	8.24	43.10
230010205001	230004	Lewiston	0.00	0.00	14	8.24	25.56
230010205002	230004	Lewiston	0.00	0.00	14	8.24	31.08
230010205003	230004	Lewiston	13.64	7.40	14	8.24	38.87
230010206001	230004	Lewiston	0.00	0.00	14	8.24	25.00
230010206002	230004	Lewiston	0.31	4.46	14	8.24	24.47
230010207001	230004	Lewiston	0.00	0.00	14	8.24	24.19
230010207002	230004	Lewiston	1.86	5.85	14	8.24	34.31
230010208001	230004	Lewiston	0.96	5.34	14	8.24	30.01
230010208002	230004	Lewiston	0.52	4.86	14	8.24	26.03
230010209001	230004	Lewiston	0.00	0.00	14	8.24	29.68
230010209002	230004	Lewiston	4.28	6.50	14	8.24	36.17
230010209009	230004	Lewiston	0.00	0.00	14	8.24	21.29
230010301002	230005	Lisbon	2.13	5.96	14	8.24	33.36
230010301009	230005	Lisbon	0.14	3.87	14	8.24	24.12
230010302001	230005	Lisbon	0.00	0.00	14	8.24	23.29
230010302002	230005	Lisbon	0.80	5.20	14	8.24	28.61
230010302009	230005	Lisbon	0.00	0.00	14	8.24	20.11
230010400001	230002	Durham	0.29	4.40	14	8.24	30.16
230010400002	230002	Durham	0.28	4.39	14	8.24	32.30
230010410001	230009	Poland	0.48	4.80	14	8.24	30.44
230010410002	230009	Poland	0.04	2.91	14	8.24	28.48
230010410003	230009	Poland	0.34	4.53	14	8.24	30.56

230010415001	230008	Minot	0.07	3.27	14	8.24	30.28
230010415002	230007	Mechanic	0.12	3.75	14	8.24	29.18
230010415003	230007	Mechanic	2.27	6.01	14	8.24	45.28
230010420001	230010	Turner	0.16	3.96	14	8.24	30.96
230010420002	230010	Turner	0.34	4.54	14	8.24	30.67
230010420003	230010	Turner	0.47	4.77	14	8.24	30.40
230010420004	230010	Turner	0.37	4.59	14	8.24	31.63
230010430001	230173	Livermore	0.15	3.88	14	8.24	27.98
230010430002	230173	Livermore	0.42	4.70	14	8.24	28.51
230010440001	230006	Livermore	0.00	0.00	14	8.24	24.40
230010440002	230006	Livermore	1.09	5.44	14	8.24	26.50
230010440003	230006	Livermore	0.00	0.00	14	8.24	19.04
230010450001	230003	Leeds	0.18	4.05	14	8.24	29.38
230010460001	230475	Greene	0.50	4.84	14	8.24	30.65
230010460002	230475	Greene	0.07	3.31	14	8.24	28.81
230010460003	230475	Greene	0.28	4.37	14	8.24	29.83
230010465001	230011	Sabattus	1.95	5.89	14	8.24	39.90
230010465002	230011	Sabattus	0.00	0.00	14	8.24	27.49
230010465003	230011	Sabattus	0.10	3.54	14	8.24	30.44
230010465004	230439	Wales	0.00	0.00	14	8.24	24.36
Minimum			0.00	0.00	14	8.24	19.04
Maximum			68.17	8.65	14	8.24	57.20
Mean			4.07	3.60	14	8.24	30.42
Median			0.28	4.39	14	8.24	29.83