



Discovery Report

Saco River Watershed, HUC-8 01060002
Carroll, Coos, Grafton Counties, New Hampshire
Oxford County, Maine
Communities listed inside cover
Report Number 01

December 2022



Project Area Community List

Community Name
Carroll County, NH
Town of Albany
Town of Bartlett
Town of Brookfield
Town of Chatham
Town of Conway
Town of Eaton
Town of Effingham
Town of Freedom
Town of Hale's Location
Town of Hart's Location
Town of Jackson
Town of Madison
Town of Moultonborough
Town of Ossipee
Town of Sandwich
Town of Tamworth
Town of Tuftonboro
Town of Wakefield
Town of Wolfeboro
Coos County, NH
Coos County Unincorporated Areas
Town of Carroll

Community Name
Grafton County, NH
Grafton County Unincorporated Areas
Town of Bethlehem
Town of Lincoln
Town of Waterville Valley
Oxford County, ME
Batchelders Grant Township
Mason Township
Town of Brownfield
Town of Denmark
Town of Fryeburg
Town of Hiram
Town of Lovell
Town of Porter
Town of Stoneham
Town of Stow
Town of Sweden
Town of Waterford

Cover photo source (<https://sacorivercampingarea.com/blog-post/fun-things-north-conway/>)

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Acronym List

AEP	Annual Exceedance Probability
BFE	Base Flood Elevation
BLE	Base Level Engineering
cfs	Cubic feet per second
CID	Community Identification number
CNMS	Coordinated Needs Management Strategy
CRS	Community Rating System
DFIRM	Digital Flood Insurance Rate Map
DOQ	Digital Orthophoto Quadrangles
°F	Degrees Fahrenheit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FOA	First Order Approximation
GIS	Geographic Information Systems
H&H	Hydraulics and Hydrology
HEC-RAS	Hydrologic Engineering Center's River Analysis System
HUC	Hydrologic Unit Code
LFD	Letter of Final Determination
LiDAR	Light Detection and Ranging
LOMA	Letter of Map Amendment
LOMC	Letter of Map Change
MAP	Mapping, Assessment and Planning
NFIP	National Flood Insurance Program
NHD	National Hydrography Dataset
NLD	National Levee Database
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
SOMA	Summary of Map Actions
USGS	United States Geological Survey

Preface

Through Risk Mapping Assessment and Planning (Risk MAP), the Federal Emergency Management Agency (FEMA) is collaborating with states, tribes, and local stakeholders to help make communities safer and stronger by working with them to identify natural hazards that impact them, actions that can be taken to reduce their impact, and available resources and solutions to improve resiliency. This report captures the first step in this process—Discovery.

During the Discovery phase, FEMA and the collaborators work to gather community knowledge, apply the best scientific modeling, and begin to assess the safety of residents and security of communities regarding risk from natural hazards, including flooding. This report can be used as the community moves forward in identifying and implementing risk reducing measures. FEMA will continue to coordinate and communicate with the Saco River Watershed communities to identify potential partnership opportunities in the process of building resilience.

This Discovery Report documents the flood-related data that has been collected, as well as the information on community needs and priorities obtained as a part of Discovery meetings. It includes a summary of the findings of the first step of the Discovery process including flood mapping options, technical assistance needs, and opportunities for mitigation action and improved communication.

I. Discovery Overview

The Discovery process, which identifies the flood restudy priorities and areas of flood risk concern for communities within a watershed, assists FEMA and the communities in comprehending the projects that may aid in the reduction of their risk from natural disasters. FEMA will use the Discovery process to determine which areas of a watershed may be funded for further flood risk identification and assessment. These can be big decisions for a community, and the Discovery process helps to ensure that FEMA works in a collaborative manner, taking into consideration the information collected from local communities.

During Discovery, FEMA and the State reach out to local communities to:

- Gather information about local flood hazards and risk
- Document needs related to flood hazard mapping and the National Flood Insurance Program (NFIP)
- Involve multidisciplinary staff from within communities to participate and assist in the identification and mitigation of risk

Data and community knowledge captured in this process will comprise the Discovery Report, which will be used to develop a Risk MAP project scope of work.

II. General Information

General Watershed Information

This Discovery Report captures information related to the portions of the Saco River Watershed contained within the states of Maine and New Hampshire (except for York and Cumberland counties in Maine).

The Saco River HUC-8 Watershed covers approximately 782,802 acres 1,223 square miles and drains the Saco River basin in the areas of Southwest Maine and Northeast New Hampshire. The Saco River flows primarily through the Crawford Notch in the White Mountain Nation Forest through a narrow, steep-sided valley with exposed rock cliffs. The upper Saco River is characterized by fast-moving water, tumbling over rocks and boulders with frequent cascades (New Hampshire Department of Environmental Services). The topography within the watershed is generally characterized by hills and valleys with a mean elevation of 341.2 feet NAVD88, a maximum elevation of 1,910.9 feet NAVD88, and a mean slope of 9.7 degrees. The Saco River Watershed drains 1,690 square miles through the Saco River valley, through major rivers, which include the Saco River, Bearcamp River and Old Course Saco River. The major tributaries to the Saco River (from north to south or upstream to downstream) include Upper Saco River, Swift River, and Conway Tributaries. The National Weather Service has identified three different climate divisions for the State of Maine: Coastal, Southern Interior, and Northern. The coastal annual average temperature is 44.3°F and an annual average precipitation is 46.49 in. The southern interiors average temperatures are 43.15° F, and the annual average precipitation is 44.12 in. Lastly, the northern division average temperature is 39.31 °F with an average annual precipitation of 41.13 in. For New Hampshire, the average minimum temperatures in January are colder in the north (Lancaster: 2°F to 7°F) and at a higher elevation (Mount Washington: -5° F to -1°F) than in the south (Concord: 12°F to 15°F). Coastal communities such as Portsmouth area are warmer with average minimum temperatures ranging 15°F to 18°F. Average maximum temperatures in July range from 75°F to 80° F in the north and 80°F to 85° F in the south. The state annual average annual precipitation is 48.8 in (NOAA).

There are 37 communities in 4 counties and 2 states that are within the Saco River Watershed study area. Four of these communities- Town of Bethlehem, Town of Lincoln, Town of Carroll, and Coos County Unincorporated Areas- have small areas within the Saco River Watershed and no mapped flooding sources from the Saco River Watershed. These communities were included in the Discovery process and are referenced in this report. Refer to the second page of this report for the Project Area Community List.

According to the 2019 American Community Survey (ACS) data, the total population inside the Saco River Watershed was approximately 44,010 people with an average population density of 36 people per square mile. For the state of Maine, communities designated under the Land Use Planning Commission (LUPC) did not have available ACS data summarized at the community level; therefore, the population was calculated based on the available ACS data for these areas. Although all communities have received new countywide Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS) Reports, many of the communities and flooding sources in the Saco River Watershed have

not received new or updated detailed studies since their original FISs were compiled in the late 1970s and early 1980s owing to the low population density of the study area.

FEMA's Discovery effort in the Saco River Watershed study area will involve data collection, cursory analysis, and community outreach for the purpose of prioritizing work for new engineering analysis (surveying, hydrology, and hydraulics) and floodplain mapping within a limited financial budget.

CNMS Overview

The NFIP Reform Act of 1994 requires FEMA to assess each participating community's flood hazard information on a regular basis. The Coordinated Needs Management Strategy (CNMS) provides a way for FEMA to track and inventory flood study needs (by community) in a spatial format. Through completing annual state business plans and 5-year map needs assessments, in addition to validating effective flood risk studies, FEMA is able to maintain a record of stakeholder mapping needs for reference during Discovery, project scoping, and project kickoff. Streams are validated in CNMS every 5 years; therefore, validation dates vary by stream.

CNMS can show watershed stakeholders where flood hazard information exists that has been "verified" by looking at factors such as the amount of development and physical and hydrological changes in the drainage. Flood mapping needs indicated by CNMS will be verified and adjusted based on input received during the Discovery process, as documented in this report.

Based on previous studies, the rivers and streams within the Saco River Watershed are currently mapped as A Zone (approximate), AE Zone (detailed), and Shaded X Zone. According to CNMS (FEMA, 2020), there are 1,045.8 total miles, 390.9 miles are currently mapped as A Zone, 222.4 miles are AE Zone, and 432.4 miles are Shaded X Zone.

The Discovery Scope for Saco River Watershed does not include York and Cumberland counties.

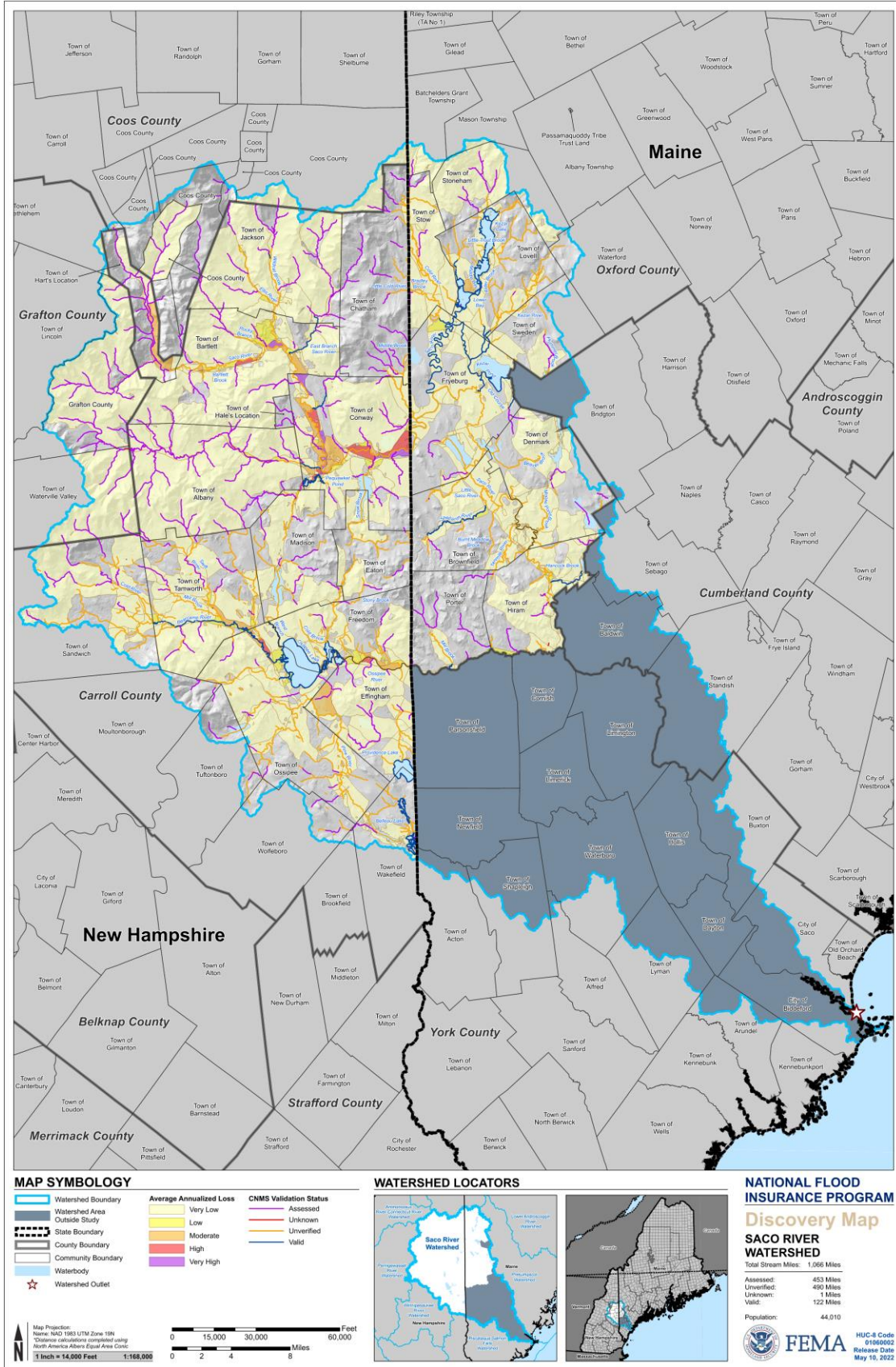
Table 1 summarizes the results of the validation status obtained from CNMS.

Table 1. CNMS Validation Status (Distance in stream miles)

Status	Stream Miles
Assessed	432.4
Unverified	490.7
Unknown	0.3
Valid	122.4
Total Stream Miles	1,045.8

Figure 1 shows the current CNMS overview of flood study needs within the Saco River Watershed.

Figure 1. CNMS Overview of Flood Study Needs



III. Watershed Community and Stakeholder Coordination

As part of the Discovery process, FEMA engaged with community officials and stakeholders. These stakeholders represent organizations such as government agencies and other associations that are involved with the Saco River Watershed. Stakeholders included representatives of community emergency officials (police and fire departments), community land use departments, representatives of the select board, and building inspectors and planning commission member. In addition to representatives from the 37 communities within the Saco River Watershed, the State(s) of Maine and New Hampshire were identified as stakeholders. A list of community and stakeholder contacts was prepared and kept current throughout the Discovery process.

Several community contacts were elected officials whose terms may have expired during the Discovery process. Up-to-date contact information was maintained via telephone conversations so that information reached the proper community officials and stakeholder contacts. The list of communities is shown at the beginning of this report.

The communities and stakeholders were contacted via email on April 15, 2022. On April 19, 2022, communities were invited to complete and return data collection questionnaires in advance of the Discovery Meetings scheduled to be held on May 10, 2022, and May 11, 2022. Also included in **Appendix A** is the template of the letter and the questionnaire that was sent to communities prior to the meetings in May 2022.

Of the 37 communities included in the Saco River Watershed Discovery process, 5 responded with feedback. The remaining 32 communities did not provide responses. After the questionnaires were returned, the data were analyzed and organized to produce the draft Discovery Report and associated maps. The attendance list, as well as information presented during the meetings (PowerPoint presentation), are included in **Appendix B**. See **Appendix A** for the list of community and stakeholder contacts at the time of the Discovery Meetings.

IV. Discovery Meeting

To communicate the Discovery process and include the expertise of key local stakeholders, the Discovery Meetings for the Saco River Watershed were held virtually on May 10, 2022, and May 11, 2022. 3 out of the 37 invited communities were represented at these meetings. See **Appendix B** for the attendance list from each meeting.

Identical information was presented at each Discovery Meeting. The community and stakeholder representatives were first introduced to their local FEMA Region 1 contacts, State partners, and FEMA's Consultant Team: Compass. The information provided during the meeting included an overview of Risk MAP, a description of the outreach that will occur over the course of the study, the scope of work for the Saco River Watershed project, and the status of each community's mitigation plan. The communities were informed of the best available data, including the following:

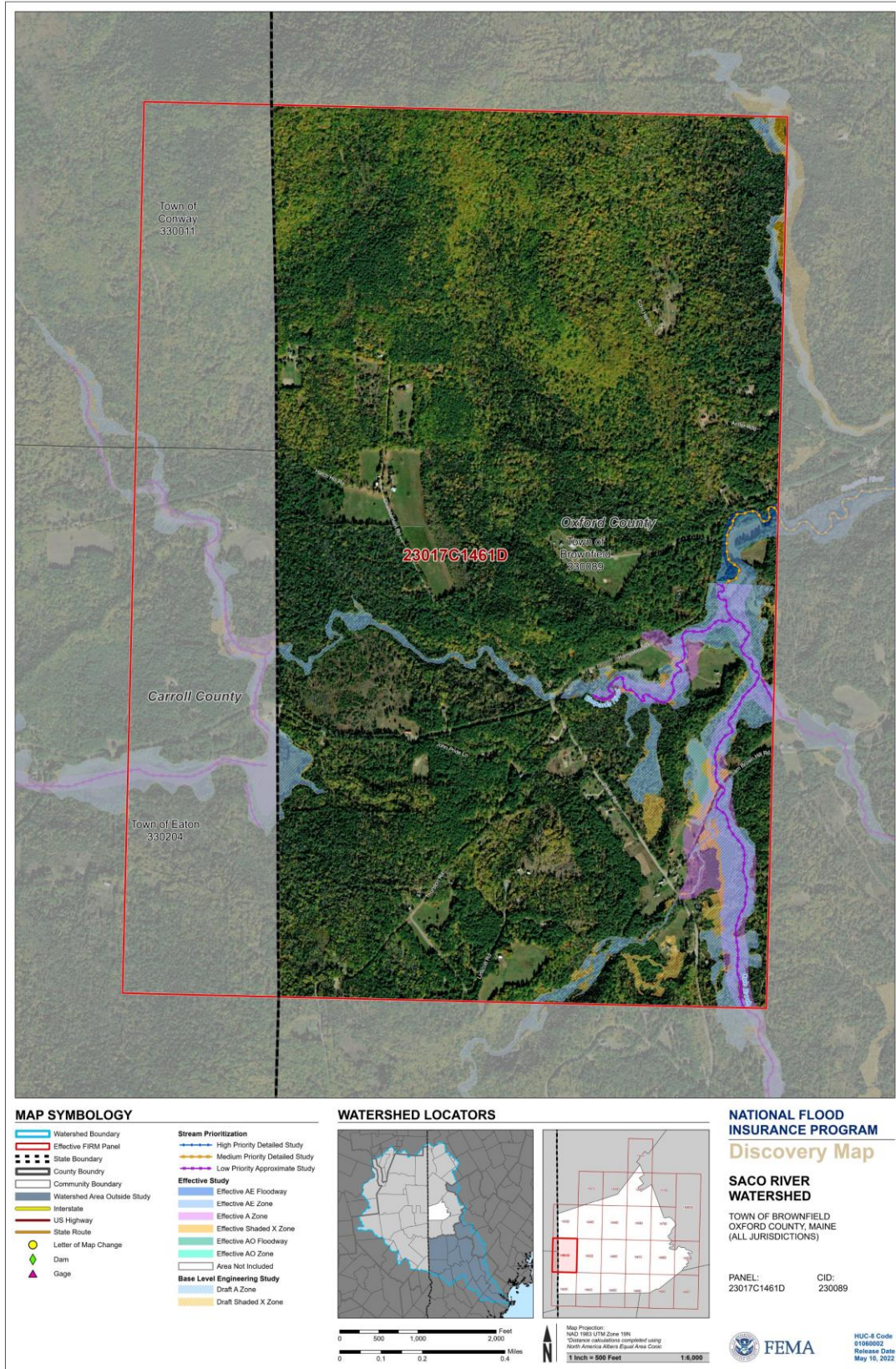
- LiDAR (Light Detection and Ranging) elevation data
- U.S. Geological Survey (USGS) data for peak flows
- Orthophotography data
- Natural Resources Conservation Service (NRCS) Dam Rehabilitation Program data
- USGS stream gage data
- Existing Digital Flood Insurance Rate Maps (DFIRMs)

To help the attendees understand the components of the potential flood hazard study for this watershed, the presenters described the five different levels of study that may be used. Each level of study has a different methodology. These methodologies are summarized in Section V – Data Collection, which discusses the scope of the Saco River Watershed study. To further illustrate these study types, each community was given a map showing the Preliminary study designations for the streams in their municipality. **Figure 2** shows the map for the Town of Brownfield, Maine as an example.

The community representatives in attendance received a community profile as well as Discovery maps to review and indicate their areas of interest. This information was discussed in detail during the Discovery meetings. Communities were encouraged to participate in the outreach meetings that would take place throughout the life of the Risk MAP study and to communicate with FEMA and their local officials, because enhanced communication is one of the primary goals of Risk MAP.

A question and answer (Q&A) session followed the presentation; live virtual interactive session included all attendees to review and discuss areas of interest to be flagged for potential study. See **Appendix C** for the Discovery Meeting synopses.

Figure 2. Sample Areas of Interest for Potential Study (Town of Brownfield, Maine)



V. Data Collection

Introduction

Data collected by Compass for the Discovery Meeting planning process, both during and after completion of the Discovery Meetings, are summarized below. Data is broken into two categories: (1) data that can be used for flood risk projects and (2) other data. Other data includes data that provides information that assists in the selection of high priority reaches for study in a potential flood risk project during Discovery but that are likely not useful to the analysis in any other way.

Data That Can Be Used for Flood Risk Projects

Information Provided by Communities

Five communities provided data and/or information during the Discovery process. This was received in several different formats: digital copies of the Discovery maps with written notes, verbal feedback at the Discovery Meeting during the interactive session, or in email format. The questionnaire completed by communities will be provided in **Appendix D**. Information gathered as of August 1, 2022, was included in the report.

Annotated Maps

The comments and areas of concern collected from the communities at the two Discovery meetings and other feedback mechanisms were digitized and considered for flood study prioritization. **Appendix D** includes the Discovery Maps denoting areas of interest for potential study, as of August 1, 2022, and a community feedback table with numbered comments corresponding to those Discovery Maps in the Saco River Watershed.

There were 27 areas with concern in total within the Saco River Watershed. Of the 27 areas of concern, there were 2 areas of concern related to areas with flooding issues, 3 areas of concern related to comments about structure, 1 area of concern related to leverage studies being available, 1 area of concern related to structures and 2 areas of concern related to request for study or comment about flood mapping.

The 27 comments logged impacted 4 streams in the Saco River Watershed. Please refer to **Appendix D** for more details on these comments and the streams impacted.

All of the comments will be entered into the CNMS database as requests that will be tracked and updated as new studies are initiated or additional information becomes available.

Hazard Mitigation Plans

Hazard mitigation planning reduces loss of life and property by reducing the impacts of disasters through planning and execution of mitigation activities. Several communities in this watershed have developed hazard mitigation plans with valuable information around hazards and opportunities for mitigation activities. **Appendix E** provides the local Hazard Mitigation Plan status.

Community Profiles

Each community profile (a one-sheet document with information about the community) included the following: Community Identification number (CID); NFIP status; current map date; NFIP regulation level (based on its flood map); number of Letters of Map Change (LOMCs); participation in the NFIP Community Rating System (CRS); dates of Community Assistance Contacts and Community Assistance Visits; demographics and industry information according to the U.S. Census; presidentially declared disasters; NFIP policy data; levees and flood-control structures; environmentally sensitive, Tribal, and coastal areas; number of statewide and county grants; and hazard mitigation projects. See **Appendix F** for the community profiles.

Letters of Map Change (LOMCs)

The major rivers identified in the Saco River Watershed have Letters of Map Amendment (LOMA).

The three major flooding sources each include a number of Letters of Map Change (LOMCs):

- Saco River 94 LOMCs,
- Bearcamp River 19 LOMCs, and
- Old Course Saco River 3 LOMCs.

Based on LOMC clusters, the five flooding sources with the most LOMCs are:

- Saco River 94 LOMCs,
- Belleau Lake 42 LOMCs,
- Ossipee Lake 31 LOMCs,
- Swift River 28 LOMCs, and
- Ossipee River 19 LOMCs.

If a study is initiated in a community, all LOMCs in the study area will be assessed and communities will be informed if the LOMCs are anticipated to remain in effect or be superseded, first by the preliminary Summary of Map Actions (SOMA) at a study's preliminary release and then by the final SOMA, when the Letter of Final Determination (LFD) is issued. When a new study becomes effective, the communities receive a Revalidation Letter that officially indicates which LOMCs are still effective.

Levee, Dam and Gage Information

The U.S. Army Corps of Engineers' National Levee Database (NLD) indicates that there are no levees in the Saco River Watershed.

Other flood-control structures exist within the Saco River Watershed, including 141 mapped dams. These may be assessed in more detail if it is determined that the associated flood sources require further study or restudy. Additionally, there are currently 3 active stream gages and 10 inactive stream gages along water features in the Saco River Watershed.

Topographic Data

Light Detection and Ranging (LiDAR) elevation data are available for the entire Saco River Watershed study area and were used in the Base Level Engineering (described below). The source for the New Hampshire LiDAR data was obtained from a report titled New Hampshire 2016 LiDAR Project Report, April 25, 2019, prepared by Quantum Spatial, Inc. on behalf of the USGS. The data was collected from 12 November 2016 to 24 May 2018. The Maine portion of the Saco River Watershed LiDAR data was obtained from Maine GIS titled Maine Elevation DEM 2 Meter September 16, 2018, collected from 2006 to 2013. A mosaicked LiDAR dataset for the entire watershed was created and will be available for floodplain mapping and analysis in a flood risk project.

Base Map Data

Transportation, hydrography, and political boundary features- as shown on the Discovery and community information maps- were obtained from the online state Geographic Information Systems (GIS) depot for Maine and New Hampshire in 2021.

Transportation data for New Hampshire came from two sources: New Hampshire Department of Transportation: <https://www.nhgeodata.unh.edu/datasets/nh-dot-roads/explore?location=43.989800%2C-71.634300%2C8.45>; and U.S. Geological Survey <https://www.sciencebase.gov/catalog/item/4f70b1f4e4b058caae3f8e16>. The transportation data for Maine came from Maine GIS: <https://maine.hub.arcgis.com/datasets/1436fb9a986c445ea803a90865bd4b51/explore?location=45.233865%2C-69.006891%2C8.29>

The political boundary features for New Hampshire came from New Hampshire GRANIT GIS Clearinghouse: <https://www.nhgeodata.unh.edu/datasets/NHGRANIT::new-hampshire-political-boundaries/explore?location=43.979125%2C-71.629700%2C8.61>. The political boundaries for Maine came from Maine GeoLibrary: <https://www.maine.gov/geolib/catalog.html>

The hydrography features are sourced from the USGS's National Hydrography Dataset (NHD): <https://viewer.nationalmap.gov/basic/?basemap=b1&category=nhd&title=NHD%20View#/>

All base map features will be useful in the Flood Insurance Rate Map (FIRM) database for a potential flood risk project.

Base Level Engineering

Base level engineering (BLE) is an automated riverine hydrologic and hydraulic (H&H) modeling approach that produces technically credible flood data at a large scale, such as a watershed or county. The information produced meets the mapping standards for a Zone A, or approximate 1-percent annual chance study. This data can be leveraged at the Discovery stage to help communities assess how their flood risk may have changed since the last study and provide a basis for further discussions during discovery meetings.

The BLE process used in this watershed was 2-dimensional rain-on-grid modeling, using Hydrologic Engineering Center's River Analysis System (HEC-RAS). In this methodology, the hydrologic characteristics of the watershed (including rainfall, runoff, and infiltration) are modeled for the entire watershed. The hydraulic modeling uses a grid of cells

(averaging 200 by 200 feet) covering the watershed, with adjustments for structures and other features. The model then simulates the flow of water from cell to cell using a diffusion wave equation, and the results are interpolated to produce the output raster data.

Because the raster data produces data across the entire watershed, some additional cleanup and processing steps are needed to create floodplains. The 1-percent and 0.2-percent annual exceedance probability (AEP, also commonly referred to as the 100-year and 500-year floods) raster are smoothed and simplified into floodplains. Small holes or islands and very shallow areas are removed, and 1-percent flood zones with areas smaller than 1 square mile are changed to a Shaded X Zone with a “1-percent drainage area less than 1 square mile” subtype, as shown on the Discovery maps.

Once generated from the surfaces, the floodplains can be used directly in updated regulatory mapping (e.g., FIRM panels), and the water surfaces and depth grids can be used directly in nonregulatory products to assist with planning. Water surfaces can also be used in the validation of LOMCs that FEMA receives regarding properties that are mapped in Zones A. Currently, it is difficult to determine if a property or structure is actually above the flood level because no numerical water surface is available. With the creation of these new water surfaces, a numerical value for the flood height will be available for comparison with the property and structure elevations to determine the validity of LOMCs.

Other Data and Information

Effective Flood Insurance Study/Flood Insurance Rate Map Data

Hydrology

Effective discharges were obtained from the Carroll County Flood Insurance Study Report (FEMA, 2013a), the Coos County Flood Insurance Study Report (FEMA, 2013b), the Grafton County Flood Insurance Study Report (FEMA, 2008), and the Oxford County Flood Insurance Study Report (FEMA, 2009). These FIS reports were prepared to include the incorporated communities within Carroll, Coos, Grafton and Oxford Counties into their respective countywide FIS. Given the mountainous terrain and steep slopes, flooding stages can occur quickly, and flooding can occur throughout the year, but generally is more pronounced in winter and early spring as a result of heavy rainfall on snow-covered ground.

Major flooding events in Carroll County occurred in March 1936, March 1953, and June 1973 (and 1984 for the Towns of Tuftonboro and Wolfeboro). Hurricane rainfall caused floods in November 1927, September 1938, and June 1973. The Grafton FIS report indicates that torrential rain in the White Mountains following unseasonably wet periods has created 5 of the 6 largest floods of record for the area. Significant flooding events have occurred throughout the counties on the following waterways: Saco River, Swift River, Ossipee Lake, Ossipee River, and the Old Course Saco River. The low-head dam outlet for Kezar Lake in Lovell, Maine, generally floods due to flooding on the Saco and Old Course Saco Rivers. Peak discharges along the Saco River are recorded at the gages in Conway, New Hampshire, (USGS station No. 01064500) and in Cornish, Maine, (USGS station No. 01066000).

Low lying areas of Brownfield, Hiram, Fryeburg, and Denmark experience flooding caused by the overflow from both the Ossipee and Saco Rivers, with major historic floods in March

1936, March 1953, and April 1987. The bog areas upstream and within these towns act as natural flood retarding basins for areas downstream by reducing the peak discharges in those areas. Flood protection measures in this area include steep banks along the Ossipee River, Hiram Falls Dam, and land use regulations by the Saco River Corridor Commission established by state law in 1973.

In general, regional regression analysis was used to estimate discharges. Gage analysis for gage stations on the Ammonoosuc River, Ellis River, Little Androscoggin River, Lucy Brook, and Ossipee River were used for those streams and streams of comparable size in the vicinity (including the Rocky Branch, Wildcat Brook, Bartlett Brook, Marsh Brook, West Branch). Discharges developed by SCS discharge-frequency relationships were used for the Saco River, Swift River, and the lower portion of the East Branch Saco River. Gage analysis was also performed on the Saco River. Due to the flow attenuation at low-lying areas in Oxford County, the Saco River experiences decreases in peak discharges downstream of those areas. Routing of the Saco River with the Swan Fall Dam in Fryeburg was performed using U.S. Army Corps of Engineers (USACE) HEC-1 (USACE, 1973a). USACE HEC-2 (USACE, 1973b) was used for developing stage-discharge relationships from peak flood discharges at Kezar Lake from the confluence of the Saco River and the Old Course Saco River in Fryeburg. Various streams in Oxford County, Maine (specifically those in Denmark, Porter, and Brownfield, excluding the Saco River) were computed using the regional regression analysis published in the USGS Open-File Report 75-292 (USGS, 1975).

Stillwater elevations were calculated for Belleau Lake, Ossipee Lake, Pequawket Pond, Province Lake, and Stump Pond. These elevations were derived by applying flows estimated from SCS hydrographs, gage analysis, or regional regression equations and routing them through their respective reservoirs. Stillwater elevations for Province Lake were computed by measuring inflows for a 24-hr period and applying those inflows to a regional equation.

Hydraulics

Information for hydraulic structures in this county during this effective study was obtained from field survey and photogrammetric maps. In general, water surface elevations (WSELs) are calculated and reported using hydraulic computer programs. In Maine, WSELs along the Saco River and Shepard's River in Brownfield were determined by using USACE HEC-1 (USACE, 1973a) and HEC-2 (USACE, 1976a) computer programs. WSELs for study streams in Denmark and Hiram were computed through the HEC-2 computer program (USACE, 1976b). WSELs for study streams in Fryeburg and Porter were computed through the HEC-2 computer program (USACE, 1973b). Other streams included in the Oxford County, Maine, countywide hydraulic analysis utilized HEC-RAS version 3.1.3 computer program (USACE, 2005).

In New Hampshire, WSELs for Bartlett Brook, upper portion of the East Branch Saco River, Ellis River, Marsh Brook, Rocky Branch, and Wildcat Brook were developed using the HEC-2 computer program (USACE, 1976b). For Bearcamp River in Tamworth, the lower portion of the East Branch Saco River, Saco River, and Swift River, WSELs were developed using SCS WSP-2 computer program (SCS, 1976).

WSELs of another reach of Bearcamp river and Ossipee Lake, Lovell River, Kearsarge Brook, and West Branch were developed using the HEC-2 computer program (USACE, 1991). The HEC-2 split flow option was used to calculate flow that leave the Lovell River at a low ridge along its south bank in the Town of Ossipee. WSELs for Branch River were computed using the USGS step-backwater computer program, E-431 (USGS, 1976).

National Flood Insurance Program Claims Data

FEMA furnished a dataset of all claims made against the NFIP since its inception in the 1970s until 2021. During that period, the data pull returned 390 NFIP claims in that period, totaling \$3,201,331 with an average reimbursement of \$8,208.41 per claim filed.

Often, a successful NFIP claim occurs when, according to the effective FIRM, a property that is at risk of flooding actually floods during the base flood. (The exceptions are claims against “discount” policies for properties that are located outside the Special Flood Hazard Area. The percentage of claims in this category could not be ascertained with the data provided but is assumed to be minimal.) Therefore, NFIP claims data cannot be used to draw any conclusions for Discovery about reaches that may be high priorities for restudy because of outdated hydrology, hydraulics, topography, or structure inventories. However, high concentrations of NFIP claims (especially those that are costly/ expensive) may draw attention to hotspots where population, structure inventories, and flood hazard are all unusually high, highlighting the high-priority opportunities for mitigation.

VI. Next Step: Prioritization of Study Areas

Three levels of study may be used during the study of the Saco River Watershed: (1) high-priority detailed study, (2) medium-priority redelineation, and (3) low-priority approximate Base Level Engineering Study. The flooding sources that are along the boundaries of York and Cumberland Counties (Ossipee River, Saco River, Dock Brook, Elkins Brook, Barkers Pond and Barkers Pond Tributary 1) have not been included in the prioritization process though redelineation is being considered for these reaches along the county boundaries. **Figure 3** shows the prioritization results within the Maine and New Hampshire portions of the Saco River Watershed.

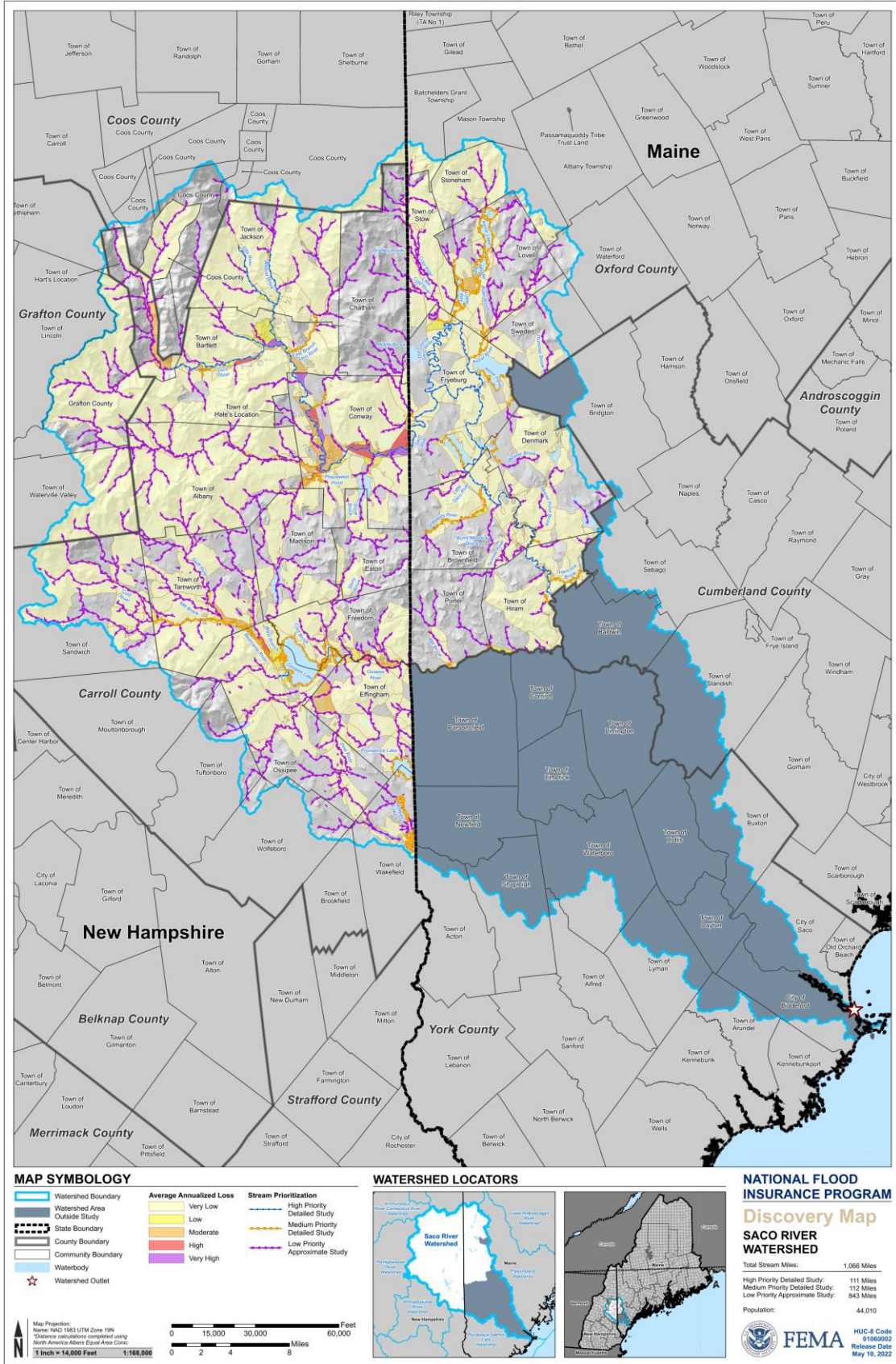
Each level of study uses a different methodology, as summarized below:

- (1) Riverine Zone AE (Detailed Study)
 - Most detailed and most expensive riverine study
 - Structures and cross-sections are field surveyed
 - Stream gage data or regression equations used for hydrology, and Hydrologic Engineering Center’s River Analysis System (HEC-RAS) modeling used for hydraulics
 - Floodway data table and flood profiles are included in the FIS
 - Mapping:
 - Base Flood Elevations (BFEs), appeal eligible

- Cross sections
 - Flood way
 - 1 percent annual exceedance probability (100-year flood) floodplain
 - 0.2 percent annual exceedance probability (500-year flood) floodplain
- (2) Redelineation (Zone AE)
- No new engineering analysis
 - Acceptable when effective BFEs are considered accurate
 - Effective elevation data are transferred to new LiDAR terrain data to create new floodplain delineations for a FIRM
 - Mapping: Effective model data are transferred to new LiDAR terrain data to create new floodplain delineations for FIRMs
 - FIS data: same as effective study
- (3) Riverine Zone A (Base Level Engineering Study)
- Hydrologic and hydraulic modeling analysis based on new terrain data
 - Stream gage data or regression equations used for hydrology, and HEC-RAS modeling used for hydraulics
 - No field survey
 - Cross-section values derived from new LiDAR terrain data
 - Mapping: Approximate delineation for the 1% annual exceedance probability (100-year flood) event (appeal eligible); no BFEs

FEMA Region 1 used the information provided by communities to determine priority areas for study in the next phase of the Risk MAP process. The final selection and prioritization of areas for the new study depend upon the funds that Congress allocates to FEMA Region 1 for this purpose. Funds have been allocated at the time for the study beyond the BLE. Additionally, individual communities may choose to conduct their own studies of priority areas and/or take mitigation actions. Such information should be provided to FEMA Region 1 for consideration as part of the updated maps the communities may receive in the future.

Figure 3. Discovery Prioritization Map, Saco River Watershed



VII. Close

Local officials in the Saco River Watershed communities were willing participants in the Discovery process and were open to learning more about how they can begin to develop resiliency to flood, storm, and manmade hazard events. They identified areas for map updates and areas in which they could use additional technical support from FEMA.

Using the input from the Discovery Meetings, the project team finalized the Discovery Report and Map. From this information, FEMA Region 1 has not yet developed a scope of work and budget for the Saco River Watershed Risk MAP project. The Region will assess the mapping needs in the Saco River Watershed against the mapping needs across all of Region 1 before selecting and initiating this Risk MAP project. Project selection is contingent upon the level of funding FEMA Region 1 receives, which varies yearly. FEMA Region 1 will communicate with the communities about project selections in future correspondence.

If the mapping needs have changed since the information was provided during Discovery, or if the need for a new project is identified after the publication of the Discovery Report, the affected community is responsible for providing updates to FEMA Region 1. Additionally, if a community has the capacity to provide leveraged data or contribute funding toward the completion of a Risk MAP project, FEMA Region 1 will consider the information when prioritizing its projects.

With the completion of the Discovery process for the Saco River Watershed project, the project, upon funding, will move into the next phase which includes the following Risk MAP project workflow:

- Data development procedures, including engineering-related activities, such as H&H analyses, floodplain mapping, and risk assessments
- Development of preliminary FIRMs, which will be distributed to the communities upon completion of the revisions
- Post-preliminary processing tasks, which include initiating the appeal and comment period, community ordinance updates, and distributing the effective FIRM products
- Outreach meetings and community engagement for the entire project life cycle
- Mitigation planning support for the entire project.

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IX. Appendices

Appendix A: Watershed Community and Stakeholder Outreach

- I. Stakeholder Database
- II. Sample Letter
- III. Questionnaire Form
- IV. Sample Post-Meeting Email

Appendix B: Discovery Meeting Materials

- I. Presentation
- II. Meeting Attendees

Appendix C: Meeting Synopses

Appendix D: Community Feedback

- I. Information Provided by Communities and Completed Questionnaires

Appendix E: Hazard Mitigation Plan Status

- I. Hazard Mitigation Plan Status

Appendix F: Community Profiles

Appendix A

Watershed Community and Stakeholder Outreach



FEMA

Region I: Saco River Watershed Discovery Stakeholders

Town	County	State	Name
Town of Albany	Carroll County	NH	Kelley Collins
Town of Albany	Carroll County	NH	Peter Carboni
Town of Bartlett	Carroll County	NH	Lynn Dodelin
Town of Bartlett	Carroll County	NH	Gene Chandler
Town of Brookfield	Carroll County	NH	Rick Surette
Town of Brookfield	Carroll County	NH	Cassandra Rodil
Town of Brookfield	Carroll County	NH	Nick Angelo
Town of Chatham	Carroll County	NH	Jason Eastman
Town of Chatham	Carroll County	NH	Patricia Pitman
Town of Chatham	Carroll County	NH	Riley Pitman
Town of Conway	Carroll County	NH	Jeremy Gibbs
Town of Conway	Carroll County	NH	Krista Day
Town of Conway	Carroll County	NH	David Weathers
Town of Eaton	Carroll County	NH	Joyce Blue
Town of Eaton	Carroll County	NH	Heather McKendry
Town of Effingham	Carroll County	NH	Chuck Fuller
Town of Effingham	Carroll County	NH	Deanna Amaral
Town of Effingham	Carroll County	NH	Rebecca Boyden
Town of Freedom	Carroll County	NH	Stacy Bolduc
Town of Freedom	Carroll County	NH	Gary Williams
Town of Freedom	Carroll County	NH	Leslie R Babb
Town of Hale's Location	Carroll County	NH	Terry McCarthy
Town of Hale's Location	Carroll County	NH	Denis Leighton
Town of Hale's Location	Carroll County	NH	William Lloyd
Town of Hart's Location	Carroll County	NH	Mark Dindorf
Town of Hart's Location	Carroll County	NH	Jeff Sires
Town of Hart's Location	Carroll County	NH	Rich Brereton
Town of Jackson	Carroll County	NH	Jerry Dougherty
Town of Jackson	Carroll County	NH	Andy Chalmers
Town of Jackson	Carroll County	NH	Julie Atwell

Town	County	State	Name
Town of Madison	Carroll County	NH	Michael R. Brooks
Town of Madison	Carroll County	NH	Robert Boyd
Town of Madison	Carroll County	NH	Linda Shackford
Town of Madison	Carroll County	NH	William T. Lord
Town of Moultonborough	Carroll County	NH	Angela Bovill
Town of Moultonborough	Carroll County	NH	Charles F Smith
Town of Moultonborough	Carroll County	NH	Scott S. Dvorak
Town of Moultonborough	Carroll County	NH	Kevin D Quilan
Town of Ossipee	Carroll County	NH	Mike Beaulieu
Town of Ossipee	Carroll County	NH	Matt Sawyer Jr.
Town of Sandwich	Carroll County	NH	Kelly Cox
Town of Sandwich	Carroll County	NH	Joanne Haight
Town of Sandwich	Carroll County	NH	Russ Johnson
Town of Tamworth	Carroll County	NH	Keats Myer
Town of Tamworth	Carroll County	NH	Emery Roberts
Town of Tuftonboro	Carroll County	NH	Cathy Pounder
Town of Tuftonboro	Carroll County	NH	Jack Parsons
Town of Tuftonboro	Carroll County	NH	Matt Young
Town of Tuftonboro	Carroll County	NH	Chip Albee
Town of Wakefield	Carroll County	NH	Peter Gosselin
Town of Wakefield	Carroll County	NH	Dino A Scala
Town of Wolfeboro	Carroll County	NH	Jason Durrance
Town of Wolfeboro	Carroll County	NH	Linda T Murray
Town of Wolfeboro	Carroll County	NH	Tavis Austin
Town of Wolfeboro	Carroll County	NH	Amy Muccio
Town of Carroll	Coos County	NH	Rebecca Pederson
Town of Carroll	Coos County	NH	David Scalley
Unincorporated Areas of Coos County	Coos County	NH	Jennifer Fish
Town of Bethlehem	Grafton County	NH	Mary
Town of Bethlehem	Grafton County	NH	Debra Bayley
Town of Bethlehem	Grafton County	NH	Gabe Boisseau
Town of Lincoln	Grafton County	NH	Ron Beard
Town of Lincoln	Grafton County	NH	O. J. Robinson

Town	County	State	Name
Town of Lincoln	Grafton County	NH	Carina Park
Town of Waterville Valley	Grafton County	NH	David C Noyes
Town of Waterville Valley	Grafton County	NH	Alisha Harrington
Town of Waterville Valley	Grafton County	NH	Mark Decoteau
Unincorporated Areas of Grafton County	Grafton County	NH	Julie Libby
Unincorporated Areas of Grafton County	Grafton County	NH	Wendy Piper
Batchelders Grant Township	Oxford County	ME	Stacie Beyer
Batchelders Grant Township	Oxford County	ME	Tim Carr
Mason Township	Oxford County	ME	Stacie Beyer
Mason Township	Oxford County	ME	Tim Carr
Town of Brownfield	Oxford County	ME	William Flynn
Town of Brownfield	Oxford County	ME	Michelle Day
Town of Brownfield	Oxford County	ME	Michael Vane
Town of Denmark	Oxford County	ME	Luke Allocco
Town of Denmark	Oxford County	ME	Michael Lee
Town of Denmark	Oxford County	ME	Betty LeGoff
Town of Fryeburg	Oxford County	ME	Katie Haley
Town of Fryeburg	Oxford County	ME	Christopher Walton
Town of Fryeburg	Oxford County	ME	Tom Kingsbury
Town of Hiram	Oxford County	ME	Eric Durgin
Town of Hiram	Oxford County	ME	Guy Lehouillier
Town of Hiram	Oxford County	ME	Terry Day
Town of Lovell	Oxford County	ME	Alan Broyer
Town of Lovell	Oxford County	ME	Stephen Goldsmith
Town of Lovell	Oxford County	ME	Letita Genest
Town of Porter	Oxford County	ME	Brent Day
Town of Porter	Oxford County	ME	Dan Davis
Town of Porter	Oxford County	ME	Janice Miller
Town of Porter	Oxford County	ME	Roger Berube
Town of Stoneham	Oxford County	ME	Neal Littlefield
Town of Stoneham	Oxford County	ME	Megan Hamlin
Town of Stoneham	Oxford County	ME	Alan Broyer
Town of Stow	Oxford County	ME	Ronald McAllister

Town	County	State	Name
Town of Stow	Oxford County	ME	Christine Carone
Town of Stow	Oxford County	ME	Margaret Robbins
Town of Sweden	Oxford County	ME	Alberta Ridlon
Town of Sweden	Oxford County	ME	Robert Folson Jr.
Town of Waterford	Oxford County	ME	John Bell
Town of Waterford	Oxford County	ME	Randy Lessard
Town of Waterford	Oxford County	ME	Brenda Bigonski

Agency	Agency Level	Name
FEMA	Federal	Chris Markesich
FEMA	Federal	Kerry Bogdan
FEMA	Federal	Karl Anderson
FEMA	Federal	Colleen Bailey
FEMA	Federal	Bob MacLean
FEMA	Federal	Michael Logar
Maine Floodplain Management Program Dept. of Agriculture, Conservation and Forestry	State	Sue Baker
Maine Floodplain Management Program Dept. of Agriculture, Conservation and Forestry	State	Janet Parker
Maine Emergency Management Agency	State	Heather Dumais
Maine Emergency Management Agency	State	Anne Fuchs
New Hampshire Office of Strategic Initiatives	State	Jennifer Gilbert
New Hampshire Office of Strategic Initiatives	State	Katie Nelson
New Hampshire's Homeland Security and Emergency Management (HSEM)	State	Brian Eaton
New Hampshire's Homeland Security and Emergency Management (HSEM)	State	Jennifer Harper
Southern Maine Regional Planning Commission	Regional	Paul Shumacher
Androscoggin Valley Council of Governments	Regional	Amy Landry
Lakes Region Planning Commission	Regional	Jeffrey Hayes
North County Council	Regional	Michelle Moren-Gray

Attachments:

Watershed_Discovery_Questionnaire.docx

Good Afternoon,

I am writing to inform you of the Federal Emergency Management Agency's (FEMA's) upcoming Risk Mapping, Assessment, and Planning (Risk MAP) Discovery process for the Saco River Watershed. This effort is for all the communities within this watershed that includes parts of Maine and New Hampshire, and includes all or portions of your community.

Risk MAP is a FEMA program that helps communities identify, assess, and reduce their flood risk. By combining quality engineering with updated flood hazard data, FEMA provides accurate and easy-to-use information to enhance local mitigation plans, improve community outreach, and increase local awareness to flood hazards.

The Discovery process commences at the beginning of a Risk MAP project and assists in identifying the scope of the watershed study. Through the Discovery process, we will work with your community to collect data and information that will provide a holistic picture of where vulnerabilities exist, the current flood hazards within your watershed, and opportunities to facilitate mitigation planning to help your community take further actions to reduce flood risk across the watershed. A Discovery meeting with local stakeholders will also be held as part of this process. Although FEMA has not scheduled Discovery meetings yet, it is anticipated that these meetings will occur virtually in May 2022.

We have enclosed a questionnaire for your community to complete to assist in our data gathering. If you do not have time to complete this questionnaire or if you do not know enough about any of these topics, please let us know, as this is also important information. We encourage you to share this email and questionnaire with all stakeholders in your community with a vested interest in the Saco River Watershed's floodplain management. This may include community leaders, emergency managers, GIS specialists, and local planners. The completed questionnaires will assist FEMA in preparation for the Discovery meeting by better understanding the needs of each community.

To support a secure transfer of data, we recommend that you upload the questionnaire, along with supporting data, to FEMA's Floodmaps File eXchange (FFX) <https://www.floodmaps.fema.gov/ffx/>. Registering for a login account with user ID is free. We will follow up with you to arrange receipt of any other relevant data that you have, if indicated on the completed questionnaire. We request that all questionnaires are submitted by May 6, 2022.

If you choose to fill out a hard copy of this questionnaire, please send the completed questionnaire to:

Chris Markesich
FEMA Region I
99 High Street, 6th Floor
Boston, Massachusetts 02110
christopher.markesich@fema.dhs.gov

In April, we will email dates and times for the virtual Discovery meetings as well as a draft Discovery Report and Maps for your community to review. These will outline and display data that we have compiled to date for your community. Please note that these draft products will not reflect the information provided in the questionnaires.

At the Discovery meeting, you will have an additional opportunity to provide data and input on your community's flooding issues. Information collected from your community will be added to these draft Discovery products following the

Discovery meeting. Your feedback is important for identifying local needs for consideration. The information we collect will help FEMA **prioritize** and **better define** which areas within the watershed will receive restudy.

We are sending this email to those in your community who may be interested or involved with floodplain management. For purposes of future correspondence, please let us know if you should be removed or if there are additional, appropriate community officials and stakeholders who should be included.

If you have any questions regarding the Discovery process or the data requested, please contact the FEMA Project Manager, Christopher Markesich, by email at Christopher.Markesich@fema.dhs.gov or by phone at (617) 832-4712, and communities are welcome to copy me, rodriguezad@cdmsmith.com, on their submittals.

We look forward to working with your community through this Discovery process.

Thank you!

Diana Rodriguez, CFM
Compass Project Manager
CDM Smith, a member of Compass PTS JV
125 S. Wacker Dr, Suite 700, Chicago, IL
O: 312.780.7710

CONFIDENTIALITY NOTICE: The transmission of personally identifiable information (PII) such as an individual's social security number, date and place of birth, and other information that is linked or linkable to the individual is strictly prohibited. Such information should not be included, whether embedded or in an attachment, in any communication sent to this email address. The contents of this email message and any attachments are intended solely for the addressee(s) and may contain confidential and/or privileged information and may be legally protected from disclosure. If you are not the intended recipient of this message or such individual's agent, or if this message has been addressed to you in error, please alert the sender immediately by reply email and then delete this message and any attachments. If you are not the intended recipient, please be advised that any use, dissemination, copy

FEMA Watershed Discovery Questionnaire

This version of the questionnaire is for community government officials.

This questionnaire covers the following topics pertaining to the upcoming Federal Emergency Management Agency's (FEMA's) Risk Mapping, Assessment, and Planning (Risk MAP) study. Each section will likely take a few minutes to complete if you have detailed information.

- Desired Study Areas
- Existing Data Studies
- Funding
- Levees
- GIS Data

If you do not have time to complete this questionnaire or if you do not know enough about any of these topics, please let us know, as this is also important information.

If you choose to fill out a hardcopy of this form, please send the completed questionnaire to:

Chris Markesich
FEMA Region I
99 High Street, 6th Floor
Boston, Massachusetts 02110
christopher.markesich@fema.dhs.gov

You may also upload the questionnaire, along with supporting data, to FEMA's Floodmaps File eXchange (FFX) <https://www.floodmaps.fema.gov/ffx/>. Registering for a login account with user ID is free. We will follow up with you to arrange to obtain any further relevant data that you have if indicated on the completed questionnaire.

Thank you!

Your Information

Date: _____

Circle one: Mr. Ms.

Your name: _____

Your title: _____ __ Acting __ Interim
e.g., Mayor, Director

Your department: _____
e.g., Department of Public Works

Community: _____ County: _____
e.g., City of Boston

Your phone number: _____
Include area code, extension

Your email address: _____

Your mailing address: _____
Include building name and department name if applicable

City, State, ZIP

How would you prefer to be contacted in the future, especially for further data collection? Rank each option from **most preferred (1)** to **least preferred (3)**.

Letter _____ (1-3)

Email _____ (1-3)

Telephone _____ (1-3)

Desired Study Areas

If you have more than one desired study area, please copy/paste this page before filling it in and insert the completed duplicate pages.

Enter information for areas in your community with known flooding or mapping problems. Please include all possible information for each area. If there are no such areas in your community, please check the box below and leave the rest of the page blank.

No desired study areas

Not familiar with any issues with maps

>> Name of flooding source: _____
e.g., Bond Brook

Extents needing update: _____
e.g., "From State Street to Washington Avenue"

Approximate river miles: _____ miles

Level of study requested: Remove Special Flood Hazard Area (SFHA)
Check one
 Zone AE (floodway) Zone A
 Redelineation Zone AE (no floodway)
 Other: _____

Reason for update: *Check all that apply*
 Clustered Letters of Map Amendments (LOMAs) Transportation-related projects in floodplain
 100-year flooding outside mapped SFHA Other changes made in floodplain
 National Flood Insurance Program (NFIP) claims and/or repetitive losses outside mapped SFHA
 Area of rapid growth or recent development
 Other: _____

Existing Data Studies

Are you aware of any existing data studies by the community, developers, Department of Transportation (DOT), or others in the study area that could be used in a Flood Insurance Study update?

Yes No

If yes, please provide information, including brief details, dates, extents, and contact information so that the data can be obtained for Discovery.

Are there any recent hydrologic and hydraulic studies, land development, or infrastructure projects in the watershed that could affect flood risk?

Funding

Does the community have funding or data that can be leveraged to contribute to a new study?

Yes No I don't know

If yes, please provide details.

Levees

Are there levees in your community that provide protection from the 100-year flood on flooding sources in the study area?

Yes No I don't know

If yes, please provide, for each levee, the flooding source protected against, the general location of the levee, and the owner and point of contact for the levee.

If yes, do these levees meet FEMA 65.10 requirements?

Yes No I don't know

If they do meet the requirements, do you have the documentation to support recertification?

Yes No I don't know

GIS Data

Any extra geospatial data that your community can provide, especially building footprints and occupancy, essential facilities, and historic flooding information, may significantly improve the flood risk datasets that may be provided in a Risk MAP project.

Does your community have any of the following types of spatial data that are other than or better than the data available from the state GIS depot? Check one box for each row.

	Yes – better than state GIS	Yes – worse than or same as state GIS	No	I don't know
Topography – LiDAR				
Topography – Other				
Orthophotography				
Transportation				
Political boundaries				
Hydrography				
Land use				
Parcels				
Building footprints				
Building occupancy				
Essential facilities				
Dams, levees, hydraulic structures				
Historic flooding inundation				
Wetlands or environmentally sensitive areas				
Other				

If “Other” was selected as better than state GIS, please describe below.

For each dataset selected as better than state GIS above, please provide general information about the data, including ground date, accuracy/scale, and general coverage area.

If there are planned updates or acquisitions for any of the above datasets, please provide general information, including projected date, accuracy/scale, and general coverage area.

Add any other information that you would like us to know about GIS data in your community.

Compliance and Training

Compass contacted the Floodplain Administrator (FPA) in most watershed communities prior to sending this questionnaire. To make sure we have all the pertinent contact information accurately, please confirm the name, best mailing address, phone number, and email information as well as the department and title of the FPA.

Comments or Questions

Add any other comments or questions that you have about any aspect of Risk MAP projects, the Discovery process, or flood risk in general.

Do you expect that any other official in your community may have anything to add about the topics in this questionnaire?

No, I am the best source Yes, other(s) may know more I don't know

If yes, **please specify the official(s) below** (name, department, and title) who may be able to contribute more information. Please also feel free to share the link to the online questionnaire with them directly, if they have not already received it.

This concludes the survey. Thank you!

Good Afternoon,

This is a follow-up to my email sent on April 15, 2022. I am writing on behalf of the Federal Emergency Management Agency (FEMA) to invite you to the upcoming FEMA Risk Mapping, Assessment, and Planning (Risk MAP) virtual Discovery Meetings scheduled for the Saco River Watershed communities in New Hampshire and Maine (excluding York and Cumberland Counties). Compass is the contractor scoped to support FEMA in the execution of this Risk MAP Discovery process for your community.

The Discovery Meetings for this watershed will be held virtually using Microsoft Teams software platform. We have scheduled two meeting dates for communities to attend, shown below.

Tuesday, May 10, 2022
10:00 AM – 12:00 PM EDT

Wednesday, May 11, 2022
2:00 PM – 4:00 PM EDT

You are receiving an Outlook meeting request for both dates. The information covered in both of the Discovery Meetings will be the same, so please accept the one which is more convenient for you.

Please include your full name, community, and title when you sign in to the meeting. We will provide a PDF of the Discovery Meeting slides after the meeting. For those who cannot attend, we can provide a recording of the information discussed upon your request.

At the Discovery Meeting, we will review the flood risk data we have gathered. We will also discuss your community's flooding history, flood risk concerns, and mitigation opportunities. To support in meeting preparation, we will distribute draft Discovery products to your community prior to the meeting.

We look forward to working with your community through this Discovery process.

Thank you!

Diana Rodriguez, CFM
Compass Project Manager
CDM Smith, a member of Compass PTS JV
125 S. Wacker Dr, Suite 700, Chicago, IL
O: 312.780.7710

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Or call in (audio only)

[+1 857-327-8948,,875346465#](#) United States, Boston

[\(844\) 566-5330,,875346465#](#) United States (Toll-free)

Phone Conference ID: 875 346 465#

[Find a local number](#) | [Reset PIN](#)

[Learn More](#) | [Meeting options](#)

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Attachments:

FEMA Discovery Meeting for Saco River Watershed; FEMA Discovery Meeting for Saco River Watershed; Discovery_Data_Location_Links_Saco_River.xlsx

Good Afternoon,

This is a follow-up to my email sent on April 15, 2022. I am writing on behalf of the Federal Emergency Management Agency (FEMA) regarding the upcoming FEMA Risk Mapping, Assessment and Planning (Risk MAP) Discovery Meetings this week, for which you received an invite from me on April 20, 2022 (also attached). As noted in my prior email, the Discovery process commences at the beginning of a FEMA Risk MAP project and assists in identifying the scope of the future watershed study. Through the Discovery process, we will work with your community to collect data and information that will provide a more holistic picture of where flooding vulnerabilities exist, the current flood hazards within your watershed, and opportunities to facilitate mitigation planning to help your community take further actions to reduce flood risk across the watershed. Your community is located in Saco Watershed.

At the Discovery Meetings this week, we will review the flood risk data we have gathered. We will also discuss your community's flooding history, flood risk concerns, and mitigation opportunities.

We are sharing with you the draft Discovery report and maps for your review. These products outline and display data that we have compiled to date for your community. These products also share draft information related to flood risk and potential future flood study priorities. You can download these draft products from the FEMA's Floodmaps File eXchange (FFX) links in the attached table for your community.

Information collected from your community will be incorporated into the Discovery products following the Discovery meeting. Your feedback is important for identifying local needs for consideration. The information we collect will help FEMA **prioritize** and **better define** which areas within the watershed may receive restudy, depending on federal funding availability. Please consider providing any data to the FEMA Project Manager, Christopher Markesich via FEMA's FFX. Registering for a FEMA FFX <https://www.floodmaps.fema.gov/ffx/> login account with user ID is free.

We are sending this email to those in your community who may be interested or involved with floodplain management. For purposes of future correspondence, please let us know if you should be removed or if there are additional, appropriate community officials and stakeholders who should be included. We encourage you and/or any other relevant floodplain management staff to attend this important meeting. The partnership and exchange of data between FEMA and your community will be vital to our success in identifying flood risks and needs that may exist.

If you have any questions regarding the Discovery process, the scheduled Discovery Meetings (two options presenting the same information: May 10, 2022 from 10am-12pm EDT or Wednesday, May 11, 2022 from 2pm-4pm EDT, per attached invites), or the draft products provided, or if you would like to submit additional information related to flood risk in your community, please contact the FEMA Project Manager, Christopher Markesich by email at Christopher.Markesich@fema.dhs.gov or by phone at (617) 832-4712. I am also available to answer any questions by e-mail at rodriguezad@cdmsmith.com or by calling (312) 780-7710.

We look forward to meeting with you this week.

Thank you!

Diana Rodriguez, CFM
Compass Project Manager
CDM Smith, a member of Compass PTS JV
125 S. Wacker Dr, Suite 700, Chicago, IL
O: 312.780.7710

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Attachments:

Saco_River_Discovery_Meeting_Minutes_May_2022.pdf;
Saco_River_Discovery_Presentation_May_2022.pdf;
Discovery_Data_Location_Links_Saco_River.xlsx;
Watershed_Discovery_Questionnaire.docx

Good Afternoon,

This is a follow-up to the virtual Discovery meetings held on May 10, 2022, and May 11, 2022, for the Saco River Watershed. In the Discovery meetings, we reviewed the flood risk data we have gathered, your community's flooding history, flood risk concerns, and mitigation opportunities. We are redistributing the draft Discovery report and maps for your review. Please note that the Discovery report now includes Appendix F: Community Profiles. You can download these draft products from the links in the attached table for your community.

These draft Discovery products will not become regulatory products. The draft discovery products instead help to inform FEMA on the priority level for future flood restudy along stream reaches throughout your community. We are asking that you provide comments on these draft discovery products, along with any additional data or information related to your community's flood risk, no later than June 30, 2022. Information collected from your community will be incorporated into the final Discovery products, which will be distributed in fall of 2022. Please consider providing any data that may help to better understand the flood risk in your area and any desired streams to be newly studied or restudied to FEMA Project Manager, Christopher Markesich, by email at Christopher.Markesich@fema.dhs.gov or by phone at (617) 832-4712, or via FEMA's Floodmaps File eXchange (FFX): <https://www.floodmaps.fema.gov/ffx/>, and communities are welcome to copy CDM Smith on their submittals. Registering for a login account with user ID is free for FEMA's FFX.

Additionally, the Discovery Meeting presentation, notes and questionnaire are attached. For those who could not attend the virtual Discovery meetings, we can provide the recording upon your request. We are sending this email to those in your community who may be interested or involved with floodplain management. For the purposes of future correspondence, please let us know if you should be removed or if there are additional, appropriate community officials and stakeholders who should be included.

If you have any questions regarding the draft products provided, or if you would like to submit additional information related to flood risk in your community, please contact me by e-mail at rodriguezad@cdmsmith.com or by calling (312) 780-7710.

Thank you!

Diana Rodriguez, CFM
Compass Project Manager
CDM Smith, a member of Compass PTS JV
125 S. Wacker Dr, Suite 700, Chicago, IL
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Appendix B

Discovery Meeting Materials



Discovery Meeting Saco River Watershed, ME & NH

Tuesday May 10, 2022

10:00 AM – 12:00 PM EDT

Virtual Meeting

Wednesday May 11, 2022

2:00 PM – 4:00 PM EDT

Virtual Meeting



FEMA

Meeting Agenda

- ▶ **Welcome and Introductions**
 - Risk MAP Project Team
 - City, County, and State partners and officials
 - Other Federal Agencies partner representatives
 - Associations
 - Others

- ▶ **Brief Overview of Risk MAP & Discovery**
- ▶ **Watershed Snapshot and Prioritization**
- ▶ **Looking Forward – Engineering Analysis**
- ▶ **Regulatory Products**
- ▶ **Interactive Discussions**



Overview of FEMA Risk Mapping, Assessment, and Planning (Risk MAP) & Discovery

What is Risk MAP?



- Five-year effort to modernize maps
- Result: digital flood data and digital maps for 92% of population
- Improved flood data quality
- Limited up-front coordination
- Scoping not mandatory

RiskMAP

Increasing Resilience Together

- Collaborative approach
- Goals: quality data, public awareness, action that reduces risk
- Watershed-oriented
- Focus on up-front coordination
- Discovery is mandatory



What is the value of Risk MAP?

Through collaboration with State, Local, and Tribal entities, Risk Mapping, Assessment, and Planning (Risk MAP) will deliver **quality data** that increases **public awareness** and leads to **action that reduces risk** to life and property



FEMA

Discovery

Discovery is the process of data mining, collection, and analysis with the goal of conducting a comprehensive watershed study and initiating communication and mitigation planning discussions with the communities in the watershed

When

- After an area/watershed has been prioritized
- Before a Risk MAP project scope is finalized

Why

- Increases visibility of flood risk information,
- Increases education and involvement of communities

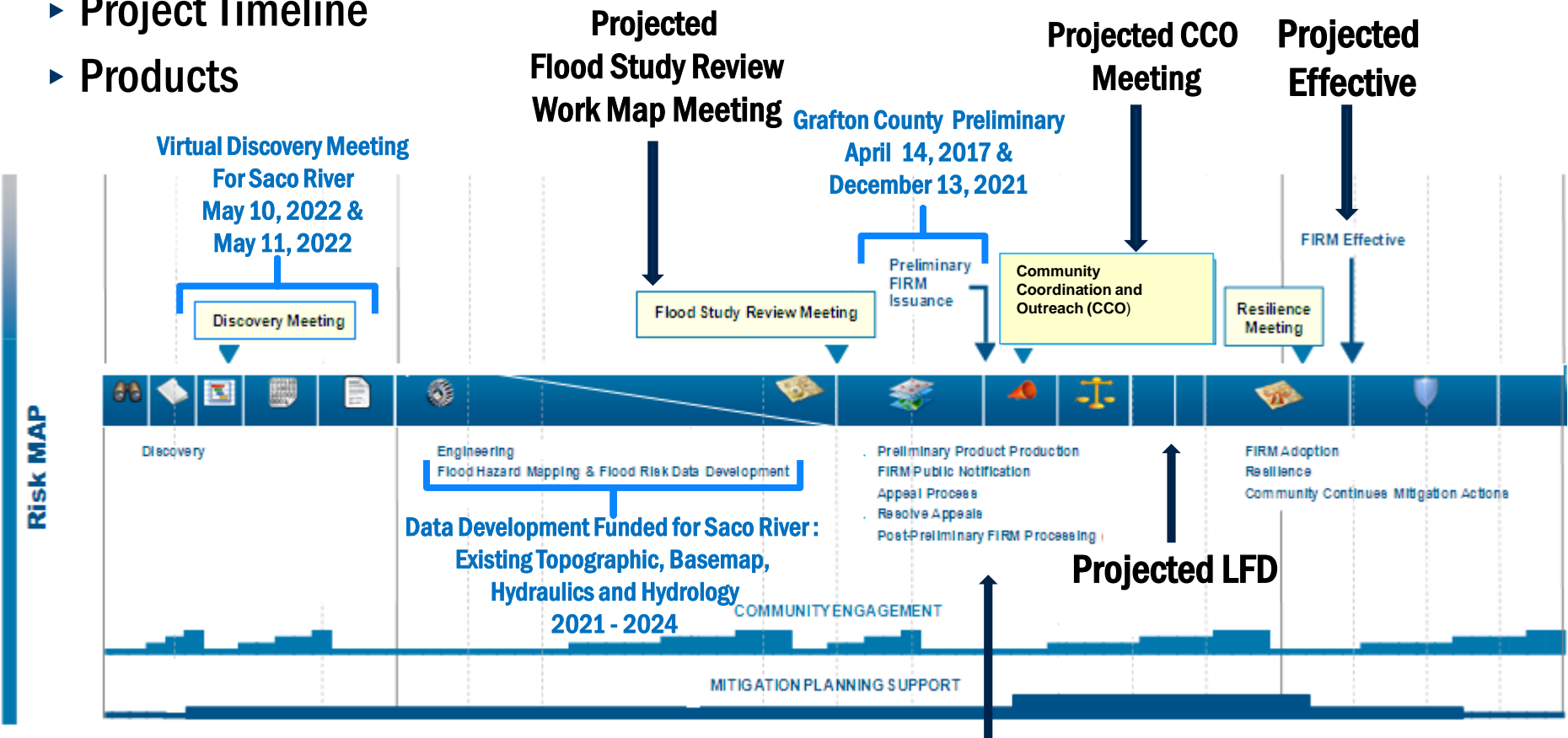
Potential Next Steps

- Flood studies
- Flood risk assessments
- Mitigation planning technical assistance projects



What are the Risk MAP activities, timeline, and products?

- ▶ Activities
- ▶ Project Timeline
- ▶ Products

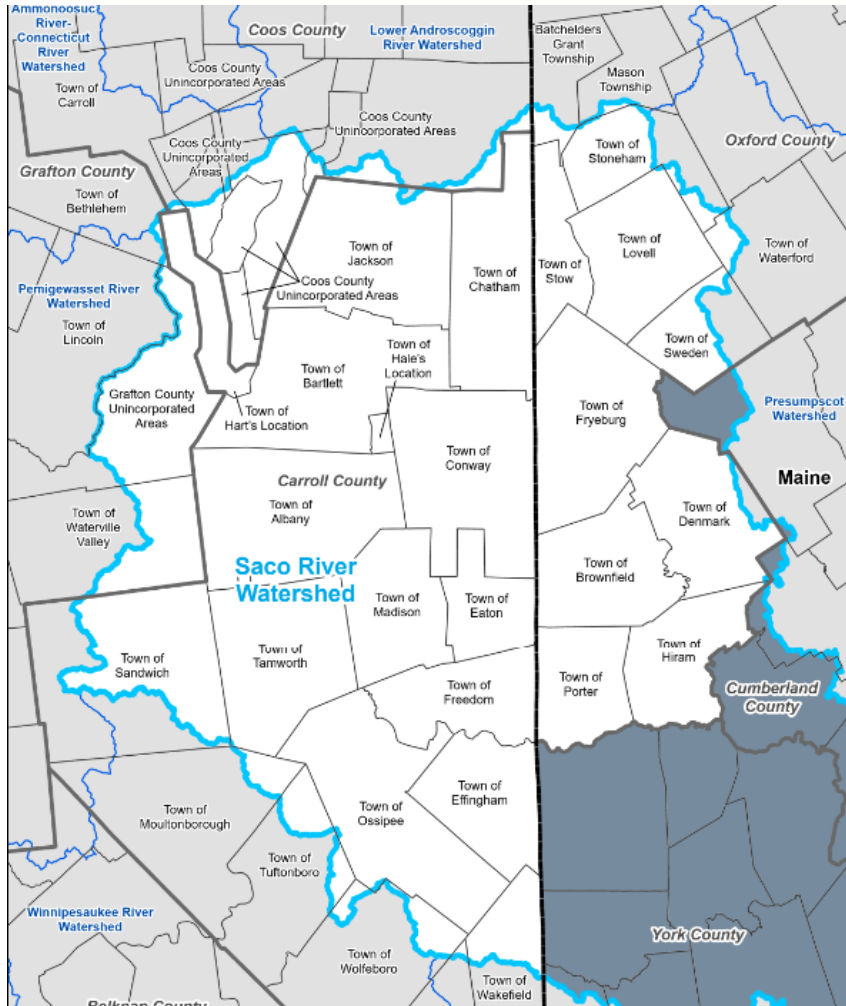


Watershed Snapshot



FEMA

Saco River Watershed Overview



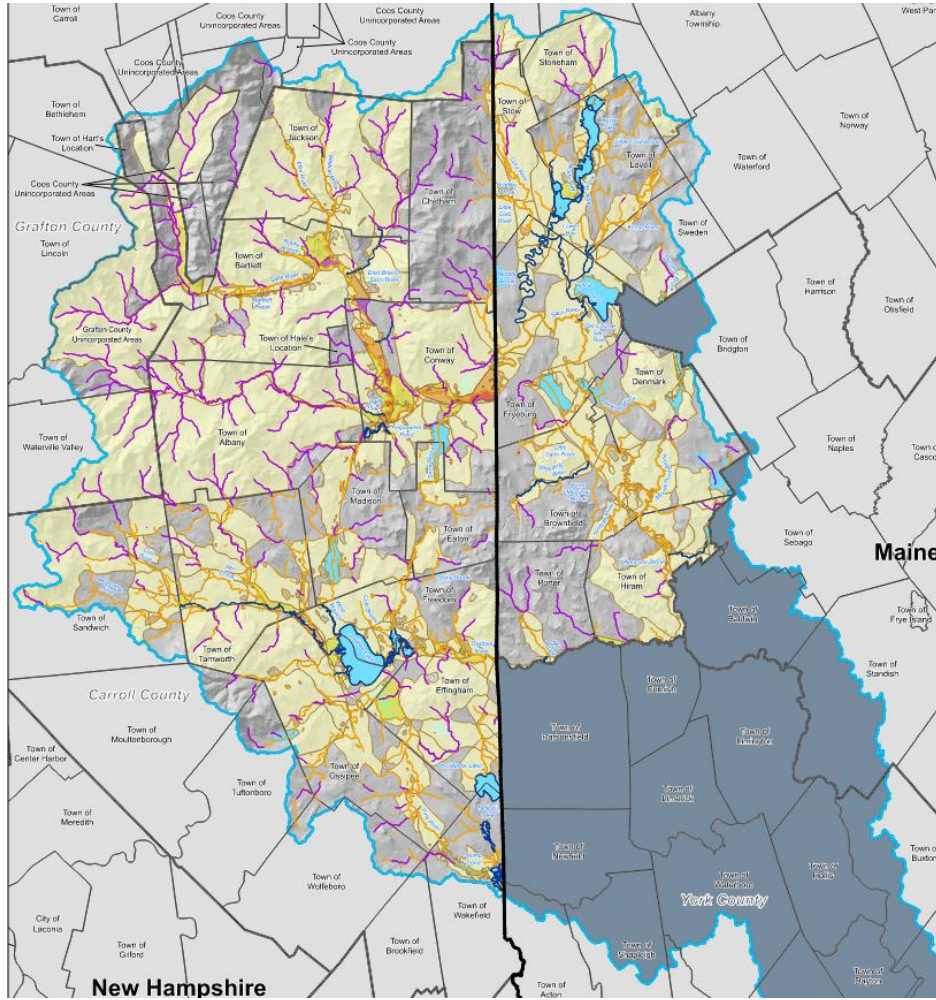
The Saco River Watershed contains or touches:

- 2 states – Maine & New Hampshire
- Excludes York and Cumberland Counties
- 4 counties – Carroll, Coos, Grafton, Oxford Counties
- 37 communities
- 1,045.8 total stream miles
- Approximately 44,010 residents



FEMA

Saco River Watershed CNMS Overview



Total Stream Miles: 1,045.8 Miles

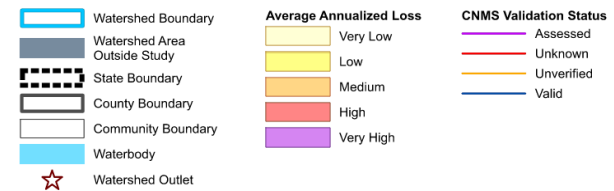
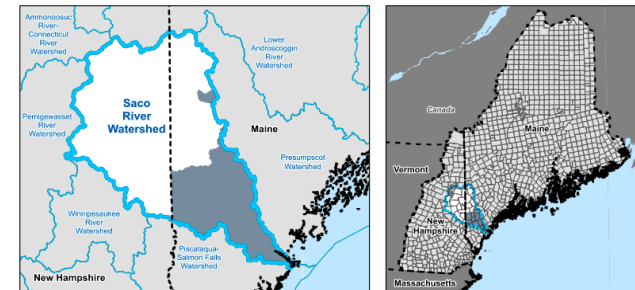
Assessed: 432.4 Miles

Unverified: 490.7 Miles

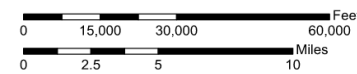
Unknown: 0.3 Miles

Valid: 122.4 Miles

WATERSHED LOCATORS



Map Projection:
Name: NAD 1983 UTM Zone 19N
*Distance calculations compiled using
North America Albers Equal Area Conic
1 Inch = 14,000 Feet 1:168,000



Priority Stream Reaches

One goal of Discovery: Coordinate with all watershed stakeholders to select highest-priority reaches for redelineation and/or detailed study

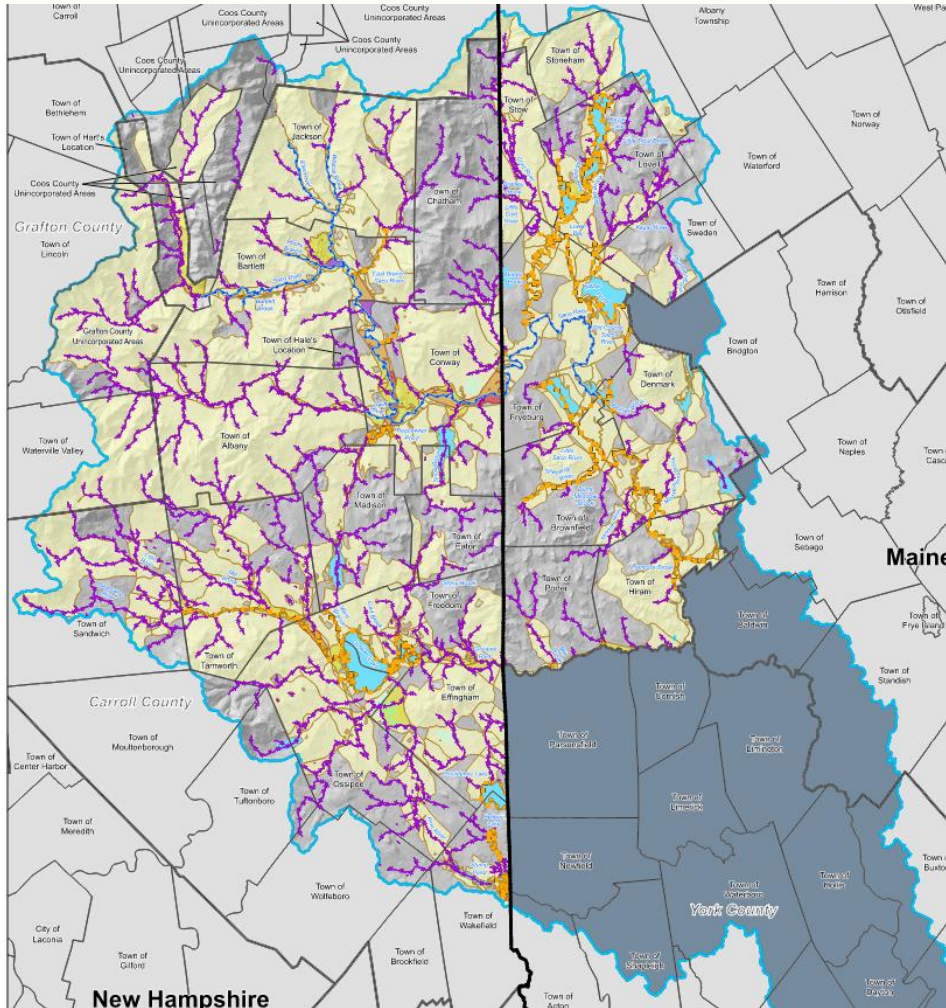
Priority reaches will be selected based on analysis of available data

- Coordinated Needs Management Strategy (CNMS)
- Letters of Map Change (LOMCs)
- Average Annualized Loss (AAL)
- Risk Class Data - Population density and anticipated growth
- Study age
- Dams / Levees

Last source required to finalize priority list - STAKEHOLDER INPUT NEEDED! Please tell us your mapping needs.

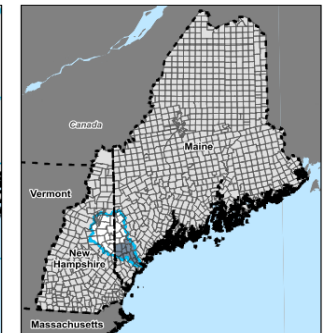
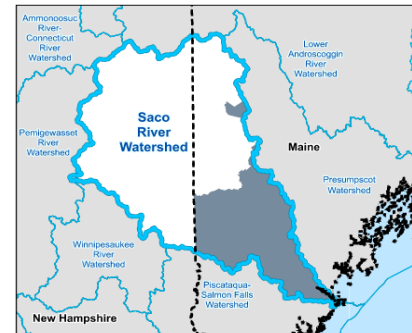
- Interactive discussion at the end of the presentation
- Provide any comments or data by June 30, 2022

Saco River Watershed Prioritization Overview



Total Stream Miles: 1,045.8 Miles

High Priority Detailed Study: 68.3 Miles
Medium Priority Detailed Study: 154.2 Miles
Low Priority Approximate Study: 823.3 Miles



Watershed Boundary	Average Annualized Loss	Stream Prioritization
Watershed Area Outside Study	Very Low	High Priority Detailed Study
State Boundary	Low	Medium Priority Detailed Study
County Boundary	Medium	Low Priority Approximate Study
Community Boundary	High	
Waterbody	Very High	
Watershed Outlet		

Map Projection: NAD 1983 UTM Zone 19N
 *Distance calculations completed using North America Albers Equal Area Conic

1 inch = 14,000 Feet 1:168,000



Looking Forward – Engineering Analysis

The Level of Study Based on Prioritization within the Watershed

- ▶ **Zone A: Approximate Study/Base Level Engineering**
- ▶ **Zone AE: Redelineation**
- ▶ **Zone AE: Detailed Study**

Level of Study

ZONE A: Approximate Study

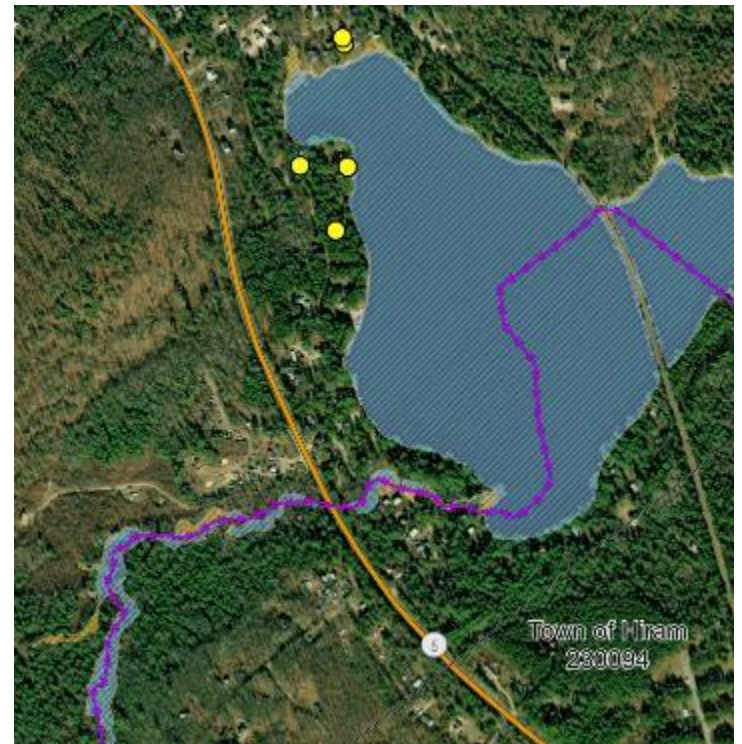
- Hydrologic and Hydraulic modeling analysis based on new terrain data.
- Streamgauge data or regression equations for hydrology and HEC-RAS modeling used for hydraulics
- No field survey
- Provides an approximate delineation for the 1% annual exceedance probability (100-yr flood) event.
- No BFEs are provided
- Appeal Eligible

Base Level Engineering (BLE) Results

BLE Results
Compared to Effective:



Effective



BLE



FEMA

Level of Study

ZONE AE: Redelineation

- No new engineering analysis
- Acceptable when effective Detailed Study Base Flood Elevations (BFEs) are considered accurate
- Effective model data is transferred to new LiDAR terrain data to create new floodplain delineations
- Digital Flood Insurance Rate Map (DFIRM) / Flood Insurance Study (FIS) Data: Same as Detailed Study
- Appeal Eligible

Level of Study

ZONE AE: Detailed Study

- Most detailed and most expensive study
- Structures and cross-sections are field surveyed
- Streamgage data regression equations or rainfall-runoff for hydrology
- HEC-RAS modeling used for hydraulics
- Floodway Data Table and Flood Profiles included in Flood Insurance Study (FIS)
- Appeal Eligible
- Provides:
 - BFEs
 - Cross Sections
 - Floodway
 - 1% annual exceedance probability (100-yr flood) floodplain
 - 0.2% annual exceedance probability (500-yr flood) floodplain



FEMA

Best Available Data: Maine

- ▶ **LiDAR (Light Detection And Ranging) elevation data:**
 - Maine GIS titled Maine Elevation DEM 2 Meter 16 September, 2018 collected from 2006 to 2013.
- ▶ **U.S. Geological Survey (USGS) regional regression equations for estimating peakflows for selected annual exceedance probabilities:**
 - Peak Flow Regression Equations for Small, Ungaged Streams in Maine: Comparing Map-Based to Field-Based Variables, USGS, SIR 2015-5049
- ▶ **Orthophotography**
 - Orthoimagery Regional (Multi Year Imagery Layers Available)
- ▶ **Natural Resources Conservation Service (NRCS) Dam Rehabilitation Program**
- ▶ **US Army Core of Engineers (USACE) National Inventory of Dams**
- ▶ **USGS Streamgauge data**
- ▶ **Existing Digital Flood Insurance Rate Maps (DFIRMs) for counties in Maine:**
 - Oxford effective on July 7, 2009

Best Available Data: New Hampshire

- ▶ **LiDAR (Light Detection And Ranging) elevation data:**
 - New Hampshire Granit LiDAR , CT River Watershed (2015), WMNF (2014), Umbagog (2017)
- ▶ **U.S. Geological Survey (USGS) regional regression equations for estimating peakflows for selected annual exceedance probabilities:**
 - Estimation of Flood Discharges at Selected Recurrence Intervals for Streams in New Hampshire, USGS, SIR 2008-5206
- ▶ **Orthophotography**
 - 2015 1 - FT Color Aerial Photos
- ▶ **Natural Resources Conservation Service (NRCS) Dam Rehabilitation Program**
- ▶ **US Army Core of Engineers (USACE) National Inventory of Dams**
- ▶ **USGS Streamgage data**
- ▶ **Existing Digital Flood Insurance Rate Maps (DFIRMs) for counties in New Hampshire:**
 - Carroll effective on March 19, 2013
 - Coos effective on February 20, 2013
 - Grafton effective on April 20, 2000 and February 20, 2008
 - Grafton preliminary on April 14, 2017 and December 13, 2021

FEMA Programs and Regulatory Products



FEMA

FEMA Programs

- **Flood Mitigation Assistance** – annual funding to reduce risk to NFIP-insured structures
- **Hazard Mitigation Grant Program** – declared disaster funding for long-term hazard mitigation measures
- **Building Resilient Infrastructure and Communities (BRIC) Program** – an annual program for Hazard Mitigation projects
- **Community Rating System** – proactive communities receive insurance discounts for residents
- **National Dam Safety Program** – dam safety standards

Saco River Watershed Communities Hazard Mitigation Plan Status

Maintaining Your Hazard Mitigation Plan

COUNTY	COMMUNITY NAME	Status	Expiration
Oxford	Batchelders Grant Township	Approved	7/23/2023
Oxford	Town of Brownfield	Approved	7/23/2023
Oxford	Town of Denmark	*Approved Pending Adoption	
Oxford	Town of Fryeburg	Approved	7/23/2023
Oxford	Town of Hiram	*Approved Pending Adoption	
Oxford	Town of Lovell	Approved	7/23/2023
Oxford	Mason Township	Approved	7/23/2023
Oxford	Town of Porter	*Approved Pending Adoption	
Oxford	Town of Stoneham	Approved	7/23/2023
Oxford	Town of Stow	*Approved Pending Adoption	
Oxford	Town of Sweden	Approved	7/23/2023
Oxford	Town of Waterford	Approved	7/23/2023
Carroll	Town of Albany	Approved	8/24/2022
Carroll	Town of Bartlett	Approved	7/24/2023
Carroll	Town of Brookfield	Expired	9/9/2019
Carroll	Town of Chatham	No Plan	
Carroll	Town of Conway	Approved	9/27/2025
Carroll	Town of Eaton	Expired	11/30/2021
Carroll	Town of Effingham	Approved	8/14/2024

*Previous plan expired no date populated, new plan approved pending adoption

COUNTY	COMMUNITY NAME	Status	Expiration
Carroll	Town of Freedom	Expired	8/17/2020
Carroll	Town of Hale's Location	No Plan	
Carroll	Town of Hart's Location	Approved	7/24/2023
Carroll	Town of Jackson	Approved	12/10/2024
Carroll	Town of Madison	Expired	10/8/2020
Carroll	Town of Moultonborough	Approved	8/18/2024
Carroll	Town of Ossipee	Approved	3/22/2027
Carroll	Town of Sandwich	Approved	11/24/2024
Carroll	Town of Tamworth	Approved	2/19/2024
Carroll	Town of Tuftonboro	Expired	8/12/2020
Carroll	Town of Wakefield	Approved	9/13/2020
Carroll	Town of Wolfeboro	Approved	8/29/2024
Coos	Town of Carroll	Expired	1/14/2020
Coos	Coos County	State Plan	
Grafton	Town of Bethlehem	Approved	7/26/2026
Grafton	Town of Lincoln	Expired	8/25/2021
Grafton	Town of Waterville Valley	Approved	3/18/2026
Grafton	Grafton County	State Plan	



FEMA

General Points of Contact

- ▶ For general FEMA mapping and Letter of Map Change (LOMC) questions contact FEMA's Mapping and Insurance eXchange (FMIX): 1-877-FEMA MAP (1-877-336-2627) or email a Map Specialist: FEMA-FMIX@fema.dhs.gov
- ▶ Map Service Center (MSC): where you can view preliminary & effective maps online for free <http://www.msc.fema.gov/>
- ▶ To learn more about the National Flood Insurance Program (NFIP): <https://www.floodsmart.gov/> or call 1-888-379-9531

Points of Contact

Saco River Watershed

▶ FEMA Contact

- Kerry Bogdan
Chief, Risk Analysis Branch, FEMA Region 1
Kerry.Bogdan@fema.dhs.gov
(617) 956-7576
- Chris Markesich
Senior Program Specialist, FEMA Region 1
Christopher.Markesich@fema.dhs.gov
(617) 832-4712

▶ Compass Contacts

- Brian Caufield, Task Order Manager
caufieldba@cdmsmith.com
(617) 452-6658
- Diana Rodriguez, Project Manager
rodriguezad@cdmsmith.com
(312) 780-7710

▶ FEMA Regional Service Center

- Alex Sirotek, RSC Lead
alexander.sirotek@woodplc.com
(617) 515-4713

▶ NH State Contacts

- Jennifer Gilbert
jennifer.gilbert@nh.gov
(603) 271-1762

▶ ME State Contacts

- Sue Baker
sue.baker@maine.gov
(207) 287-8063



FEMA

Digital Flood Insurance Rate Maps / Flood Insurance Study

FIS Reports and DFIRM Maps will continue to fulfill regulatory requirements and support the NFIP

- Database driven FIS
- Remove any unnecessary boiler plate text and update narrative elements to table format in the FIS
- Align existing tables in FIS report to DFIRM database
- Updated symbology on the FIRM to increase readability and slimmed down the Notes to Users on the FIRM

FLOOD INSURANCE STUDY FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 4



**GRAFTON COUNTY,
NEW HAMPSHIRE
(ALL JURISDICTIONS)**

COMMUNITY NAME	NUMBER	COMMUNITY NAME	NUMBER
ALEXANDRIA, TOWN OF	330041	LANDAFF, TOWN OF	330060
ASHLAND, TOWN OF	330042	LEBANON, CITY OF	330061
BATH, TOWN OF	330043	LINCOLN, TOWN OF	330062
BENTON, TOWN OF	330044	LISBON, TOWN OF	330063
BETHLEHEM, TOWN OF	330045	LITTLETON, TOWN OF	330064
BRIDGEWATER, TOWN OF	330046	LYMAN, TOWN OF	330066
BRISTOL, TOWN OF	330047	LYME, TOWN OF	330067
CAMPTON, TOWN OF	330048	MONROE, TOWN OF	330068
CANAAN, TOWN OF	330049	ORANGE, TOWN OF	330069
DORCHESTER, TOWN OF	330050	OXFORD, TOWN OF	330070
EASTON, TOWN OF	330051	PIERMONT, TOWN OF	330071
ELLSWORTH, TOWN OF	330205	PLYMOUTH, TOWN OF	330072
ENFIELD, TOWN OF	330052	RUMNEY, TOWN OF	330073
FRANCONIA, TOWN OF	330053	SUGAR HILL, TOWN OF	330074
GRAFTON, TOWN OF	330054	THORNTON, TOWN OF	330075
GROTON, TOWN OF	330055	WARREN, TOWN OF	330168
HANOVER, TOWN OF	330056	WATERVILLE VALLEY, TOWN OF	330077
HAVERHILL, TOWN OF	330057	WENTWORTH, TOWN OF	330078
HEBRON, TOWN OF	330058	WOODSTOCK, TOWN OF	330079
HOLDERNESS, TOWN OF	330059		

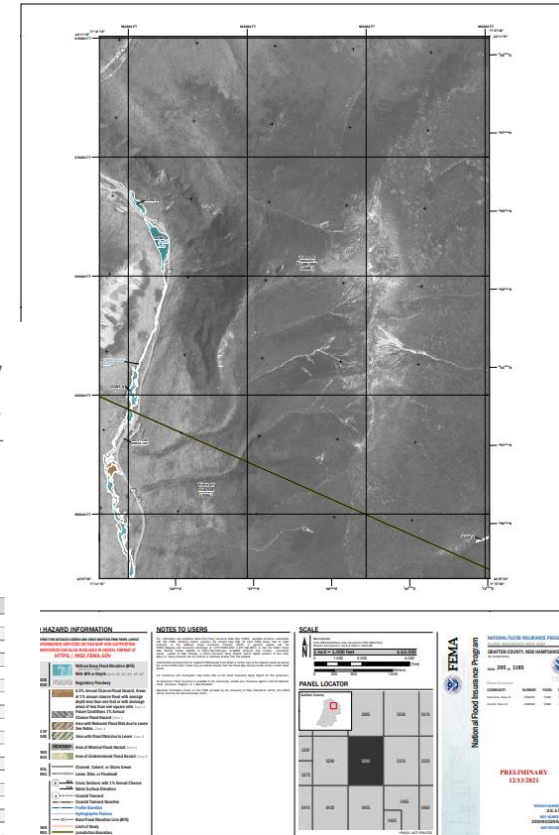
REVISED: **PRELIMINARY**
TBD **12/13/2021**

FLOOD INSURANCE STUDY NUMBER
33009CV001B

Version Number 2.6.3.6



FEMA



FEMA

Discovery Data Sets

- ▶ **Priority reaches will be selected based on analysis of seven sources**
 - Coordinated Needs Management Strategy (CNMS)
 - Letters of Map Change (LOMCs)
 - Average Annualized Loss (AAL)
 - Risk Class Data - Population density and anticipated growth
 - Study age
 - Dams / Levees
 - Stakeholder input
- ▶ **See Discovery Report and Discovery Map for details**
 - All available in digital format have been sent, please let us know if you need a new link in the chat box
- ▶ **Last source required to finalize priority list - STAKEHOLDER INPUT NEEDED! Please tell us your mapping needs.**
 - Interactive Discussion today
 - Provide any comments or data by June 30, 2022

Stakeholder Input Needed!

Consider these areas...

Claims & repetitive loss areas



Land use changes



Levees



stacey.peak-media.co.uk

Dams



Stream flow pinch points



Other known but unmapped areas of flooding



FEMA

Data Request

- Disaster high water marks (HWMs)
- Existing / new dams or levees
- New construction of culverts and bridges
- Land use changes (i.e., residential development)
- Planimetric data (i.e., building footprints)
- Information obtained from research by other Federal agencies, non-profit organizations, universities, etc.
- Information from Dam Emergency Action Plans
- Much more – anything affecting the floodplain

Next Steps

- ▶ Gather information and any comments on the draft products.
- ▶ Please submit the questionnaire and any data and comments by June 30, 2022.

Chris Markesich

FEMA Region 1

99 High Street, 6th Floor

Boston, MA 02110

christopher.markesich@fema.dhs.gov

- ▶ Following the Discovery meeting, the Discovery meeting slides will be provided.
- ▶ The recording of the Discovery meeting can be provided on request.
- ▶ Final Discovery Maps and Report will be issued to communities by fall of 2022.

Interactive Discussion and Q&A

▶ Stakeholder Input! Please tell us your mapping needs

- Name of flooding source
- Extents needing update
- River miles on this reach needing update
- Level of study requested
- Reason for needed update



- ▶ This information will help FEMA to prioritize which areas within the watershed will receive restudy

QUESTIONS??



Region I: Saco River Watershed Discovery Meeting Attendees

Name	Community/Agency	Meeting Attended
Karl Anderson	FEMA	May 10, 2022 Virtual Discovery Meeting
Colleen Bailey	FEMA	May 10, 2022 Virtual Discovery Meeting
Bob MacLean	FEMA	May 10, 2022 Virtual Discovery Meeting
Michael Logar	FEMA	May 10, 2022 Virtual Discovery Meeting
Sue Baker	Maine Floodplain Management	
	Program	May 10, 2022 Virtual Discovery Meeting
Janet Parker	Maine Floodplain Management	
	Program	May 10, 2022 Virtual Discovery Meeting
Anne Fuchs	Maine Emergency Management	
	Agency	May 10, 2022 Virtual Discovery Meeting
Jennifer Gilbert	New Hampshire BEA Office of Planning	
	and Development	May 10, 2022 Virtual Discovery Meeting
Brian Eaton	New Hampshire Department of Safety	
		May 10, 2022 Virtual Discovery Meeting
Tavis Austin	Town of Wolfeboro	
		May 10, 2022 Virtual Discovery Meeting
Brian Caufield	Compass	
		May 10, 2022 Virtual Discovery Meeting
Diana Rodriguez	Compass	
		May 10, 2022 Virtual Discovery Meeting
Parker Brookfield	Compass	
		May 10, 2022 Virtual Discovery Meeting
Kathryn Swanson	Compass	
		May 10, 2022 Virtual Discovery Meeting
Rosemary Bolich	Compass	
		May 10, 2022 Virtual Discovery Meeting
Kimberly Profitko	Compass	
		May 10, 2022 Virtual Discovery Meeting
Sonia Almaraz	Compass	
		May 10, 2022 Virtual Discovery Meeting

Name	Community/Agency	Meeting Attended
Kerry Bogdan	FEMA	May 11, 2022 Virtual Discovery Meeting
Karl Anderson	FEMA	May 11, 2022 Virtual Discovery Meeting
Colleen Bailey	FEMA	May 11, 2022 Virtual Discovery Meeting
Bob MacLean	FEMA	May 11, 2022 Virtual Discovery Meeting
Michael Logar	FEMA	May 11, 2022 Virtual Discovery Meeting
Chris Markesich	FEMA	May 11, 2022 Virtual Discovery Meeting
Sue Baker	Maine Floodplain Management Program	May 11, 2022 Virtual Discovery Meeting
Janet Parker	Maine Floodplain Management Program	May 11, 2022 Virtual Discovery Meeting
Tim Carr	Land Use Planning Commission (LUPC)	May 11, 2022 Virtual Discovery Meeting
Kathryn Nelson	New Hampshire Office of Planning & Development	May 11, 2022 Virtual Discovery Meeting
Alex Sirotek	Regional Service Center	May 11, 2022 Virtual Discovery Meeting
Christopher Walton	Town of Fryeburg, ME	May 11, 2022 Virtual Discovery Meeting
Mark Dindorf	Hart's Location; Upper Saco Valley Land Trust	May 11, 2022 Virtual Discovery Meeting
Jeff Sires	HEB Engineering	May 11, 2022 Virtual Discovery Meeting
Rich Brereton	FB Environmental Associates	May 11, 2022 Virtual Discovery Meeting
Brian Caufield	Compass	May 11, 2022 Virtual Discovery Meeting
Parker Brookfield	Compass	May 11, 2022 Virtual Discovery Meeting
Kathryn Swanson	Compass	May 11, 2022 Virtual Discovery Meeting
Rosemary Bolich	Compass	May 11, 2022 Virtual Discovery Meeting
Kimberly Profitko	Compass	May 11, 2022 Virtual Discovery Meeting
Sonia Almaraz	Compass	May 11, 2022 Virtual Discovery Meeting

Appendix C

Meeting Synopses



Virtual Meeting Synopsis: Saco River Watershed Discovery Meeting

Virtual Meeting Details

Date	May 10, 2022	Time	
Watershed	Saco River	Location	Virtual
Total Community Sign-Ins	1	Communities Represented	Town of Wolfeboro
Format	<ul style="list-style-type: none"> • Introductions • Presentation • Interactive Session 	Materials Shared	Agenda, Draft Discovery Prioritization & CNMS Overview maps, Draft Discovery community maps, Draft Discovery Report, Questionnaire Form, Community Profiles, Community Mitigation plan status, and Level of Study Information.

Community Attendance

Community Attendance and Breakdown		
	Total Signed-In Attendees	Percentage
New Hampshire	1	6%
Town of Wolfeboro	1	
Other	16	94%
Maine Floodplain Management Program	3	
New Hampshire BEA Office of Planning and Development	1	
New Hampshire Department of Safety	1	
FEMA R1	4	
Compass	7	
Total	17	100%



Virtual Meeting Synopsis: Saco River Watershed Discovery Meeting

Virtual Meeting Details

Date	May 11, 2022	Time	
Watershed	Saco River	Location	Virtual
Total Community Sign-Ins	2	Communities Represented	Town of Fryeburg, Hart’s Location
Format	<ul style="list-style-type: none"> • Introductions • Presentation • Interactive Session 	Materials Shared	Agenda, Draft Discovery Prioritization & CNMS Overview maps, Draft Discovery community maps, Draft Discovery Report, Questionnaire Form, Community Profiles, Community Mitigation plan status, and Level of Study Information.

Community Attendance

Community Attendance and Breakdown		
	Total Signed-In Attendees	Percentage
Maine	1	5 %
Town of Fryeburg	1	
New Hampshire	1	5 %
Town of Hart’s Location	1	
Other	19	90 %
Maine Floodplain Management Program	2	
Land Use Planning Commission (LUPC)	1	
New Hampshire Office of Planning & Development	1	
Regional Service Center	1	
HEB Engineering	1	
FB Environmental Associates	1	
FEMA R1	6	
Compass	6	
Total	21	100%

Date: May 10, 2022 and May 11, 2022

Distribution of Meeting Notes: FEMA FFX

Entered in Chat Box: Welcome to the FEMA Discovery Meeting for Saco River Watershed. Please include your full name, community, and title when you sign in to the meeting. This meeting will be recorded. Please let us know if you would like a copy of the meeting presentation and data by putting it in the chat box.

[May 10, 2022 – Saco River Watershed – Virtual Meeting](#)

Attendees:

Name	Community/Agency
Karl Anderson	FEMA
Colleen Bailey	FEMA
Bob MacLean	FEMA
Michael Logar	FEMA
Sue Baker	Maine Floodplain Management Program
Janet Parker	Maine Floodplain Management Program
Anne Fuchs	Maine Emergency Management Agency
Jennifer Gilbert	New Hampshire BEA Office of Planning and Development
Brian Eaton	New Hampshire Department of Safety
Tavis Austin	Town of Wolfboro
Brian Caufield	Compass
Diana Rodriguez	Compass
Parker Brookfield	Compass
Kathryn Swanson	Compass
Rosemary Bolich	Compass
Kimberly Profitko	Compass
Sonia Almaraz	Compass

The first Saco River Watershed Discovery Meeting was held virtually on May 10, 2022 from 10 AM to 12 PM EDT. Compass staff delivered the PowerPoint presentation in a virtual recorded session.

During the presentation the following questions were asked prior to the virtual Interactive session:

- 1) Sue Baker: This is the first project that we have had that is multi-state. Will there be one Flood Insurance Study (FIS) published, or will there be separate ones for each state?

- i. For the Discovery projects, the report and maps are produced at the watershed basis, so just one for both states. Regulatory projects, which would include the FIS report and Flood Insurance Rate Maps, are published on a countywide basis.
- 2) Jennifer Gilbert: Our agency has a YouTube page-- can we post the recording of this meeting there?
 - i. Diana mentioned that Compass can distribute to any communities that request a download. While on the call, Region 1 confirmed that the video can be posted on the state's YouTube channel.

Interactive discussions were held with the following communities:

- 1) Compass staff demonstrated how to download the draft maps and walk through the dynamic PDF options.
- 2) Jennifer Gilbert: General comment about Hart's Location – a portion of it is within the watershed. Jennifer will be working with the community to ask them to provide information on a study that they have funded that could be leveraged for this Discovery project.
- 3) Brian Eaton: Would Saco River bank stabilization/erosion control be something you'd like to be aware of?
 - a. Diana responded that Compass would indeed like information on that type of project. Brian can let Compass know which reach has stabilization measures underway. Identifying details such as streets, intersections, and directions are helpful.
- 4) No panels were reviewed during the Interactive discussion.

Requested Discovery Data:

- 1) No requests received during the Discovery meeting.

Requested Video Recording of Discovery Meeting:

- 1) NH state requested the recording to post both Discovery meetings to their YouTube channel.

Add contacts:

- 1) No requests received during the Discovery meeting.

May 11, 2022 – Saco River Watershed – Virtual Meeting

Attendees:

Name	Community/Agency
Kerry Bogdan	FEMA
Karl Anderson	FEMA
Colleen Bailey	FEMA
Bob MacLean	FEMA
Michael Logar	FEMA
Chris Markesich	FEMA
Sue Baker	Maine Floodplain Management Program
Janet Parker	Maine Floodplain Management Program
Tim Carr	Land Use Planning Commission (LUPC)
Kathryn Nelson	New Hampshire Office of Planning & Development
Alex Sirotek	Regional Service Center
Christopher Walton	Town of Fryeburg, ME
Mark Dindorf	Hart's Location; Upper Saco Valley Land Trust
Jeff Sires	HEB Engineering
Rich Brereton	FB Environmental Associates
Brian Caufield	Compass
Parker Brookfield	Compass
Kathryn Swanson	Compass
Rosemary Bolich	Compass
Kimberly Profitko	Compass
Sonia Almaraz	Compass

The second Saco Watershed Discovery Meeting was held virtually on May 11, 2022 from 2 PM to 4 PM EDT. Compass staff delivered the PowerPoint presentation in a virtual recorded session.

During the presentation the following questions were asked prior to the virtual Interactive session:

- 1) Mark Dinsdorf: My community, Hart's Location, has been independently doing a mapping exercise. Half of the town was studied last year, and the other half will be done this year. What is the best way to get our data to you? We've done the best we can to meet FEMA standards.
 - a. Katie responded that the questionnaire is the best way to share information.

Interactive discussions were held with the following communities:

- 1) Hart's Location: Mark Dindorf- Panel 0065D – **Comment #1**
 - a. There are 2 undersized culverts that were washed out in Hurricane Irene and another 2017 storm. They are along Rt. 302, just beyond the entrance to Crawford Notch State Park Dry River campground. There is a high river channel that comes off of the Dry River. Where Saco crosses under 302 is within ½ mile of the culvert. The culverts are not big enough and led to the roadway collapsing after those 2 storm events.
- 2) Hart's Location: Mark Dindorf – panel 0065D – **Comment #2**
 - a. There is a tributary to the Saco, Stony Brook, near the label of Camp Onion Road on the panel. High water in that channel breached a USACE berm. In high water events, that overflow channel is flowing perpendicularly to 302.
 - b. Karl Anderson asked if this stream is being factored into the Hart's Location study.
 - i. Rich Brereton: Yes. The extent of the stream in the older FIS is 500 feet over the Bartlett- Hart's Location boundary line into Hart's. The first phase of the town's study extends northward just north of the confluence of the Dry & the Saco. Phase 2 is just getting underway and will consist of the remainder of the Saco in Hart's Location. The Dry River confluence is shown on this panel. It's a complicated, braided channel that merges with the Saco.
- 3) Hart's Location: Rich Brereton: mentioned that the final results of the Hart's Location phase 1 study are in a report that was written last fall, and he can share it with Compass.

Requested Discovery Data:

- 1) No requests received during the Discovery meeting.

Requested Video Recording of Discovery Meeting:

- 1) No requests received during the Discovery meeting.

Add contacts:

- 1) No requests received during the Discovery meeting.

Appendix D

Community Feedback

Saco River Watershed Community Feedback

Map Comment Number	Community	State	Category	Flooding Source	Discovery Map Panel Number	Comments
1	Town of Effingham	NH	Request for Study or Comment About Flood Mapping	Ossipee River	33003C0540D, 33003C0515D, 33003C0520D, 23017C1536D	Desired Study Area included on Questionnaire: Ossipee Lake, Ossipee River for 6 miles
2	Town of Effingham	NH	Comment about structure	Ossipee River	33003C0515D	Existing Data Studies included on Questionnaire: There is a dam (Berry Bay Dam 1) which is an infrastructure that could affect flood risk.
3	Town of Hart's Location	NH	Comment about structure	Saco River	33003C0065D, 33007C1225D	Discovery Meeting Comment: There are 2 undersized culverts that were washed out in Hurricane Irene and another 2017 storm. They are along Rt. 302, just beyond the entrance to Crawford Notch State Park Dry River campground. There is a high river channel that comes off of the Dry River. Where Saco crosses under 302 is within ½ mile of the culvert. The culverts are not big enough and led to the roadway collapsing after those 2 storm events
4	Town of Hart's Location	NH	Comment about structure	Saco River	33003C0065D, 33007C1225D	Discovery Meeting Comment: There are 2 undersized culverts that were washed out in Hurricane Irene and another 2017 storm. They are along Rt. 302, just beyond the entrance to Crawford Notch State Park Dry River campground. There is a high river channel that comes off of the Dry River. Where Saco crosses under 302 is within ½ mile of the culvert. The culverts are not big enough and led to the roadway collapsing after those 2 storm events
5	Town of Hart's Location	NH	Other	Saco River	33003C0065D, 33007C1225D	Levees included on Questionnaire: Remnants of a berm built by the Army Corps of Engineers in the 1940's exist at the confluence of the Dry River and Saco River. This berm no longer provides substantive flood protection. Discovery Meeting Comment: There is a tributary to the Saco, Stony Brook, near the label of Camp Onion Road on the panel. High water in that channel breached a USACE berm. In high water events, that overflow channel is flowing perpendicularly to 302.
6	Town of Hart's Location	NH	New or Updated Structure in Floodplain	Saco River	33003C0065D, 33007C1225D	Levees included on Questionnaire: Shortly downstream, an additional berm and stabilization/restoration was constructed on the right bank of the Saco River following Hurricane Irene to protect Crawford Notch Campground. This berm appears to provide only partial flood protection.
7	Town of Jackson	NH	Areas with Flooding Issues	Ellis River, Wildcat Brook	33003C0093D, 33003C0089D, 33007C1250D	Regional Comment: There was a recent issue from a homeowner in this area. I believe we are working on a LOMR now to help address.

Map Comment Number	Community	State	Category	Flooding Source	Discovery Map Panel Number	Comments
8	Town of Hart's Location	NH	Leverage study available	Saco River	33003C0035D, 33003C0045D, 33003C0065D, 33003C0154D, 33003C0155D, 33007C1185D, 33007C1200D, 33007C1225D, 33007C1300D, 33009C0335E, 33009C0345E, 33009C0505E	<p>Existing Data Studies included on Questionnaire: <u>There are current existing studies:</u> Hart's Location has received funding through the New Hampshire Clean Water State Revolving Fund program for floodplain mapping and risk analysis. The Town contracted with FBE Environmental and HEB Engineers to carry out this work. Phase I of the project was carried out in 2020 and 2021 and floodplain mapping data are available from the upstream extent of studied Saco River area (FEMA Section CH) to a location just upstream of a bridge on Route 302 (approximately 6.8 river miles upstream). Phase II of the project is set to commence in 2022 beginning with cross-section surveys of the remaining ~5.75 river miles to Saco Lake.</p> <p><u>Recent Hydro/Hydra studies, land development or infrastructure projects:</u> Hydrologic and hydraulic studies carried out by FBE Environmental and HEB Engineers, as noted above, will contribute to overall flood risk assessment for the community, but not to flood risk itself.</p>
9	Town of Fryeburg	NH	Request for Study or Comment About Flood Mapping	Old Course Saco River	33003C0250D, 23017C1164D, 23017C1327D, 23017C1326D	<p>Desired Study Area included on Questionnaire: Saco - Old Corse on MacNeil Rd within Oxbow for about 5 miles as a Zone AE (no floodway) because of citizens wondering why it is a floodplain when it never floods.</p>
10	Town of Hart's Location	NH	Areas with Flooding Issues	Saco River	33003C0065D, 33007C1225D	<p>Discovery Meeting Comment: There is a tributary to the Saco, Stony Brook, near the label of Camp Onion Road on the panel. In high water events, that overflow channel is flowing perpendicularly to 302. High water in that channel breached a USACE berm. In high water events, that overflow channel is flowing perpendicularly to 302.</p>
11	Town of Effingham	NH	Other	N/A	N/A	<p>Existing Data Studies included on Questionnaire: No existing studies</p>
12	Town of Effingham	NH	Other	N/A	N/A	<p>Funding included on Questionnaire: No funding available by community that can be leveraged to contribute to new study.</p>
13	Town of Effingham	NH	Other	N/A	N/A	<p>Levees included on Questionnaire: I don't know of levees in community that provide protection from 100 year flood on flooding sources in area.</p>
14	Town of Effingham	NH	Other	N/A	N/A	<p>GIS Data included on Questionnaire: Unsure of availability or quality of data by the community or in comparison to state</p>
15	Town of Fryeburg	ME	Other	N/A	N/A	<p>Funding included on Questionnaire: I don't know about funding available by community that can be leveraged to contribute to new study.</p>

Map Comment Number	Community	State	Category	Flooding Source	Discovery Map Panel Number	Comments
16	Town of Fryeburg	ME	Other	N/A	N/A	Levees included on Questionnaire: No levees in community that provide protection from 100 year flood on flooding sources in area.
17	Town of Hart's Location	NH	Other	N/A	N/A	Desired Study Area included on Questionnaire: Flooding sources Saco River and Dry River from the extent in Bartlett, NH (Existing Saco River Section CH) to Saco Lake for 12.5 miles as a Zone AE (no Floodway) but Floodway analysis may also be beneficial for the future because Hart's Location is currently unmapped under the National Flood Insurance Program. The timing of this discovery process aligns well with ongoing floodplain mapping efforts in the community. One goal of the floodplain mapping project is to follow Flood Insurance Study practices and standards to the extent practicable such that data might eventually be built upon as part of or otherwise incorporated into future FEMA.
18	Town of Hart's Location	NH	Other	N/A	N/A	Funding included on Questionnaire: Funding is available if needed to be leveraged to contribute to new study because Funds already applied to floodplain mapping, as well as those available for Phase II of the floodplain mapping project, could serve as match funding for FEMA flood risk studies in the community.
19	Town of Hart's Location	NH	Other	N/A	N/A	Levees included on Questionnaire: A riprap bank stabilization protects Route 302 and Crawford Notch Campground just downstream of this confluence.
20	Town of Hart's Location	NH	Other	N/A	N/A	GIS Data included on Questionnaire: <u>Data better than state:</u> Hydrography & Historic flooding inundation---(These data are currently available from the upstream extent of the current Saco River FIS (Section CH) to a point approximately 6.8 miles upstream. Cross-sections were surveyed at an interval sufficient to create a 1-D hydraulic analysis, including hydraulic structures. Generally, cross-sections focused on the Saco River channel and relied on available LiDAR data to inform floodplain topography. In some cases, where the channel is braided, the entirety of the apparent floodplain was surveyed.) <u>Other GIS data they have:</u> River sections surveyed as part of floodplain mapping efforts in 2020 provide bathymetry for the Saco River and some tributaries. Data gathered for the report associated with this project include evidence of historic flooding and comparisons with mapped floodplain extents. <u>Additional GIS data in community:</u> The resulting boundaries from the hydraulic analysis described above are available by request from the Town of Hart's Location, and can be viewed online at https://www.axisgis.com/Harts_LocationNH/ .
21	Town of Hart's Location	NH	Other	N/A	N/A	GIS Data included on Questionnaire: <u>Planned updates or acquisitions of datasets:</u> Similar data collection and analysis is planned for the remaining ~5.75 miles of the Saco River to Saco Lake in 2022. This project would benefit in a significant way from FEMA's involvement and collaboration.

Map Comment Number	Community	State	Category	Flooding Source	Discovery Map Panel Number	Comments
22	Town of Porter	ME	Other	N/A	N/A	Desired Study Area included on Questionnaire: No desired study.
23	Town of Porter	ME	Other	N/A	N/A	Existing Data Studies included on Questionnaire: No existing studies
24	Town of Porter	ME	Other	N/A	N/A	Existing Data Studies included on Questionnaire: No updates that could affect flood risk.
25	Town of Porter	ME	Other	N/A	N/A	Funding included on Questionnaire: No funding available by community that can be leveraged to contribute to new study.
26	Town of Porter	ME	Other	N/A	N/A	Levees included on Questionnaire: No levees in community that provide protection from 100 year flood on flooding sources in area.
27	Town of Porter	ME	Other	N/A	N/A	GIS Data included on Questionnaire: <u>Data better than state:</u> Parcels -- CAI Technologies developed tax mapping software in 2020-2021 that overlays local tax parcels with state and national GIS mapping. These are available online at potermain.org. Accuracy not a given <u>Worse than or same as the state:</u> Topography - LiDAR, Topography - Other*, Otherphotography, Transportation*, Political boundaries*, Land use, Historic flooding inundation*, Wetlands or environmentally sensitive areas* <u>No, do not have:</u> Hydrography, Building foot prints, Building Occupancy, Essential facilities, Dams-Levees-hydraulic structures

Appendix E

Hazard Mitigation Plan Status

COUNTY NAME	COMMUNITY NAME	Status	Expiration Date
Oxford	Batchelders Grant Township	Approved	7/23/2023
Oxford	Town of Brownfield	Approved	7/23/2023
Oxford	Town of Denmark	*Approved Pending Adoption	
Oxford	Town of Fryeburg	Approved	7/23/2023
Oxford	Town of Hiram	*Approved Pending Adoption	
Oxford	Town of Lovell	Approved	7/23/2023
Oxford	Mason Township	Approved	7/23/2023
Oxford	Town of Porter	*Approved Pending Adoption	
Oxford	Town of Stoneham	Approved	7/23/2023
Oxford	Town of Stow	*Approved Pending Adoption	
Oxford	Town of Sweden	Approved	7/23/2023
Oxford	Town of Waterford	Approved	7/23/2023
Carroll	Town of Albany	Approved	8/24/2022
Carroll	Town of Bartlett	Approved	7/24/2023
Carroll	Town of Brookfield	Expired	9/9/2019
Carroll	Town of Chatham	No Plan	
Carroll	Town of Conway	Approved	9/27/2025
Carroll	Town of Eaton	Expired	11/30/2021
Carroll	Town of Effingham	Approved	8/14/2024
Carroll	Town of Freedom	Expired	8/17/2020
Carroll	Town of Hale's Location	No Plan	
Carroll	Town of Hart's Location	Approved	7/24/2023
Carroll	Town of Jackson	Approved	12/10/2024
Carroll	Town of Madison	Expired	10/8/2020
Carroll	Town of Moultonborough	Approved	8/18/2024
Carroll	Town of Ossipee	Approved	3/22/2027
Carroll	Town of Sandwich	Approved	11/24/2024
Carroll	Town of Tamworth	Approved	2/19/2024
Carroll	Town of Tuftonboro	Expired	8/12/2020
Carroll	Town of Wakefield	Approved	9/13/2020
Carroll	Town of Wolfeboro	Approved	8/29/2024
Coos	Town of Carroll	Expired	1/14/2020
Coos	Coos County	State Plan	
Grafton	Town of Bethlehem	Approved	7/26/2026
Grafton	Grafton County	State Plan	
Grafton	Town of Lincoln	Expired	8/25/2021
Grafton	Town of Waterville Valley	Approved	3/18/2026

*Previous plan expired no date populated, new plan approved pending adoption

Appendix F

Community Profiles



Batchelders Grant Township

Oxford County, ME
CID: 230459

NFIP Status: Participating
Current Map Date: Not Available
NFIP Reg-Level: A

LOMC(s): 0
CRS: Not Participating

CAC Date: Not Available
CAV Date: Not Available

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 140 Population Increase from (2015 to 2019): 0 %
Median Age: 48 Language Other than English: 0.0 %
65 Years and Over: 0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 59 Top Industry:
Median Income (Household): \$ 32,143 Educational services, and health care and social assistance

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 3/15/2022
Most Recent Disaster: Maine Severe Storm and Flooding (DR-4647-ME)
Disaster Types: Biological, Coastal Storm, Fire, Fishing Losses, Flood, Freezing, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: Not Available No. of BCX Claims: 0
Total Coverage: Not Available No. of Variances: 0
Number of Policies: Not Available No. of Rep Losses: 0

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0 Dams: 0 Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA, Maine GeoLibrary*

Coastal Areas: None Endangered/Critical Species by State:
Wetland/Shorelines: 0.4 square miles Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea
(0.01% of Community Area) Turtle, Furbish Lousewort, Atlantic Salmon, Rusty
Patched Bumble Bee

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 31 Approved HMPs:
County Grants: 3 700.1: Management Costs - Salaries; 700.2: Management
Costs - Equipment; 700.4: Management Costs - Supplies



FEMA

Grafton County (Unincorporated Areas)

Grafton County, NH
CID: 330003

NFIP Status: Not A NFIP Community
Current Map Date: 02/20/2008
NFIP Reg-Level: A

LOMC(s): 0
CRS: Not Participating

CAC Date: Not Available
CAV Date: Not Available

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 0
Median Age: 0
65 Years and Over: 0 %
Population Increase from (2015 to 2019): 0 %
Language Other than English: 0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 0
Median Income (Household): \$ 0
Top Industry: Agriculture, forestry, fishing and hunting, and mining

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 10/4/2021
Most Recent Disaster: New Hampshire Severe Storm and Flooding (DR-4624-NH)
Disaster Types: Biological, Coastal Storm, Fire, Flood, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: Not Available
Total Coverage: Not Available
Number of Policies: Not Available
No. of BCX Claims: Not Available
No. of Variances: Not Available
No. of Rep Losses: Not Available

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0
Dams: 0
Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA*

Coastal Areas: None
Wetland/Shorelines: 1.5 square miles
(0.02% of Community Area)
Endangered/Critical Species by State: Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea Turtle, Dwarf Wedgemussel, Karner Blue Butterfly, Jesup'S Milk-Vetch, Northeastern Bulrush

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 54
County Grants: 1
Approved HMPs: 700.1: Management Costs - Salaries; 700.4: Management Costs - Supplies



Mason Township

Oxford County, ME
CID: 230695

NFIP Status: Participating
Current Map Date: Not Available
NFIP Reg-Level: A

LOMC(s): 0
CRS: Not Available

CAC Date: Not Available
CAV Date: Not Available

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 139 Population Increase from (2015 to 2019): 0 %
Median Age: 48 Language Other than English: 0.0 %
65 Years and Over: 0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 59 Top Industry:
Median Income (Household): \$ 32,143 Educational services, and health care and social assistance

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 3/15/2022
Most Recent Disaster: Maine Severe Storm and Flooding (DR-4647-ME)
Disaster Types: Biological, Coastal Storm, Fire, Fishing Losses, Flood, Freezing, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: Not Available No. of BCX Claims: Not Available
Total Coverage: Not Available No. of Variances: Not Available
Number of Policies: Not Available No. of Rep Losses: Not Available

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0 Dams: 0 Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA, Maine GeoLibrary*

Coastal Areas: None Endangered/Critical Species by State:
Wetland/Shorelines: 0.8 square miles Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea
(0.03% of Community Area) Turtle, Furbish Lousewort, Atlantic Salmon, Rusty
Patched Bumble Bee

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 31 Approved HMPs:
County Grants: 3 700.1: Management Costs - Salaries; 700.2: Management
Costs - Equipment; 700.4: Management Costs - Supplies



Town of Brookfield

Carroll County, NH
CID: 330179

NFIP Status: Participating
Current Map Date: 03/19/2013
NFIP Reg-Level: B

LOMC(s): 2
CRS: Not Participating

CAC Date: Not Available
CAV Date: 08/21/2003

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 803 Population Increase from (2015 to 2019): -0.04 %
Median Age: 47 Language Other than English: 0.0 %
65 Years and Over: 0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 481 Top Industry:
Median Income (Household): \$ 93,523 Educational services, and health care and social assistance

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 10/4/2021
Most Recent Disaster: New Hampshire Severe Storm and Flooding (DR-4624-NH)
Disaster Types: Biological, Coastal Storm, Fire, Flood, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: \$ 494 No. of BCX Claims: 0
Total Coverage: \$ 350,000 No. of Variances: 0
Number of Policies: 1 No. of Rep Losses: 0

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0 Dams: 7 Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA*

Coastal Areas: None Endangered/Critical Species by State:
Wetland/Shorelines: 1.8 square miles Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea
(0.1% of Community Area) Turtle, Dwarf Wedgemussel, Karner Blue Butterfly,
Jesup'S Milk-Vetch, Northeastern Bulrush

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 54 Approved HMPs:
County Grants: 4 700.1: Management Costs - Salaries; 700.4: Management Costs - Supplies



Town of Brownfield

Oxford County, ME
CID: 230089

NFIP Status: Participating
Current Map Date: 07/07/2009
NFIP Reg-Level: D

LOMC(s): 13
CRS: Not Participating

CAC Date: 08/13/2003
CAV Date: Not Available

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 1,401 Population Increase from (2015 to 2019): 0 %
Median Age: 51 Language Other than English: 0.0 %
65 Years and Over: 0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 705 Top Industry:
Median Income (Household): \$ 47,581 Educational services, and health care and social assistance

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 3/15/2022
Most Recent Disaster: Maine Severe Storm and Flooding (DR-4647-ME)
Disaster Types: Biological, Coastal Storm, Fire, Fishing Losses, Flood, Freezing, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: \$ 1,037 No. of BCX Claims: 0
Total Coverage: \$ 450,100 No. of Variances: 0
Number of Policies: 2 No. of Rep Losses: 0

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0 Dams: 0 Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA, Maine GeoLibrary*

Coastal Areas: None Endangered/Critical Species by State:
Wetland/Shorelines: 6.5 square miles Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea
(0.1% of Community Area) Turtle, Furbish Lousewort, Atlantic Salmon, Rusty
Patched Bumble Bee

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 31 Approved HMPs:
County Grants: 3 700.1: Management Costs - Salaries; 700.2: Management
Costs - Equipment; 700.4: Management Costs - Supplies



FEMA

Town of Effingham

Carroll County, NH
CID: 330012

NFIP Status: Participating
Current Map Date: 03/19/2013
NFIP Reg-Level: C

LOMC(s): 25
CRS: Not Participating

CAC Date: 09/11/2015
CAV Date: Not Available

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 1,630 Population Increase from (2015 to 2019): 0 %
Median Age: 41 Language Other than English: 0.0 %
65 Years and Over: 0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 873 Top Industry:
Median Income (Household): \$ 70,000 Educational services, and health care and social assistance

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 10/4/2021
Most Recent Disaster: New Hampshire Severe Storm and Flooding (DR-4624-NH)
Disaster Types: Biological, Coastal Storm, Fire, Flood, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: \$ 11,693 No. of BCX Claims: 0
Total Coverage: \$ 1,098,000 No. of Variances: 0
Number of Policies: 6 No. of Rep Losses: 0

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0 Dams: 6 Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA*

Coastal Areas: None Endangered/Critical Species by State:
Wetland/Shorelines: 7.3 square miles Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea
(0.2% of Community Area) Turtle, Dwarf Wedgemussel, Karner Blue Butterfly,
Jesup'S Milk-Vetch, Northeastern Bulrush

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 54 Approved HMPs:
County Grants: 4 700.1: Management Costs - Salaries; 700.4: Management Costs - Supplies



FEMA

Town of Hart's Location

Carroll County, NH
CID: 330213

NFIP Status: Participating
Current Map Date: 03/19/2013
NFIP Reg-Level: D

LOMC(s): 0
CRS: Not Participating

CAC Date: Not Available
CAV Date: 04/30/2007

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 42 Population Increase from (2015 to 2019): 0 %
Median Age: 58 Language Other than English: 0 %
65 Years and Over: 0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 27 Top Industry:
Median Income (Household): \$ 0 Professional, scientific, and management, and
administrative, and waste management services

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 10/4/2021
Most Recent Disaster: New Hampshire Severe Storm and Flooding (DR-4624-NH)
Disaster Types: Biological, Coastal Storm, Fire, Flood, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: \$ 2,652 No. of BCX Claims: 0
Total Coverage: \$ 1,643,300 No. of Variances: 0
Number of Policies: 6 No. of Rep Losses: 0

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0 Dams: 1 Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA*

Coastal Areas: None Endangered/Critical Species by State:
Wetland/Shorelines: 0.5 square miles Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea
(0.03% of Community Area) Turtle, Dwarf Wedgemussel, Karner Blue Butterfly,
Jesup'S Milk-Vetch, Northeastern Bulrush

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 54 Approved HMPs:
County Grants: 4 700.1: Management Costs - Salaries; 700.4: Management
Costs - Supplies



Town of Madison

Carroll County, NH
CID: 330220

NFIP Status: Participating
Current Map Date: 03/19/2013
NFIP Reg-Level: B

LOMC(s): 36
CRS: Not Participating

CAC Date: Not Available
CAV Date: 07/11/2006

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population:	2,553	Population Increase from (2015 to 2019):	0.0 %
Median Age:	52	Language Other than English:	0.0 %
65 Years and Over:	0 %		

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force:	1,490	Top Industry:
Median Income (Household):	\$ 74,209	Retail trade

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 10/4/2021
 Most Recent Disaster: New Hampshire Severe Storm and Flooding (DR-4624-NH)
 Disaster Types: Biological, Coastal Storm, Fire, Flood, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums:	\$ 6,812	No. of BCX Claims:	0
Total Coverage:	\$ 2,111,500	No. of Variances:	0
Number of Policies:	8	No. of Rep Losses:	0

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees:	0	Dams:	3	Gages:	0
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Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA*

Coastal Areas:	None	Endangered/Critical Species by State:
Wetland/Shorelines:	4.7 square miles (0.1% of Community Area)	Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea Turtle, Dwarf Wedgemussel, Karner Blue Butterfly, Jesup'S Milk-Vetch, Northeastern Bulrush

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants:	54	Approved HMPs:
County Grants:	4	700.1: Management Costs - Salaries; 700.4: Management Costs - Supplies



Town of Stow

Oxford County, ME
CID: 230186

NFIP Status: Participating
Current Map Date: 07/07/2009
NFIP Reg-Level: B

LOMC(s): 4
CRS: Not Participating

CAC Date: 10/27/2008
CAV Date: Not Available

Demographics *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Total Population: 448
Median Age: 47
65 Years and Over: 0 %
Population Increase from (2015 to 2019): 0 %
Language Other than English: 0.0 %

Industry *U.S. Census, 5-Year American Community Survey - Year 2015 to 2019*

Population in Labor Force: 242
Median Income (Household): \$ 70,000
Top Industry: Educational services, and health care and social assistance

Presidentially Declared Disasters *FEMA Declarations of Data.gov*

Most Recent Disaster Date: 3/15/2022
Most Recent Disaster: Maine Severe Storm and Flooding (DR-4647-ME)
Disaster Types: Biological, Coastal Storm, Fire, Fishing Losses, Flood, Freezing, Hurricane, Severe Storm(s), Snow

National Flood Insurance Program *FEMA Community Information System*

Total Premiums: \$ 545
Total Coverage: \$ 250,000
Number of Policies: 1
No. of BCX Claims: 0
No. of Variances: 0
No. of Rep Losses: 0

Levee and Flood Control Structures *USACE National Levee Dataset and Inventory of Dams, USGS National Water Information System*

Levees: 0
Dams: 2
Gages: 0

Environmentally Sensitive and Coastal Areas *US Fish and Wildlife, FEMA, Maine GeoLibrary*

Coastal Areas: None
Wetland/Shorelines: 2.2 square miles (0.1% of Community Area)
Endangered/Critical Species by State: Roseate Tern, Hawksbill Sea Turtle, Leatherback Sea Turtle, Furbish Lousewort, Atlantic Salmon, Rusty Patched Bumble Bee

Mitigation and Grants *FEMA Hazard Mitigation Grants: Open FEMA Dataset: Hazard Mitigation Assistance Projects -v2*

Statewide Grants: 31
County Grants: 3
Approved HMPs: 700.1: Management Costs - Salaries; 700.2: Management Costs - Equipment; 700.4: Management Costs - Supplies

