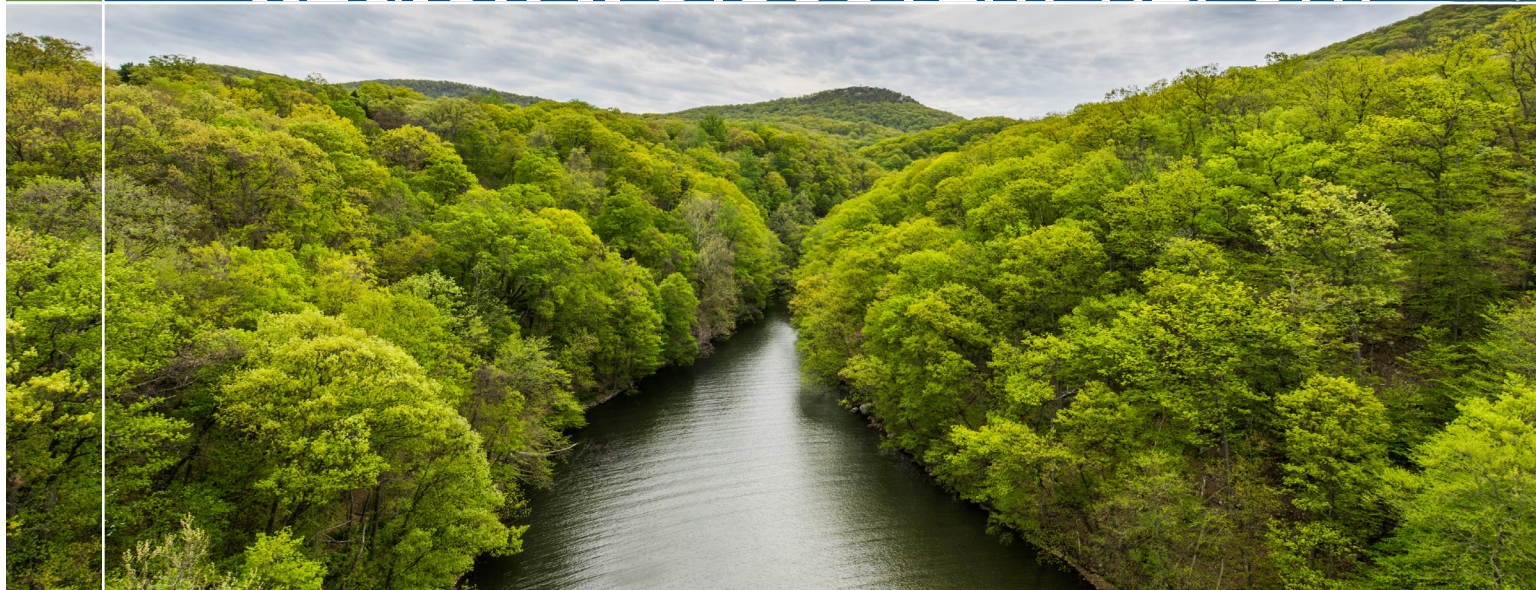




FEMA

# REGION II DISCOVERY REPORT



## UPPER HUDSON WATERSHED | HUC 02020001

ESSEX, HAMILTON, SARATOGA, AND WARREN COUNTIES\*

\*These counties span more than one watershed; please see the following page for a list of communities fully or partially located in the watershed. This report covers only the Upper Hudson Watershed.

Department of Homeland Security  
Federal Emergency Management Agency Region II  
26 Federal Plaza, Room 1807  
New York, NY 10278

March 2019

**RiskMAP**  
Increasing Resilience Together

# TABLE OF CONTENTS

|   |    |
|---|----|
| STUDY INFORMATION .....                                   | 1  |
| Project Area Community List.....                          | 1  |
| TERMS AND ACRONYMS.....                                   | 2  |
| GLOSSARY OF TERMS.....                                    | 3  |
| EXECUTIVE SUMMARY .....                                   | 7  |
| DISCOVERY OVERVIEW .....                                  | 8  |
| DISCOVERY OUTREACH AND ENGAGEMENT STRATEGY .....          | 11 |
| 1. Identification of Stakeholders.....                    | 12 |
| 2. Pre-Meeting Engagement and Information Exchange.....   | 13 |
| 3. Discovery Meetings .....                               | 14 |
| 4. Post-Discovery Engagement.....                         | 15 |
| UPPER HUDSON WATERSHED CHARACTERISTICS AND GEOGRAPHY..... | 16 |
| Watershed Disaster Declarations .....                     | 18 |
| Essex County Overview .....                               | 19 |
| Hamilton County Overview .....                            | 21 |
| Saratoga County Overview .....                            | 23 |
| Warren County Overview .....                              | 25 |
| SUMMARY OF COMMUNITY RISKS IDENTIFIED .....               | 27 |
| Town of Crown Point – Essex County .....                  | 28 |
| Town of Elizabethtown – Essex County .....                | 29 |
| Town of Keene – Essex County .....                        | 30 |
| Town of Minerva – Essex County .....                      | 32 |
| Town of Moriah – Essex County .....                       | 33 |
| Town of Newcomb – Essex County.....                       | 34 |
| Town of North Elba – Essex County .....                   | 35 |
| Town of North Hudson – Essex County .....                 | 36 |
| Town of Schroon – Essex County.....                       | 38 |
| Town of Ticonderoga – Essex County .....                  | 40 |
| Town of Arietta – Hamilton County .....                   | 41 |
| Town of Indian Lake – Hamilton County .....               | 42 |
| Town of Lake Pleasant – Hamilton County .....             | 43 |
| Town of Long Lake – Hamilton County .....                 | 44 |
| Village of Speculator – Hamilton County.....              | 45 |
| Town of Wells – Hamilton County.....                      | 46 |
| Town of Day – Saratoga County.....                        | 47 |
| Town of Hadley – Saratoga County .....                    | 48 |

# TABLE OF CONTENTS CONT'D

|  |           |
|--|-----------|
| Town of Bolton – Warren County.....                              | 49        |
| Town of Chester – Warren County.....                             | 50        |
| Town of Hague – Warren County.....                               | 51        |
| Town of Horicon – Warren County.....                             | 52        |
| Town of Johnsbury – Warren County.....                           | 53        |
| Town of Lake George – Warren County.....                         | 55        |
| Town of Lake Luzerne – Warren County.....                        | 56        |
| Town of Queensbury – Warren County.....                          | 57        |
| Town of Stony Creek – Warren County.....                         | 58        |
| Town of Thurman – Warren County.....                             | 60        |
| Town of Warrensburg–Warren County.....                           | 62        |
| <b>RECOMMENDATIONS FOR FUTURE RISK MAP PROJECT SCOPE.....</b>    | <b>63</b> |
| Detailed Study Requests.....                                     | 64        |
| Approximate Study Requests.....                                  | 67        |
| Total Watershed Study Requests Summary.....                      | 73        |
| Study Requests Outside Project Area.....                         | 74        |
| <b>RESOURCES.....</b>  | <b>75</b> |
| Reducing the Impact of Flooding to Structures.....               | 75        |
| Lowering Your Community’s Flood Insurance Premiums.....          | 76        |
| Mitigation Planning to Reduce Loss of Life and Property.....     | 76        |
| Understanding the Validity of Flood Hazard Data.....             | 77        |
| Trainings to Support Local Mitigation Efforts.....               | 78        |
| Seeking Grants and Support for Hazard Mitigation Projects.....   | 79        |
| Exploring Data Sources Used in Discovery.....                    | 82        |
| <b>REFERENCES.....</b>   | <b>84</b> |
| <b>LIST OF APPENDICES.....</b>                                   | <b>85</b> |
| A. Discovery Watershed Maps                                      |           |
| <b>LIST OF FIGURES</b>   |           |
| Figure 1. The Upper Hudson Watershed.....                        | 16        |
| Figure 2. Dams within the Upper Hudson Watershed.....            | 16        |
| Figure 3. The Upper Hudson Watershed within Essex County.....    | 20        |
| Figure 4. The Upper Hudson Watershed within Hamilton County..... | 22        |
| Figure 5. The Upper Hudson Watershed within Saratoga County..... | 24        |
| Figure 6. The Upper Hudson Watershed within Warren County.....   | 26        |

# STUDY INFORMATION

The Federal Emergency Management Agency's (FEMA's) Risk Mapping, Assessment, and Planning (Risk MAP) program helps communities identify and assess their flood risk. Through Risk MAP, FEMA provides information to enhance local Hazard Mitigation Plans (HMPs), improve community outreach, and increase local resilience to floods. Discovery is the process of gathering local knowledge and data for analysis with the goal of initiating a hazard risk assessment and promoting risk discussions within the watershed.

The Discovery process for the Upper Hudson Watershed began in June 2018, and data collection was completed in July 2018. The in-person Discovery meetings were held in July 2018. Additional details on meetings and stakeholder involvement can be found in the *Discovery Outreach and Engagement Strategy*, community input can be found in the *Summary of Community Risks Identified*, and outcomes can be found in the *Recommendations for Future Risk MAP Project Scope*.

Questions and comments about this report may be shared with Stephanie Gootman of FEMA Region II at [stephanie.gootman@fema.dhs.gov](mailto:stephanie.gootman@fema.dhs.gov).

## PROJECT AREA COMMUNITY LIST

The Discovery project for the Upper Hudson Watershed includes 29 communities in Essex, Hamilton, Saratoga, and Warren Counties. While most of these communities are entirely within the Upper Hudson Watershed, those that overlap with the adjoining Saranac River, Ausable River, and Sacandaga Watersheds are also included in this project area. Communities denoted with an asterisk in the list below should review the other applicable Discovery report(s) and, if available, the section on Recommendations for Future Risk MAP Project Scope. While all communities may be under consideration for a revised FEMA Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM), not all communities will receive them.

### Essex County:

Town of Crown Point  
Town of Elizabethtown<sup>§</sup>  
Town of Keene<sup>§</sup>  
Town of Minerva  
Town of Moriah  
Town of Newcomb<sup>§</sup>  
Town of North Elba\*,<sup>§</sup>  
Town of North Hudson\*  
Town of Schroon  
Town of Ticonderoga

### Hamilton County:

Town of Arietta\*  
Town of Indian Lake\*  
Town of Lake Pleasant\*  
Town of Long Lake  
Village of Speculator\*  
Town of Wells\*

### Saratoga County:

Town of Day\*  
Town of Hadley\*

### Warren County:

Town of Bolton  
Town of Chester  
Town of Hague  
Town of Horicon  
Town of Johnsbury\*  
Town of Lake George  
Town of Lake Luzerne  
Town of Queensbury  
Town of Stony Creek\*  
Town of Thurman\*  
Town of Warrensburg

\* Also spans Saranac River Watershed

§ Also spans Ausable River Watershed

† Also spans Sacandaga Watershed



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# TERMS AND ACRONYMS

|   |  |
|---|--|
| <b>APA:</b> Adirondack Park Agency                  | <b>NOAA:</b> National Oceanic and Atmospheric Administration                         |
| <b>CAC:</b> Community Assistance Contact            | <b>NRCS:</b> National Resources Conservation Service                                 |
| <b>CAV:</b> Community Assistance Visit              | <b>NWS:</b> National Weather Service   |
| <b>CFR:</b> Code of Federal Regulations             | <b>NYSDDEC:</b> New York State Department of Environmental Conservation              |
| <b>CID:</b> Community Identification Number         | <b>NYSDHSES:</b> New York State Division of Homeland Security and Emergency Services |
| <b>CIS:</b> Community Information System            | <b>NYSDOT:</b> New York State Department of Transportation                           |
| <b>CLOMA:</b> Conditional Letter of Map Amendment   | <b>PDM:</b> Pre-Disaster Mitigation  |
| <b>CLOMR:</b> Conditional Letter of Map Revision    | <b>Risk MAP:</b> Risk Mapping, Assessment, and Planning                              |
| <b>CNMS:</b> Coordinated Needs Management Strategy  | <b>RL:</b> Repetitive Loss   |
| <b>CRS:</b> Community Rating System                 | <b>SFHA:</b> Special Flood Hazard Area   |
| <b>FEMA:</b> Federal Emergency Management Agency    | <b>SRL:</b> Severe Repetitive Loss   |
| <b>FIRM:</b> Flood Insurance Rate Map               | <b>SWCD:</b> Soil and Water Conservation District                                    |
| <b>FIS:</b> Flood Insurance Study                   | <b>USACE:</b> United States Army Corps of Engineers                                  |
| <b>FMA:</b> Flood Mitigation Assistance             | <b>USDA:</b> United States Department of Agriculture                                 |
| <b>GIS:</b> Geographic Information System           | <b>USGS:</b> United States Geological Survey   |
| <b>HMA:</b> Hazard Mitigation Assistance            |  |
| <b>HMGP:</b> Hazard Mitigation Grant Program        |  |
| <b>HMP:</b> Hazard Mitigation Plan                  |  |
| <b>HWM:</b> High Water Mark                         |  |
| <b>HUC:</b> Hydrologic Unit Code                    |  |
| <b>LiDAR:</b> Light Detection and Ranging           |  |
| <b>LOMA:</b> Letter of Map Amendment                |  |
| <b>LOMC:</b> Letter of Map Change                   |  |
| <b>LOMR:</b> Letter of Map Revision                 |  |
| <b>LOMR-F:</b> Letter of Map Revision Based on Fill |  |
| <b>LOMR-VZ:</b> Letter of Map Revision V Zone       |  |
| <b>MIP:</b> Mapping Information Platform            |  |

# GLOSSARY OF TERMS

*Please note: The Federal Emergency Management Agency (FEMA) is the source for the following terms and definitions, unless cited otherwise.*

**1-Percent-Annual-Chance Flood:** The flood that has a 1-percent chance of being equaled or exceeded in any given year. This is the regulatory standard also referred to as the “100-year flood” or “base flood.” The base flood is the national standard used by the National Flood Insurance Program (NFIP) and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development.

**0.2-Percent-Annual-Chance Flood:** A flood that has a 0.2-percent chance of being equaled or exceeded in any given year (also known as a 500-year flood).

**Approximate Study:** Areas subject to inundation by the 1-percent-annual-chance flood event, generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply. An approximate study is represented on a FIRM as a Zone A.

**Community Assistance Contacts (CACs):** A telephone call or brief visit to an NFIP community for the purpose of establishing or reestablishing contact to determine if any program-related problems exist and to offer assistance.

**Community Assistance Visits (CAVs):** A visit to a community by a FEMA staff member or staff of a State agency on behalf of FEMA that serves the dual purpose of providing technical assistance to the community and ensuring that the community is adequately enforcing its floodplain management regulations.

**Community Rating System (CRS):** A voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Flood insurance premium rates in participating communities are discounted to reflect the reduced flood risk resulting from the community actions.

**Conditional Letter of Map Revision (CLOMR):** A CLOMR is a letter from FEMA that comments on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the Special Flood Hazard Area (SFHA). The letter does not revise an effective NFIP map; it indicates whether the project, if built as proposed, would be recognized by FEMA. FEMA charges a fee for processing a CLOMR to recover the costs associated with the review.

**Conditional Letter of Map Revision Based on Fill (CLOMR-F):** A CLOMR-F is FEMA's comment on a proposed project that will be elevated by fill. This process is not for submitting proposed development that would affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA. The letter does not revise an effective NFIP map, but indicates whether the project, if built as proposed, would be recognized by FEMA.

**Coordinated Needs Management Strategy (CNMS):** The CNMS application is FEMA's inventory of flood hazard studies and flood hazard mapping needs for areas where a flood hazard study is needed. CNMS is beneficial for community officials and FEMA staff in analyzing and depicting flood hazards to enhance understanding of flood risk and make informed decisions on community planning and flood mitigation.

**Dam:** An artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material, for the purpose of storage or control of water (Federal Energy Regulatory Commission). The New York State Department of Environmental Conservation (NYSDEC) uses a classification scale of A to D to assign hazard potential to each of the dam structures contained within the inventory, while dams without a hazard code assignment are considered Class 0 or unclassified hazard potential. The hazard classifications for dams are assigned based on the particular physical characteristics of a dam and its location, may be assigned irrespective of the size of the dam, as appropriate, and are as follows:

- Class A or low hazard dam. A dam failure is unlikely to result in damage to anything more than isolated or unoccupied buildings, undeveloped lands, minor roads such as town or county roads; is unlikely to result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; and/or is otherwise unlikely to pose the threat of personal injury, substantial economic loss, or substantial environmental damage.
- Class B or intermediate hazard dam. A dam failure may result in damage to isolated homes, main highways, and minor railroads; may result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; and/or is otherwise likely to pose the threat of personal injury and/or substantial economic loss or substantial environmental damage. Loss of human life is not expected.
- Class C or high hazard dam. A dam failure may result in widespread or serious damage to home(s); damage to main highways, industrial or commercial buildings, railroads, and/or important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; or substantial environmental damage; such that the loss of human life or widespread substantial economic loss is likely.
- Class D or negligible or no hazard dam. A dam that has been breached or removed, or has failed or otherwise no longer materially impounds waters, or a dam that was planned but never constructed. Class D dams are considered to be defunct dams posing negligible or no hazard. The department may retain pertinent records regarding such dams.

**Disaster Declaration:** The President can declare a major disaster for any natural event that is determined to have caused damage of such severity that it is beyond the combined capabilities of State and local governments to respond. A Major Disaster Declaration provides a wide range of Federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work.

**Detailed Study:** A flood hazard mapping study done using hydrologic and hydraulic methods that produce BFEs, floodways, and other pertinent flood data. Detailed study areas are shown on the FIRM as Zones AE, AH, AO, AR, A99, A1-A30, and in coastal areas as Zones V, VE, and V1-30.

**Flood Insurance Rate Map (FIRM):** The official map of a community on which FEMA has delineated both the SFHAs and the risk premium zones applicable to the community.

**Flood Insurance Study (FIS):** A compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS report. The FIS report contains detailed flood elevation data in flood profiles and data tables.

**Flood Mitigation Assistance (FMA):** The FMA program provides funds for projects to reduce or eliminate risk of flood damage to buildings that are insured under the NFIP on an annual basis. There are three types of FMA grants available, which include (1) planning grants, (2) project grants, and (3) management cost grants.

**Hazard Mitigation Assistance (HMA):** FEMA's HMA grant programs, which include the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), and FMA, provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages.

**Hazard Mitigation Grant Program (HMGP):** The HMGP provides grants to States or Tribes and local governments (as sub-grantees) to implement long-term hazard mitigation measures after a Major Disaster Declaration.

**Hydrologic Unit Code (HUC):** The U.S. Geological Survey (USGS) divides and subdivides the area of the United States into successively smaller hydrologic units that are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged or nested within each other, from the largest geographic area (regions) to the smallest geographic area (cataloging units). Each hydrologic unit is identified by a unique HUC consisting of two to eight digits based on the four levels of classification in the hydrologic unit system. (USGS)

**Ice Jams:** An ice jam may be defined as an accumulation of ice in a river, stream, or other flooding source that reduces the cross-sectional area available to carry the flow and increases the water-surface elevation. Ice usually accumulates at a natural or manmade obstruction or a relatively sudden change in slope, alignment, or cross-section shape or depth. Ice jams are common in locations where the channel slope changes from relatively steep to mild and where a tributary stream enters a large river.

**Light Detection and Ranging (LiDAR):** LiDAR is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. These light pulses—combined with other data recorded by the airborne system—generate precise, three-dimensional information about the shape of the Earth and its surface characteristics. LiDAR systems allow scientists and mapping professionals to examine both natural and manmade environments with accuracy, precision, and flexibility. (NOAA)

**Letter of Map Amendment (LOMA):** A LOMA is an official amendment, by letter, to an effective NFIP map. A LOMA establishes a property's location in relation to the SFHA. LOMAs are usually issued because a property has been inadvertently identified as being in the floodplain but is actually on natural high ground above the BFE or out as shown on the FIRM. Because a LOMA officially amends the effective NFIP map, it is a public record that the community must maintain. Any LOMA should be noted on the community's master flood map and filed by panel number in an accessible location.

**Letter of Map Change (LOMC):** LOMC is a general term used to refer to the several types of revisions and amendments to FEMA maps that can be accomplished by letter. They include LOMAs, Letters of Map Revision (LOMRs), and Letters of Map Revision Based on Fill (LOMR-Fs).

**Letter of Map Revision (LOMR):** A LOMR is FEMA's modification to an effective FIRM or portion of the FIRM. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and, thus, result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA. The LOMR officially revises the FIRM and sometimes the FIS report.

**Letter of Map Revision Based on Fill (LOMR-F):** A LOMR-F is a FEMA letter amending the effective FIRM for an existing structure or parcel of land that has been elevated by fill.

**Levee/Floodwall:** A manmade structure designed to contain or control the flow of water. Levees and floodwalls are constructed from earth, compacted soil, or artificial materials, such as concrete or steel. To protect against erosion and scouring, earthen levees can be covered with grass and gravel or hard surfaces like stone, asphalt, or concrete.



**Mitigation:** Any action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards, including, but not limited to, flooding. Flood mitigation measures include elevation, floodproofing, relocation, demolition, or any combination thereof.

**Multi-Frequency Depth Grids:** This Flood Risk Product helps communities better understand their flood hazard risk beyond the 1-percent-annual-chance floodplain and provides information useful for developing a Benefit-Cost Analysis by producing grids for the 10-percent (10-year depth), 4-percent (25-year depth), 2-percent (50-year depth), 1-percent (100-year depth), and 0.2-percent-annual-chance (500-year depth) flood events. These grids will be used to create additional analyses that depict the percent-annual chance of flooding and the percent chance of flooding over a 30-year span in the floodplain.

**Pre-Disaster Mitigation (PDM):** The PDM grant program provides funds for hazard mitigation planning and projects on an annual basis. The PDM program was enacted to reduce overall risk to people and structures, while simultaneously reducing reliance on Federal funding in the event of a disaster.

**Repetitive Loss (RL) property:** An RL property is any insurable building for which two or more claims of more than \$1,000 were paid by the NFIP within any rolling 10-year period since 1978. An RL property may or may not be currently insured by the NFIP.

**Risk Mapping, Assessment, and Planning (Risk MAP) program:** The FEMA Risk MAP program provides communities with flood risk information and tools to support mitigation planning and risk reduction actions.

**Severe Repetitive Loss (SRL) property:** An SRL property is a single family property (consisting of one to four residences) covered by flood insurance underwritten by the NFIP and has incurred flood-related damage for which four or more separate claim payments have been paid with the amount of each claim payment exceeding \$5,000 and with a cumulative amount of such claim payments exceeding \$20,000; or for which at least two separate claim payments have been made with the cumulative amount of such claims exceeding the market value of the property.

**Special Flood Hazard Area (SFHA):** SFHAs are high-risk areas subject to inundation by the base (1-percent-annual-chance) flood; they are also referred to as 1-percent-annual-chance floodplains, base floodplains, or 100-year floodplains.

**Water-Surface Elevation Grids:** When appropriated, this non-regulatory Flood Risk Product is produced during the Flood Risk Review phase to complement the 1-percent-annual-chance floodplains designated on the FIRMs making the calculated WSEL results more readily available. The WSEL Grid is prepared for the 1-percent-annual-chance storm event and may be produced for a range of other flood events. Using a Geographic Information System (GIS), community officials can easily generate an estimated BFE for interested residents and land developers, and to make critical floodplain management and mitigation decisions.

# EXECUTIVE SUMMARY

In 2018, FEMA implemented a Risk MAP Discovery project for the Upper Hudson Watershed, which consists of four counties and 29 communities. Discovery begins after a watershed has been prioritized based on flood risk, recent hazard events, and population density by FEMA. Through the Discovery process, FEMA was able to obtain key insights and data that will lead to greater community resiliency. Stakeholders within the watershed helped FEMA to determine what natural hazard information already exists and learn what natural hazard information is still needed to make mitigation decisions. Communities also helped to identify critical infrastructure and resources that could be impacted during a natural hazard event.

Comprising significant input from local stakeholders, the Upper Hudson Watershed Discovery Report describes historical flood risk, existing flood-related data, local needs concerning FEMA FIS reports and FIRMs, and current flood mitigation activities. During the outreach process—which involved individual phone calls and emails, informational webinars, and discussion-based meetings—emphasis was placed on opportunities for stakeholders to provide comments, concerns, input for future mapping projects, and ideas for mitigation activities. Through these efforts, FEMA found that many communities worked in partnership and relied on support from State agencies for their floodplain management activities and data.

The Discovery project for the Upper Hudson Watershed was informed by data and resources available at the watershed and county level, as well as local insights from stakeholders at the community level. Using community mapping needs and data collected through the engagement process, as well as additional detailed analysis, a recommended scope of work for the Upper Hudson Watershed was developed. Data collected from community stakeholders within the Upper Hudson Watershed can be found in the *Summary of Community Risks Identified* section, with additional information in the *Essex, Hamilton, Saratoga, and Warren County Overview* sections.

The recommended scope of work includes detailed and updated approximate studies for Essex, Hamilton, Saratoga, and Warren Counties, as well as providing modernized maps in a digital format. It recommends a total of 40.6 miles for detailed stream studies, which includes four high priority detailed study requests, and 193.2 miles for approximate stream studies. These study requests were prioritized based on community interest expressed during the Discovery process, the presence of existing data and flood maps, the proximity to recent or proposed development, and the status of the water body in the Coordinated Needs Management Strategy database. It does not include studies requested for flooding solely due to ice jams or beaver dams.

The detailed and updated studies can assist both the communities and counties in enforcing floodplain regulations and managing development. In addition to potentially digitizing maps, the scope of work may help to address any areas of flood risk, conduct studies, and inform communities of more precise flood risk data and information. Specific information on stream study requests and other community needs collected through the Discovery process can be found in the section on *Recommendations for Future Risk MAP Project Scope*.

Upon completion of the Risk MAP Discovery phase, FEMA will initiate further data development, prioritize areas for restudy, and begin the process to update maps within the watershed, pending available funding.

# DISCOVERY OVERVIEW

The FEMA Risk MAP program is an interactive and collaborative process between local, State, and Federal agencies to develop quality natural hazard data that encourages local awareness of risk and supports mitigation actions that increase a community's resilience to natural hazards, with an emphasis on flood risk. For example, Risk MAP can help communities:

- Identify hazard mitigation projects to be incorporated into HMPs, Recovery Plans, and Response Plans;
- Identify gaps in current regulations or Comprehensive Plans and identify the need for new land use and development standards; and
- Support personal preparedness and outreach event planning and marketing.

Discovery is the first phase of Risk MAP and is initiated after a watershed has been prioritized based on flood risk and population density. The goals of Discovery are to:

- Gather information about local flood risk and flood hazards;
- Determine what natural hazard information already exists;
- Learn what natural hazard information is still needed to make mitigation decisions;
- Identify what critical infrastructure and resources could be affected during a natural hazard event; and
- Support relationship building and resource sharing between local communities, State, and Federal agencies.

Based on the findings of the Discovery process, FEMA will consider a potential flood risk mapping project within the Upper Hudson Watershed, culminating in studying the flood risk within the watershed and at the countywide level. While there is no exact timeline, a flood risk mapping project takes on average three to five years to complete. Upon completion, communities are provided with updated FIRMs, FIS reports, and FIRM databases, also known as Flood Hazard Products or regulatory products.

With Discovery as the Risk MAP starting point, FEMA gathers the necessary local knowledge that supports the entire multi-year Risk MAP flood risk mapping project, which is outlined below for the Upper Hudson Watershed.



# YOUR RISK MAP PROCESS

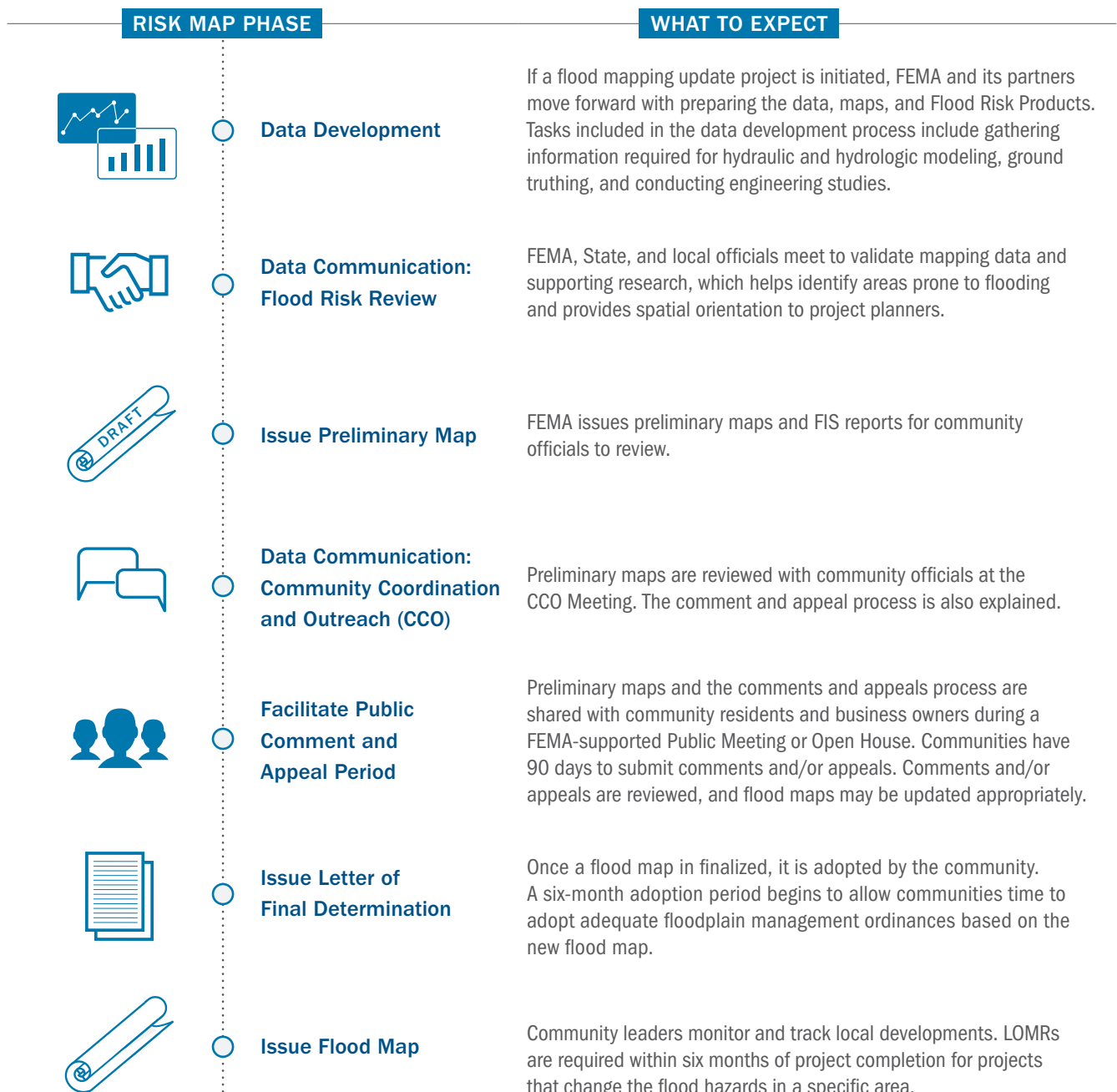


## Discovery Meetings:

July 25, 2018 and  
July 26, 2018

Completed and summarized in this Discovery Report.

If the data and research collected during the Discovery phase supports the need for a flood map update and regulatory products, a recommended scope of work is developed for stream reaches requiring new studies. The following timeline shows the steps of that process.









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Additionally, communities may receive a set of non-regulatory tools that they can use to better understand and make informed decisions to reduce risk. The following non-regulatory products may be delivered to the communities at the end of a project.

| FLOOD RISK PRODUCT  | WHAT IS IT?   | HOW IS IT USED?  |
|---|---|--|
|  <b>FLOOD RISK MAP</b>                     | Illustrates overall flood risk within the project area by including the outcomes of assessments completed during the flood risk mapping project.  | Can be used by communities as outreach tools to communicate risk to residents more clearly.  |
|  <b>FLOOD RISK DATABASE</b>                | Provides communities with geospatial information collected during the risk assessment process. Offers effective ways to visualize and communicate flood risk. Four datasets are included. |  |
|  <b>1. Changes Since Last FIRM (CSLF)</b>  | Highlights how the latest FIRMs differ from the previous maps to help communities understand the changes and prepare for adoption of new maps.  | Communities can use this to engage residents and businesses about their changing risk and the implications for flood insurance.        |
|  <b>2. Flood Risk Assessment</b>         | Focuses on damage that results from floods of various magnitudes. Identifies flood-prone areas and vulnerable populations and properties, and provides an estimate of potential losses.   | Can help guide community mitigation efforts by highlighting areas where risk reduction actions may produce the most effective results. |
|  <b>3. Flood Depth and Analysis Grid</b> | Communicates detailed information about the depth and velocity of floodwaters, as well as the probability of an area being flooded over time.   | Officials can use depth grids to show individuals the depth of flooding their home might experience at different flood frequencies.    |
|  <b>4. Areas of Mitigation Interest</b>  | Explains how various physical factors affect the severity of flooding.  | Information can be tied to the local HMP, which can help projects gain traction and help officials secure funding for those projects.  |

The flood risk mapping products, both regulatory and non-regulatory, can inform and encourage local awareness of risk and support a community's resilience to flooding events. If flood mapping products are developed, at their completion, an optional Resilience Meeting can be supported by FEMA. The Resilience Meeting provides an opportunity for local, State, and Federal partners to come together to discuss local mitigation actions that can be supported and strengthened by the Flood Risk Products.

# DISCOVERY OUTREACH AND ENGAGEMENT STRATEGY

In the Upper Hudson Watershed, the Discovery phase of Risk MAP had four major components: (1) identify stakeholders, (2) gather information from each participating community through pre-Discovery Information Exchange webinars and a voluntary online questionnaire, (3) support in-person Discovery meetings to continue to build upon the information gathered ahead of the meeting, and (4) conduct post-meeting follow-up and engagement. Together, the strategy will help FEMA to work with communities to confirm natural hazard information and assess the need for more data on natural hazards and their impact on critical facilities.





# 1. IDENTIFICATION OF STAKEHOLDERS

The first step in this engagement process was to identify stakeholders. As part of this Discovery process for the Upper Hudson Watershed, as well as for the Ausable River, Saranac River, and Sacandaga Watersheds, FEMA developed an extensive list of contact information in consultation with NYSDEC of community officials and other stakeholders within the watersheds. These included floodplain administrators, emergency managers, planners, public works officials, GIS staff, community development officials, building officials, parks and recreation staff, transportation staff, and contract support staff. Community officials were also encouraged to invite other officials as they deemed appropriate.

Across all four watersheds, over 485 stakeholders—including local community officials, county officials, representatives from Federal and State agencies, Federal and State elected representatives, non-governmental organizations, and other local groups—were contacted and invited to one of seven Discovery Meetings. In instances where communities were near or within two watersheds, stakeholders were invited to choose between the two closest meeting locations regardless of their primary watershed location to ensure that information was shared at both the county and community level.

Invitations were sent out via email (at least one per pre-Discovery webinar, and at least two per in-person meeting). Two rounds of calls were made to stakeholders who did not respond via email invitations. Within the Upper Hudson Watershed approximately 185 stakeholders were contacted by email or phone, including:

- One hundred and fifty community officials representing all municipalities within the watershed (see Project Area Community List)
- Thirty-five county and State officials from:
  - NYS Department of Environmental Conservation (NYSDEC)
  - NYS Department of Homeland Security and Emergency Services (NYSDHSES)
  - New York State Office of Emergency Management
  - Essex County
  - Hamilton County
  - Saratoga County
  - Warren County

In addition to municipal officials and planning and emergency response staff, other stakeholders offered valuable information to help develop pre-mapping data and final mapping products. Local organizations and non-profits invited to participate in the Upper Hudson Watershed Discovery process included the following:

- Adirondack Council, Inc.
- Adirondack Park Agency (APA)
- Adirondack Sustainable Communities, Inc.

## 2. PRE-MEETING ENGAGEMENT AND INFORMATION EXCHANGE

Summaries of the pre-Discovery webinars and the voluntary online questionnaire responses were captured in the Profiles for Essex, Hamilton, Saratoga, and Warren Counties.

### Pre-Discovery Information Exchange Webinars

The Upper Hudson Watershed Discovery phase began with a series of Information Exchange Webinars that were held with each community from June 11 to 19, 2018. These webinars served as an opportunity to gain information from each local community. The webinars explored natural hazard risks with an emphasis on flood impacts, community development efforts, and HMPs. Furthermore, information from these webinars was recorded both as written notes and included in community-scaled maps to visually display areas of concern identified during these pre-Discovery conversations.

1. Are there areas in your community affected by flooding? If so, are you in need of more accurate flood mapping information?
2. While our efforts primarily focus on flooding, are there other natural hazards that impact your community?
3. Are there areas of population growth or development that may be impacted by known flooding or other natural hazards?
4. Are there any environmentally sensitive areas identified in your community?
5. Can you share one example of a mitigation activity/project that your community has prioritized and one example of how you have helped your community to be more prepared?

Additionally, during the Information Exchange Webinars, FEMA provided an update for the Lake Champlain and Hudson-Hoosic Discovery projects, because these study areas also encompass parts of Essex, Hamilton, and Warren Counties. Outcomes from these two Discovery projects are described in the *Upper Hudson Watershed Characteristics and Geography* section.

### Voluntary Online Questionnaire

To help stakeholders who were unable to attend the webinars and to gain knowledge from webinar participants, FEMA distributed a questionnaire that asked local community officials for information regarding local risks. The questionnaire was not mandatory, but it allowed FEMA and its contractors to confirm and obtain the following information from key community stakeholders:

- Areas that need a flood restudy
- Areas affected by flooding
- Areas that have flooded more than once
- Verifiable high water marks
- Recent/ongoing/proposed mitigation actions
- Areas undergoing growth
- Hazards that are not flood-related
- Additional community contacts that should be invited to the in-person meetings



### 3. DISCOVERY MEETINGS

Following the webinars, FEMA hosted two in-person Discovery meetings for the Upper Hudson Watershed on Wednesday, July 25, 2018, in the Town of North Hudson and on Thursday, July 26 in the Town of Lake Pleasant, to discuss and explore the opportunities for a Risk MAP project. The goals of the meeting were multifaceted:

- Continue the discussion of natural hazard risks and ways to mitigate those risks;
- Discuss and connect to various risk assessment tools available from FEMA to support and enhance resilience efforts; and
- Prioritize areas of potential studies and projects that will be considered for scoping a Risk MAP project.

Following an introductory presentation of Risk MAP and the Discovery process, FEMA and community participants reviewed and validated flood and other hazard data, event history, mapping needs, local risk concerns, and development plans. Using community-scaled maps, participants identified locations prone to flooding and other natural hazards or where data is needed. Where possible, participants identified locations of mitigation projects that could reduce risk and categorized the projects on a timeline (1 to 3 years [short-term], 3 to 7 years [mid-term], and 7 to 15 years [long-term]) and noted which projects were the highest priority. Communities were also asked to identify training needs and other necessities, which included, but were not limited to, funding support, floodplain management training, and hazard preparedness brochures. Mapping and hazard needs, recent and potential mitigation projects, and other resource needs identified during the Discovery process are detailed in the *Summary of Community Risks Identified* section.

The following materials were used at the meeting:

- Meeting agenda
- Meeting sign-in sheets
- Meeting presentation
- Essex County: Profile
- Hamilton County: Profile
- Saratoga County: Profile
- Warren County: Profile
- Breakout session guide
- Notetaking guide

## 4. POST-DISCOVERY ENGAGEMENT

Following the Upper Hudson River Watershed Discovery meetings, FEMA sent participants a follow-up email, which included a link to download copies of the Discovery presentation, county profiles, contact information, and additional resources on grants.

Additional outreach to communities in the Upper Hudson River Watershed was conducted by FEMA in September. FEMA sent follow-up emails to communities that had not participated in the Discovery process to date (i.e., did not participate in the pre-Discovery Information Exchange Webinars, complete the voluntary questionnaire, and/or attend one of the Discovery meetings), and again requested their input on the process.

Continued engagement with communities will include the delivery of the draft Discovery Report, a commenting period on the report, the delivery of the final Discovery Report, and future coordination with communities as mapping projects are discussed. In addition, FEMA is available to support calls, events, and other outreach opportunities as communities participate in flood mitigation efforts.



# UPPER HUDSON WATERSHED CHARACTERISTICS AND GEOGRAPHY

The Upper Hudson Watershed is in eastern New York State, near the Vermont border, and occupies 1,662 square miles. Portions of Essex, Hamilton, Saratoga, and Warren Counties lie within the watershed, and it is entirely within the Adirondack Park. The watershed ranges in elevation from 541 to 5,323 feet above sea level, with the highest elevations found in the western half of the watershed (U.S. Department of Agriculture 2011).

The watershed is primarily rural. According to the 2011 National Land Cover Database, only 1.9 percent of the Upper Hudson Watershed is developed with open space and low-intensity uses, while 0.1 percent is developed with medium- and high-intensity uses. There are no communities within the watershed that are considered urban, though a concentration of population is found near the Lake George area. There is very little agriculture in the watershed, and it is mostly in the eastern half of the watershed. Forests comprise the majority of the watershed at 83.3 percent, followed by open water at 6 percent, and wetlands at 5.7 percent, with shrub, grassland, barren land, and crops at less than 2 percent each (National Land Cover Database 2011). There are 114 dams in the Upper Hudson Watershed, including 23 dams that, if they were to fail, could cause substantial economic loss or the loss of lives (NYSDEC 2018).

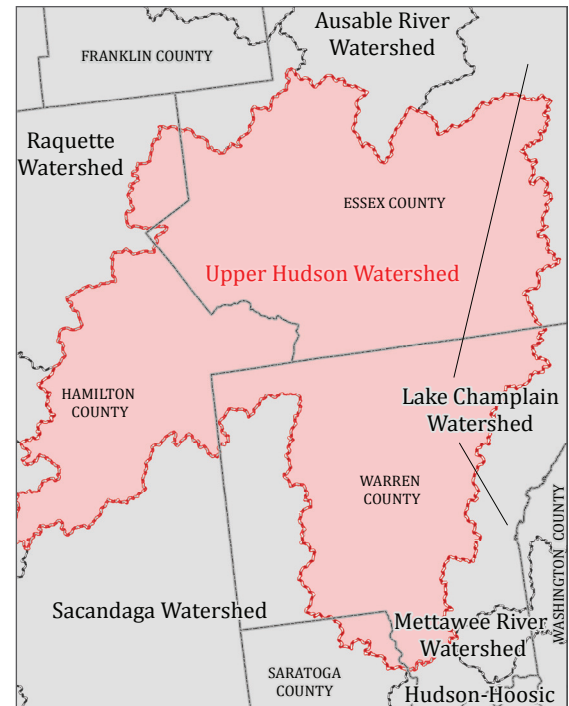


FIGURE 1: The Upper Hudson Watershed

|       |                         |     |
|-------|-------------------------|-----|
| ◆     | Unclassified Potential  | 6   |
| ◆     | No/Negligible Potential | 15  |
| ◆     | Low Potential           | 70  |
| ◆     | Intermediate Potential  | 18  |
| ◆     | High Potential          | 5   |
| TOTAL |                         | 114 |

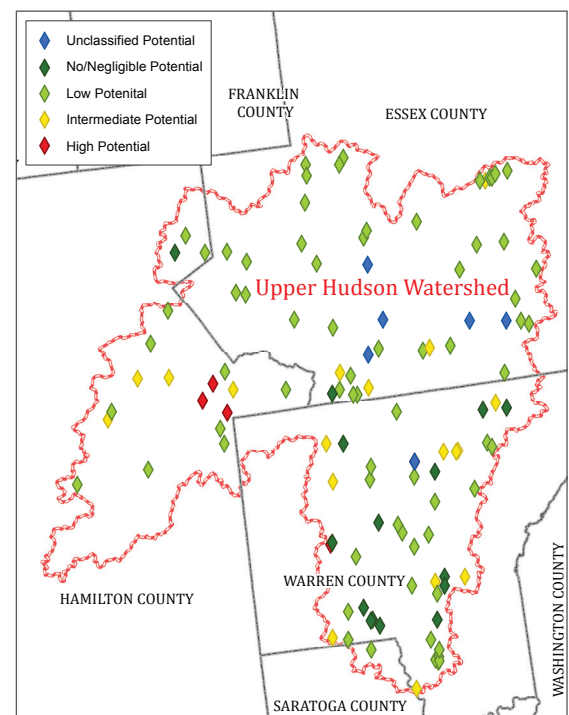


FIGURE 2: Dams within the Upper Hudson Watershed

Watershed boundaries are classified based on hydrologic units following a numerical classification system. The Upper Hudson Watershed boundary is represented by the HUC-8 code of 02020001. The numbers are arranged by scale, with the first two numbers representing the region, and the following two numbers each representing the sub-regions, accounting units, and cataloging units, respectively. The Upper Hudson Watershed shares boundaries with:

- Ausable River Watershed (04150404)
- Hudson-Hoosic Watershed (02020003)
- Lake Champlain Watershed (04150408)
- Mettawee River Watershed (04150401)
- Raquette Watershed (04150305)
- Sacandaga Watershed (02020002)

The Discovery processes for the Ausable River and Sacandaga Watersheds are currently underway and a recommended scope of work will be summarized in their respective final reports in early 2019. Two other Discovery processes for the neighboring Lake Champlain and Hudson-Hoosic Watersheds were completed in 2016 and 2014, respectively.

In the Lake Champlain Watershed Discovery project, multiple streams were identified for detailed and approximate studies. In addition to upgrading existing mapping in Essex and Warren Counties to a digital format, 13 high priority new or revised detailed riverine and lake studies, 15 medium priority detailed studies, 10 lower priority detailed studies, and six updated approximate studies were recommended for inclusion in a future Risk MAP project scope (FEMA 2016). In Fiscal Year 2016, FEMA Region II funded flood hazard analyses for several of the recommended studies. Work maps and Flood Risk Products (FRPs) will be issued in advance of preliminary FIRMs. These FRPs are tools to inform decision making and include a Flood Risk Report, Water-Surface Elevation (WSEL) Grids, and Multi-Frequency Depth Grids. More information about the project can be found in the *Lake Champlain Watershed Discovery Report*, which is available for download at <https://data.femadata.com/Region2/Discovery>.

In the Hudson-Hoosic Discovery project, reaches of the Hudson River shoreline and multiple other streams were identified for detailed and approximate studies. In addition to upgrading existing mapping in Saratoga and Warren Counties to a digital format, the Hudson River and 15 additional studies were recommended for inclusion in a future Risk MAP project scope (FEMA 2014). In Fiscal Years 2012, 2016, and 2017, flood hazard analysis was funded for several of the recommended studies. Work maps in the Hudson-Hoosic Watershed were issued in early 2018. In Fiscal Year 2018, FEMA issued FRPs for portions of Saratoga County. More information about the project can be found in the *Hudson-Hoosic Watershed Discovery Report*, which is available for download at <https://data.femadata.com/Region2/Discovery>.










# WATERSHED DISASTER DECLARATIONS

|      |   |
|------|---|
| 2017 | DR-4322/SNOW<br>Severe Winter Storm and Snowstorm<br>Essex County, Hamilton County & Saratoga County            |
| 2013 | DR-4129/FLOOD<br>Severe Storm and Flooding<br>Essex County & Warren County                                      |
| 2012 | EM-3351/HURRICANE<br>Hurricane Sandy<br>Essex County, Hamilton County, Saratoga County & Warren County          |
| 2011 | DR-4020/HURRICANE<br>Hurricane Irene<br>Essex County, Hamilton County, & Warren County                          |
| 2011 | DR-1993/FLOOD<br>Severe Storms, Flooding, Tornadoes, and Straight-Line Winds<br>Hamilton County & Warren County |
| 2010 | DR-1899/SEVERE STORM(S)<br>Severe Storms and Flooding<br>Warren County  |
| 2009 | DR-1827/SEVERE STORM(S)<br>Severe Winter Storm<br>Saratoga County   |
| 2008 | EM-3299/SEVERE STORM(S)<br>Severe Winter Storm<br>Saratoga County   |
| 2007 | DR-1692/SEVERE STORM(S)<br>Severe Storms and Inland and Coastal Flooding<br>Essex County                        |
| 2006 | DR-1670/SEVERE STORM(S)<br>Severe Winter Storm<br>Hamilton County   |

In response to disasters, FEMA can issue disaster declarations for Major Disasters (DRs) and Emergency Declarations (EMs).

The President can declare a DR in New York after the Governor submits a request for any natural event, fire, flood or explosion in which the severity of damage is determined to exceed the combined response capabilities of State and local governments. A wide range of Federal assistance programs for individual and public infrastructure can be provided after such a declaration is made, including funds for both emergency and permanent work. EMs can be declared by the President after the Governor submits a request for any occasion or instance when the President determines Federal assistance is needed to supplement State and local government efforts in providing emergency services, up to \$5 million dollars.

As of October 2018, there have been a total of 29 FEMA disaster declarations in the Upper Hudson Watershed dating back to 1976. The number of declarations informed the need for this Discovery effort within the Upper Hudson Watershed. The timeline shows the 10 most recent declarations in more detail, while the table summarizes all declarations within the watershed (FEMA 2018, Disaster Declarations Summary).

| Incident Type  | Declared County/ Area   | # of Disaster Declarations | Declaration Date   |
|--|---|----------------------------|--|
|  EARTHQUAKE                             | Essex County, Hamilton County & Warren County                             | 1                          | (DR): 2002   |
|  FIRE                                   | Essex County, Hamilton County, Saratoga County & Warren County            | 1                          | (DR): 2001   |
|  FLOOD                                  | Essex County, Hamilton County, Saratoga County & Warren County            | 4                          | (DR): 2013, 2011, 1996, 1976                                       |
|  HURRICANE                              | Essex County, Hamilton County, Saratoga County & Warren County            | 4                          | (DR): 2011, 1999<br>(EM): 2012, 2005                               |
|  SEVERE STORM(S)                        | Essex County, Hamilton County, Saratoga County & Warren County            | 12                         | (DR): 2011, 2010, 2009, 2007, 2006, 2004, 1998, 1996<br>(EM): 2008 |
|  SNOW                                   | Essex County, Hamilton County, Saratoga County & Warren County            | 5                          | (DR): 2017, 1998, 1987<br>(EM): 2003, 1993                         |
|  OTHER (Power Outage & West Nile Virus) | Statewide, Essex County, Hamilton County, Saratoga County & Warren County | 2                          | (EM): 2003, 2000   |



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# ESSEX COUNTY | OVERVIEW

**39K**  
COUNTY  
POPULATION



(U.S. CENSUS BUREAU 2010)

**22**

PERSONS  
PER SQUARE MILE



(U.S. CENSUS BUREAU 2010)

**6**

SQUARE MILES  
OF FARMLAND

(U.S. DEPARTMENT OF AGRICULTURE 2012)



**92**



ESTIMATED FARMS  
IN WATERSHED

(U.S. DEPARTMENT OF AGRICULTURE 2011)

TOP INDUSTRIES  
IN COUNTY:

HEALTH CARE &  
SOCIAL ASSISTANCE,  
ACCOMMODATION &  
FOOD SERVICE, PUBLIC  
ADMINISTRATION

(U.S. CENSUS BUREAU 2015)



PRESIDENTIALLY  
DECLARED DISASTERS  
SINCE 1953

(FEMA 2018, DATA VISUALIZATION:  
DISASTER DECLARATIONS)

## HMP STATUS

APA DATE: 6/29/2011

PLAN APPROVAL: 9/28/2011

ADOPTION DATE: 9/28/2011

EXPIRATION DATE: 9/27/2016

PLAN STATUS: EXPIRED/PLAN  
IN PROGRESS

(ESSEX COUNTY NY 2011)

## HAZARD PROFILE

(ESSEX COUNTY NY 2011)



FLOOD



WINTER  
STORM



WINDSTORM



DROUGHT



WILDFIRE



DAM FAILURE



ICE STORM

## Overview

Essex County is bordered by Lake Champlain and Clinton, Franklin, Hamilton, Warren, and Washington Counties and has a total area of 1,794.23 square miles. The estimated population of Essex County within the Upper Hudson Watershed is 26,804. The estimate was derived by combining total populations for all towns in Essex County that are partially or fully within the watershed (U.S. Census Bureau 2010). The county seat is Elizabethtown. Additionally, 732.2 square miles of Essex County land are in the Upper Hudson Watershed study area (U.S. Department of Agriculture 2011). Major Disaster declarations for Essex County occurred most recently following two events on March 14, 2017, when the county experienced a severe winter storm and snow, and on June 26, 2013, when severe storms and flooding occurred for several days. Following the declarations, the county received support through FEMA Public Assistance and Hazard Mitigation Assistance (FEMA 2018, Disaster Declarations Summary). While portions of Essex County are in the Upper Hudson Watershed, additional areas in the county are also in the Ausable River and Saranac River Watersheds, for which the Discovery processes are expected to be completed in early 2019, as well as the Lake Champlain Watershed, for which the Discovery process was completed in 2016. Other areas of Essex County are in the Raquette Watershed.



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## Planning

According to the 2008 *Land Use Planning & Regulations: A Survey of New York State Municipalities*, Essex County has the following resources to assist with planning and greater resiliency: *A Guide to Planning and Zoning Laws of New York State*, the Essex County Planning Board, *Essex County New York Destination Master Plan*, the Essex County Agricultural District, *Essex County Strategic Farmland Protection Plan*, and a Right-to-Farm law (NY Department of State 2011). In addition, 100 percent of Essex County falls under the jurisdiction of the Adirondack Park Agency (APA), which was created in 1971 by the State Legislature to develop long-range public and private land use plans. The Towns of Chesterfield, Newcomb, and Willsboro have Agency-approved Local Land Use Plans. APA land use documents include the *Adirondack Park State Land Master Plan* and the *Citizen's Guide to Adirondack Park Agency Land Use Regulations* (Adirondack Park Agency).

## Common Flooding Concerns

In Essex County, communities that participated in the Discovery process for the Upper Hudson Watershed shared a variety of flooding concerns and mapping needs. Flooding has caused erosion and washouts from Paradox Creek on the Letsonville Road/Old Furnace Road bridge crossing in the Town of Crown Point, from The Branch on Route 9 in the Town of Elizabethtown, from the Schroon River on Route 9 and French Road in the Town of Schroon, and from several sources affecting roads in the Town of Ticonderoga. Several communities cited locally important facilities that are at risk, including a senior home in the Town of Keene and the Route 74 Well House in Schroon. The Towns of Crown Point, Elizabethtown, Keene, and Minerva specifically expressed an interest in receiving updated flood maps.

The total estimated structure value at risk in Essex County is \$766,411,503. The county has identified 15 critical facilities within the floodplain (Essex County NY 2011).

## Common Mitigation Concerns

Communities in Essex County have several similar mitigation concerns that were shared during the Discovery meetings and described in the expired 2011 Essex County Hazard Mitigation Plan (HMP). Throughout Essex County, aging and undersized bridges were a commonly raised issue which have contributed to flooding and ice jams in the past. The Towns of Elizabethtown, Keene, and North Hudson identified several bridges that need to be elevated or improved. Similarly, the Towns of Crown Point, Moriah, and Newcomb identified culvert enlargement or replacement as an action to address flood risk in the HMP. The Town of Keene identified potential restoration projects for Gulf Brook and the Ausable River.

More detailed information on the flooding and mitigation concerns described here can be found within the *Summary of Community Risks Identified* section.

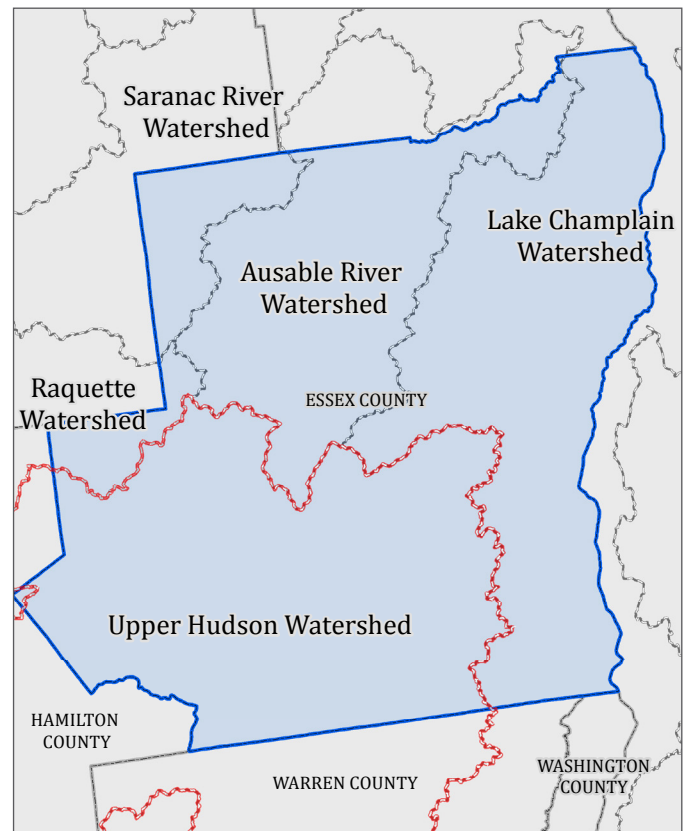


FIGURE 3: The Upper Hudson Watershed within Essex County

# HAMILTON COUNTY | OVERVIEW

**4.8K**  
COUNTY POPULATION



(U.S. CENSUS BUREAU 2010)

**3**  
PERSONS  
PER SQUARE MILE



(U.S. CENSUS BUREAU 2010)

**TOP INDUSTRIES  
IN COUNTY:**  
PUBLIC ADMINISTRATION,  
ACCOMMODATION & FOOD SERVICE,  
EDUCATIONAL SERVICES

(U.S. CENSUS BUREAU 2015)



**PRESIDENTIALLY  
DECLARED DISASTERS  
SINCE 1953**

(FEMA 2018, DATA VISUALIZATION:  
DISASTER DECLARATIONS)

## HMP STATUS

APA DATE: N/A

PLAN APPROVAL: N/A

ADOPTION DATE: N/A

EXPIRATION DATE: N/A

PLAN STATUS: N/A

## HAZARD PROFILED IN THE STATE HMP\*



FLOOD



WINTER  
STORM



HIGH WIND



DROUGHT



HAIL



HURRICANES



EXTREME  
TEMPERATURE

\*This list reflects hazards in Hamilton County that resulted in losses (NY Department of Homeland Security and Emergency Services 2014) since Hamilton County does not have an active Hazard Mitigation Plan.

## Overview

Hamilton County is bordered by Herkimer, St. Lawrence, Franklin, Essex, Warren, Saratoga, and Fulton Counties and has a total area of 1,717 square miles. The estimated population of Hamilton County within the Upper Hudson Watershed is 4,619. The estimate was derived by combining total populations for all towns in Hamilton County that are partially or fully within the watershed (U.S. Census Bureau 2010). The Town of Lake Pleasant functions as the county seat. Additionally, 404.3 square miles of land are in the Upper Hudson Watershed study area (U.S. Department of Agriculture 2011). Major Disaster declarations for Hamilton County occurred most recently following two events on March 14, 2017, when the county experienced a severe winter storm and snow, and on October 27, 2012, when Hurricane Sandy made landfall with rain and wind effects lasting for several days. Following the 2017 declaration, the county received support through FEMA Public Assistance and Hazard Mitigation Assistance; following the 2012 declaration, the county received support through FEMA Public Assistance (FEMA 2018, Disaster Declarations Summary).

While portions of Hamilton County are in the Upper Hudson Watershed, additional areas of the county are also in the Sacandaga Watershed, for which the Discovery process is expected to be completed in early 2019, and the Black Watershed, for which the Discovery process was completed in 2015. Other areas of the county are also in the Mohawk and Raquette Watersheds, though communities in these watersheds were studied as part of previous Discovery efforts. There are no ongoing regulatory studies in Hamilton County.



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## Planning

According to the 2008 *Land Use Planning & Regulations: A Survey of New York State Municipalities*, the county does not have county-specific boards or guidance but can use *A Guide to Planning and Zoning Laws of New York State* for planning and greater resiliency (NY Department of State 2011). In addition, 100 percent of Hamilton County falls under the jurisdiction of the Adirondack Park Agency (APA), which was created in 1971 by the State Legislature to develop long-range public and private land use plans. The Towns of Arietta and Indian Lake have Agency-approved Local Land Use Plans. APA land use documents include the *Adirondack Park State Land Master Plan* and the *Citizen's Guide to Adirondack Park Agency Land Use Regulations* (Adirondack Park Agency).

## Common Flooding Concerns

Communities in Hamilton County shared fewer flooding concerns during the Upper Hudson Watershed Discovery meetings compared to other counties in the watershed due to the local topography and generally high elevations. However, the Towns of Arietta and Indian Lake have steep slopes that exacerbate flooding after rain events. Communities identified beaver dam-associated flooding as an occasional flooding source, occurring on Wild Road near Piseco Lake in the Town of Arietta and on Long Level Road near Route 30 in the Village of Speculator. In winter, ice jam-related flooding occurs on the Cedar River in the Town of Indian Lake, and generally throughout the county.

## Common Mitigation Concerns

Because Hamilton County does not have an active Hazard Mitigation Plan, limited mitigation concerns were identified during the Discovery process. The New York State Department of Environment Conservation has flagged a culvert on Route 30 over Hatchery Brook in the Village of Speculator that does not meet standards and should be increased in size. More detailed information on the flooding and mitigation concerns described here can be found within the *Summary of Community Risks Identified* section.

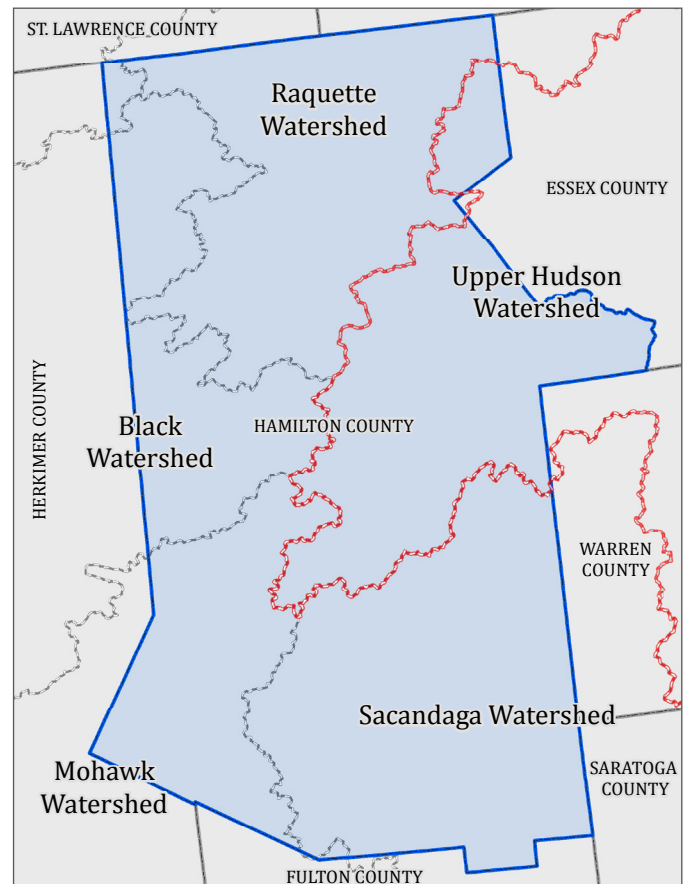


FIGURE 4: The Upper Hudson Watershed within Hamilton County

# SARATOGA COUNTY | OVERVIEW

**219.6K**

COUNTY  
POPULATION



(U.S. CENSUS BUREAU 2010)

**271**

PERSONS  
PER SQUARE MILE



(U.S. CENSUS BUREAU 2010)

**5**

SQUARE MILES  
OF FARMLAND

(U.S. DEPARTMENT OF AGRICULTURE 2012)



**13**



ESTIMATED FARMS  
IN WATERSHED

(U.S. DEPARTMENT OF AGRICULTURE 2011)

TOP INDUSTRIES  
IN COUNTY:

EDUCATIONAL SERVICES,  
HEALTH CARE &  
SOCIAL ASSISTANCE,  
RETAIL TRADE

(U.S. CENSUS BUREAU 2015)



PRESIDENTIALLY  
DECLARED DISASTERS  
SINCE 1953

(FEMA 2018, DATA VISUALIZATION:  
DISASTER DECLARATIONS)

## HMP STATUS

APA DATE: 7/12/2011

PLAN APPROVAL: 11/16/2011

ADOPTION DATE: 11/29/2011

EXPIRATION DATE: 11/15/2016

PLAN STATUS: EXPIRED/PLAN  
IN PROGRESS

(SARATOGA COUNTY NY 2011)

## HAZARDS PROFILED IN THE COUNTY HMP

(SARATOGA COUNTY NY 2011)



FLOOD



SEVERE  
WINTER STORM



EARTHQUAKE



SEVERE  
STORMS



GROUND FAILURE

## Overview

Saratoga County is bordered by Warren, Washington, Rensselaer, Albany, Montgomery, Schenectady, Fulton, and Hamilton Counties and has a total area of 809.98 square miles. The estimated population of Saratoga County within the Upper Hudson Watershed is 2,548. The estimate was derived by combining total populations for all towns in Saratoga County that are partially or fully within the watershed (U.S. Census Bureau 2010). The Village of Ballston Spa functions as the county seat. Additionally, 19.1 square miles of land are in the Upper Hudson Watershed study area (U.S. Department of Agriculture 2011). While portions of Saratoga County are in the Upper Hudson Watershed, additional areas in the county are also in the Sacandaga Watershed, for which the Discovery process is expected to be completed in early 2019, and the Hudson-Hoosic Watershed, for which the Discovery process was completed in 2014. In Fiscal Year 2012, FEMA Region II funded flood hazard analyses for several studies. Data development and work maps in the Hudson-Hoosic Watershed, including for Saratoga County, were issued in early 2018. FEMA also issued Flood Risk Products for portions of Saratoga County. Other areas of the county are also in the Mohawk Watershed, however, those communities were studied as part of previous Discovery efforts.



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## Planning

According to the 2008 *Land Use Planning & Regulations: A Survey of New York State Municipalities*, Saratoga County has the following resources to assist with planning and greater resiliency: *A Guide to Planning and Zoning Laws of New York State*, the Saratoga County Planning Board, a Comprehensive Plan, and a Right-to-Farm law (NY Department of State 2011). In addition, the northern part of Saratoga County falls under the jurisdiction of the Adirondack Park Agency (APA) (Saratoga County NY 2011), which was created in 1971 by the State Legislature to develop long-range public and private land use plans. The Towns of Day and Edinburg have Agency-approved Local Land Use Plans. APA land use documents include the *Adirondack Park State Land Master Plan* and the *Citizen's Guide to Adirondack Park Agency Land Use Regulations* (Adirondack Park Agency).

## Common Flooding Concerns

Only two communities within Saratoga County fall within the Upper Hudson Watershed, so there is limited feedback about common flooding concerns. Snow was expressed as a significant hazard of concern. Flooding from Wolf Creek affects Eddy and Tower Road in the Town of Hadley. Flooding from the Hudson River affects the Rockwell Street bridge crossing that spans the Towns of Hadley and Lake Luzerne.

Saratoga County has estimated the building stock replacement value of structures and contents in the 1-percent-annual-chance floodplain as \$242,861,000 and \$308,315,000 in the 0.2-percent-annual-chance floodplain. The county identified eight critical facilities within the 0.2-percent-annual-chance floodplain (Saratoga County NY 2011).

## Common Mitigation Concerns

The Town of Hadley shared that culvert replacement and repair work is occurring on a continuing basis. Mitigation actions for the county municipalities in the watershed focused on the creation, enhancement, and maintenance of mutual aid agreements between municipalities and enhancing resilience to severe storms through the National Weather Service's "Storm Ready" program.

More detailed information on the flooding and mitigation concerns described here can be found within the *Summary of Community Risks Identified* section.

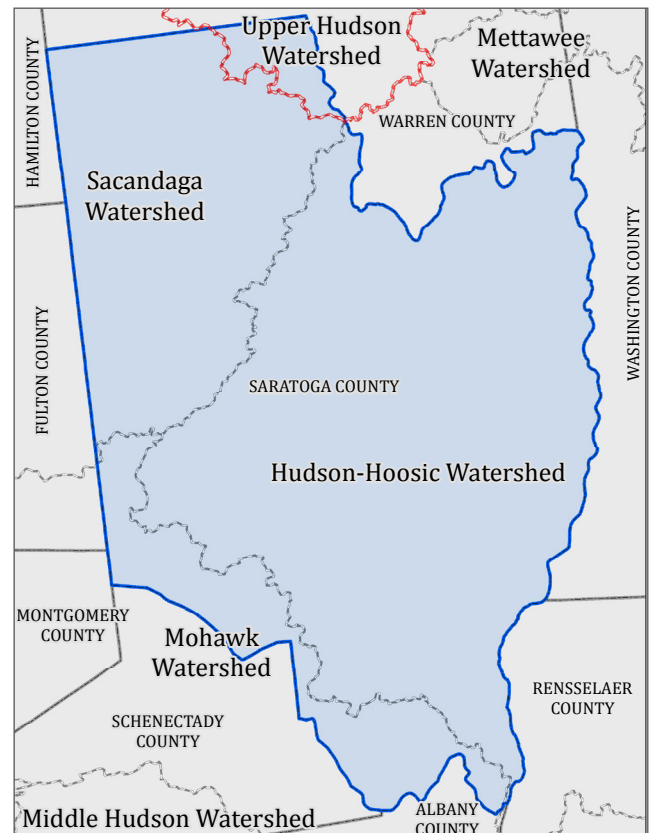


FIGURE 5: The Upper Hudson Watershed within Saratoga County

# WARREN COUNTY | OVERVIEW

**65.7K**

COUNTY  
POPULATION



(U.S. CENSUS BUREAU 2010)

**76**

PERSONS  
PER SQUARE MILE



(U.S. CENSUS BUREAU 2010)

**1**

SQUARE MILES  
OF FARMLAND

(U.S. DEPARTMENT OF AGRICULTURE 2012)



**46**

ESTIMATED FARMS  
IN WATERSHED

(U.S. DEPARTMENT OF AGRICULTURE 2011)



TOP INDUSTRIES  
IN COUNTY:

HEALTH CARE & SOCIAL  
ASSISTANCE, RETAIL TRADE,  
ACCOMMODATION &  
FOOD SERVICES

(U.S. CENSUS BUREAU 2015)



PRESIDENTIALLY  
DECLARED DISASTERS  
SINCE 1953

(FEMA 2018, DATA VISUALIZATION:  
DISASTER DECLARATIONS)

## HMP STATUS

APA DATE: 4/25/2017

PLAN APPROVAL: 7/5/2017

ADOPTION DATE: 7/25/2017

EXPIRATION DATE: 7/4/2022

PLAN STATUS: APPROVED

(WARREN COUNTY NY 2016)

## HAZARDS PROFILED IN THE COUNTY HMP (WARREN COUNTY NY 2016)



FLOOD



SEVERE  
WINTER  
STORM



SEVERE  
STORMS



WILDFIRE



EARTHQUAKE



LANDSLIDE



INFESTATION



HAZARDOUS  
MATERIAL  
INCIDENTS



CYBERSECURITY

## Overview

Warren County is bordered by Washington, Saratoga, Hamilton, and Essex Counties and has a total area of 866 square miles. The estimated population of Warren County within the Upper Hudson Watershed is 51,399. The estimate was derived by combining total populations for all towns in Warren County that are partially or fully within the watershed (U.S. Census Bureau 2010). The main population centers are the City of Glens Falls and the Town of Queensbury, with the latter functioning as the county seat. Additionally, 507.2 square miles of land are in the Upper Hudson Watershed study area (U.S. Department of Agriculture 2011). Major Disaster declarations for Warren County occurred most recently following two events on June 26, 2013, when severe storms and flooding were experienced for several days, and on October 27, 2012, when Hurricane Sandy made landfall with rain and wind effects lasting for several days. Following the 2013 declaration, the county received support through FEMA Public Assistance and Hazard Mitigation Assistance; following the 2012 declaration, the county received support through FEMA Public Assistance (FEMA 2018, Disaster Declarations Summary). While portions of Warren County are in the Upper Hudson Watershed, additional areas in the county are also in the Sacandaga Watershed, for which the Discovery process is expected to be completed in early 2019, as well as the Lake Champlain and Hudson-Hoosic Watersheds, for which the Discovery processes were completed in 2016 and 2014, respectively. In Fiscal Year 2012, FEMA Region II funded flood hazard analyses for some studies from the Hudson-Hoosic Watershed Discovery process. Data development and work maps in the Hudson-Hoosic Watershed, including for some streams in Warren County, were issued in early 2018. Other areas of Warren County are in the Mettawee River Watershed.



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## Planning

According to the 2008 *Land Use Planning & Regulations: A Survey of New York State Municipalities*, Warren County has the following resources to assist with planning and greater resiliency: *A Guide to Planning and Zoning Laws of New York State* and the Warren County Department of Planning and Community Development (NY Department of State 2011). In addition, Warren County falls under the jurisdiction of the APA, which was created in 1971 by the State Legislature to develop long-range public and private land use plans. The Towns of Bolton, Chester, Hague, Horicon, Johnsbury, and Lake George have Agency-approved Local Land Use Plans. APA land use documents include the *Adirondack Park State Land Master Plan* and the *Citizen's Guide to Adirondack Park Agency Land Use Regulations* (Adirondack Park Agency).

## Common Flooding Concerns

Warren County communities shared significant feedback on flooding concerns during the Upper Hudson Watershed Discovery process. All county municipalities within the watershed described flood risk areas, spring run-off, and ice jams as common sources of flooding. Beaver dams are known to cause flooding in the Towns of Chester, Horicon, Johnsbury, Lake Luzerne, and Thurman. Many towns expressed concern that breached dams could cause significant flooding to the fire department and transfer station in the Town of Bolton, near Roaring and Baker Brooks in the Town of Johnsbury, and on the Sacandaga River in the Town of Lake Luzerne. Erosion and washouts have affected road access in a few locations, including on States Road East and Van Auken Road in the Town of Stony Creek, and also on County Road 11 in the Town of Bolton. Several towns shared an interest in new flood maps, especially areas proximate to Schroon Lake, Schroon River, Hudson River, Balm of Gilead Brook, English Brook, and several roads that are further described in the *Summary of Community Risks Identified* section. Warren County officials also requested a study of Northwest Bay Brook and Lake George, both of which are outside the project area, but were included in the *Recommendations for Risk MAP Project Scope*.

Warren County estimated the replacement cost value for 823 buildings in the 1-percent-annual-chance floodplain to be \$264,900,485. For the additional 876 buildings in the 0.2-percent-annual-chance floodplain, the value is estimated at \$278,559,660. The county identified 102 critical facilities within the 1-percent-annual-chance or 0.2-percent-annual-chance floodplains (Warren County NY 2016).

## Common Mitigation Concerns

In Warren County, many of the mitigation concerns shared by communities during the Upper Hudson Watershed Discovery process were also described in greater detail in the 2016 Warren County Hazard Mitigation Plan (HMP). One example of this is the need to assess critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains and determine support for facility operators to mitigate future risks. Another example is a countywide effort to map all culverts and build a database including information on the size, age, and construction type of culverts. This would support planned or ongoing culvert replacement and repair efforts in the Towns of Bolton, Horicon, Johnsbury, Thurman, and Stony Creek. Actions to address dam issues were identified in the HMP for the Town of Horicon, by installing a lake level control system at Upper Brant Lake Dam, and for the Town of Bolton, by installing an auxiliary spillway for Edgecomb Pond Dam as well as seeking other mitigating improvements. During Discovery, the Towns of Chester and Johnsbury expressed interest in preserving open space to reduce structural flood damage.

More detailed information on the flooding and mitigation concerns described here can be found within the *Summary of Community Risks Identified* section.

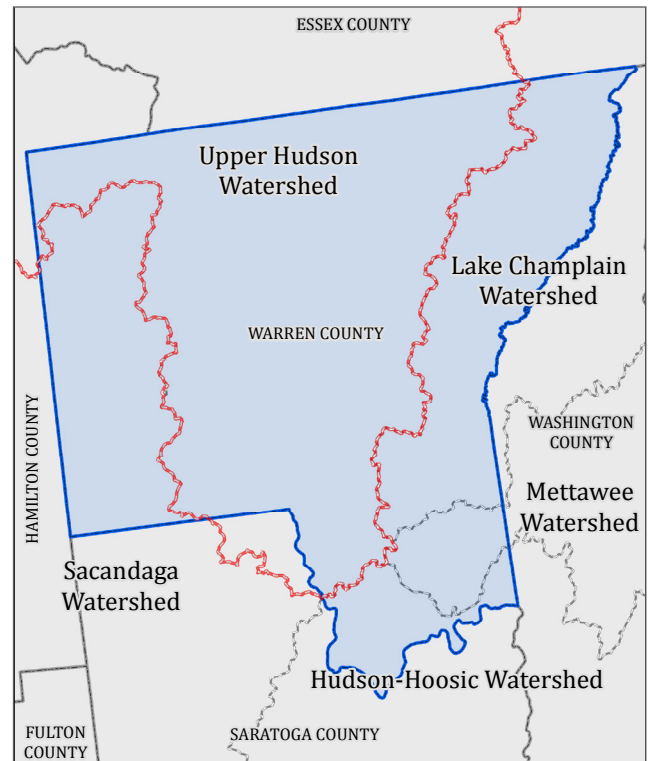


FIGURE 6: The Upper Hudson Watershed within Warren County

# SUMMARY OF COMMUNITY RISKS IDENTIFIED

The Discovery process—including webinars, a questionnaire, in-person consultations, and follow-up correspondence—generated numerous identified needs related to flood mapping, mitigation, and training. Although Discovery occurs at the watershed level, the following pages summarize information at the community level from local officials and other watershed stakeholders. In some instances, specific geographic information is provided; otherwise this information was not collected. The Resources section of this report provides information on mitigation grant opportunities, trainings, and other resources to help address the needs identified during the Discovery process.

In the Upper Hudson Watershed, communities have older, community-based paper FIRMs developed between 1984 and 2001. Specific FIRM and Letter of Map Change (LOMC) data for each community provide an understanding of the existing hazard information available. The NFIP status, number of active policies, and ordinance level and effective date show the community's overall preparedness for a flood event, while the Community Rating System (CRS) status indicates whether the community has made additional steps toward reducing risk. A description of the data source is provided in the table, and definitions for terms used are provided in the *Glossary of Terms*.

A combination of the information shared by local officials and relevant available data was used to develop a recommended scope of work for consideration of future Risk MAP projects, if available funding permits. Specific stream study priorities were identified based on the data gathered and stakeholder input provided during this Discovery project. A total of seven separate detailed stream study mapping needs and 32 updated approximate studies were identified by stakeholders. There were also seven stream study requests for flooding sources outside of the project area. Complete details on priority mapping projects can be found in the *Recommendations for Future Risk MAP Project Scope* section of this report.

| DATA                     | SOURCE   |
|--------------------------|--|
| POPULATION               | U.S. Census Bureau 2010. Numbers are rounded   |
| FIRM DATE                | Effective date of the current FIRM per FEMA Community Information System (CIS) as of May 23, 2018  |
| NFIP STATUS              | Status of participation in the NFIP per CIS as of May 23, 2018   |
| FIRM STATUS              | Never Mapped – FEMA has not published FIRMs for the area in question<br>Original – the current effective FIRMs are the initial FIRMs produced for the community<br>Revised – the current effective FIRMs were revised through the Risk MAP process and updated since the initial FIRM date<br>Per CIS as of May 23, 2018 |
| LOMC(S)                  | Number of completed LOMCs per FEMA Mapping Information Platform (MIP) as of August 2018  |
| POLICIES                 | Number of all active NFIP policies in all zones per CIS as of May 23, 2018   |
| INSURANCE IN FORCE       | Total insurance amount from all active NFIP policies in all zones per CIS as of May 23, 2018   |
| # PAID LOSSES            | Number of NFIP claims paid for all active policies in all zones per CIS as of May 23, 2018   |
| TOTAL LOSSES PAID        | Total amount of NFIP claims paid for all active policies in all zones per CIS as of May 23, 2018   |
| CAV                      | Date of most recent CAV by FEMA as of May 23, 2018   |
| CAC                      | Date of most recent CAC by FEMA as of May 23, 2018   |
| ORDINANCE LEVEL          | A – when the 1-percent-annual-chance floodplain has not been identified<br>D – when the 1-percent-annual-chance floodplain has been identified, but not including Coastal High-Hazard Areas<br>Information current as of September 2018, per CIS and the NY Department of State, Division of State Records               |
| ORDINANCE EFFECTIVE DATE | Date that minimum NFIP requirements for the ordinance level went into effect, as of September 2018, per CIS and the NY Department of State, Division of State Records  |
| CRS RATING               | Rating level if the community is enrolled in the CRS per FEMA NFIP Flood Insurance Manual as of May 1, 2018  |



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# TOWN OF CROWN POINT | ESSEX COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- The Letsonville Road/Old Furnace Road bridge crossing over Paradox Creek is vulnerable to washouts
- In July 2017, twin culverts on Old Furnace Road experienced structural damage
- A need for an updated flood study of Putnam Creek, from upstream of Lake Champlain to Hamilton Road, was identified; the effective Special Flood Hazard Area is considered inaccurate, as homes are at high elevations and clear of flood hazards

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Penfield Pond has had its lake level reduced by two feet by a dam near Old Furnace Road and Whitehead Road since Hurricane Sandy
- The 2011 Essex County Hazard Mitigation Plan describes an action to enlarge five culverts at Penfield Road, Buck Mountain Road, and Old Furnace Road

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

| COMMUNITY                | TOWN OF CROWN POINT |
|--------------------------|---------------------|
| POPULATION               | 2,025               |
| FIRM DATE                | 7/16/1987           |
| NFIP STATUS              | Participating       |
| FIRM STATUS              | Original            |
| LOMC(S)                  | 24                  |
| POLICIES                 | 14                  |
| INSURANCE IN FORCE       | \$2,793,100         |
| # PAID LOSSES            | 2                   |
| TOTAL LOSSES PAID        | \$7,014             |
| CAV                      | 6/4/2014            |
| CAC                      | 9/28/2011           |
| ORDINANCE LEVEL          | D                   |
| ORDINANCE EFFECTIVE DATE | 7/16/1987           |
| CRS RATING               | N/A                 |



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# TOWN OF ELIZABETHTOWN | ESSEX COUNTY

The Town of Elizabethtown should also consult the Ausable River Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Route 9, including at the Maple Street bridge at Route 9N, experiences erosion and flooding at The Branch
- Seven homes by the east side of Route 10 experience flooding north of the Boquet River
- Route 9 at Split Rock Falls on the Boquet River floods multiple times annually
- An access road on Woodruff Street has experienced flooding from The Branch up to two feet in depth
- The Boquet River, in the area of River Street and Lincoln Pond Road, was identified for a restudy
- The convergence of The Branch and Barton Brook near Water Street was identified for a restudy, with the segment of Barton Brook by Noble Terrace Park being the highest priority area
- The county stated that the Hamlet of New Russia floods annually, causing road closures. Nearby flood sources include the Boquet River and Roaring Brook

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Some buyout programs have been completed for previously flooded structures
- A Light Detection and Ranging flyover was completed in Essex County
- The 2011 Essex County Hazard Mitigation Plan describes an action for the town to enforce new International Building Center seismic ratings and also educate contractors

### Mitigation and Risk Reduction Needs:

- A tree planting program could be implemented
- Bridge elevations could be increased
- An outreach or notification system for flooding and other risks could be established, as could enrollment in a personal protection program

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Community officials shared that social media training on warnings/alerts/disaster response would help increase community preparedness
- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

| COMMUNITY                | TOWN OF ELIZABETHTOWN |
|--------------------------|-----------------------|
| POPULATION               | 1,165                 |
| FIRM DATE                | 1/20/1993             |
| NFIP STATUS              | Participating         |
| FIRM STATUS              | Revised               |
| LOMC(S)                  | 0                     |
| POLICIES                 | 14                    |
| INSURANCE IN FORCE       | \$3,280,500           |
| # PAID LOSSES            | 23                    |
| TOTAL LOSSES PAID        | \$273,106             |
| CAV                      | 9/18/2013             |
| CAC                      | 9/7/2011              |
| ORDINANCE LEVEL          | D                     |
| ORDINANCE EFFECTIVE DATE | 7/20/1984             |
| CRS RATING               | N/A                   |



# TOWN OF KEENE | ESSEX COUNTY

The Town of Keene should also consult the Ausable River Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- The area where the Ausable River meets Airport Road is heavily eroded with high sediment loads
- In the Town of Keene during heavy rain events, flooding and bank erosion occurs at the confluence of Gulf Brook and the East Branch Ausable River
- Homes, bridges, and roads along Jones Brook and Gulf Brook are frequently flooded
- The Ausable River Association is seeking grant funding for a comprehensive East Branch Ausable River study for river restoration
- The Styles Brook area is vulnerable to flooding and the community requests an updated flood study to assess a misaligned and undersized bridge that causes issues downstream
- Lacey Road Bridge over the East Branch Ausable River was affected by flooding in Hurricane Irene
- The “Neighborhood House,” a senior home in Keene Valley, is an assisted-living facility in a flood-prone area at New York 73 and Country Club Way along the East Branch Ausable River
- Mudslides occurred in 2018 on Cascade Brook, south of Owls Head Road

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Property acquisition beginning in the area near Hurricane Road, where Jones Brook joins Gulf Brook, still has funding needs after coordination with FEMA, the Department of Housing and Urban Development, and NY Rising with the Governor’s Office of Storm Recovery
- Hydrology modeling is being based on 2014 Light Detection and Ranging (LiDAR) data
- The 2011 Essex County Hazard Mitigation Plan describes an action to raise the road height at Hulls Falls Road along the Ausable River, which floods often and is a gauge for flooding around town

| COMMUNITY                | TOWN OF KEENE                                  |
|--------------------------|--|
| POPULATION               | 1,105  |
| FIRM DATE                | 6/5/1985                                       |
| NFIP STATUS              | Participating                                  |
| FIRM STATUS              | All Zone A, C, and X - No Elevation Determined |
| LOMC(S)                  | 2  |
| POLICIES                 | 33   |
| INSURANCE IN FORCE       | \$9,340,100                                    |
| # PAID LOSSES            | 31   |
| TOTAL LOSSES PAID        | \$922,335                                      |
| CAV                      | 9/18/2013                                      |
| CAC                      | 9/28/2011                                      |
| ORDINANCE LEVEL          | D  |
| ORDINANCE EFFECTIVE DATE | 6/5/1985                                       |
| CRS RATING               | N/A  |

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**Mitigation and Risk Reduction Needs:**

- A bridge on 9N needs to be replaced near where Gulf Brook meets the Ausable River
- Gulf Brook could undergo restoration in the next one to three years
- In the next seven years, the Ausable River can be restored with help from the U.S. Fish and Wildlife Service
- In the next 10 years, wetland areas that once surrounded the Marcy Field Airport along the Ausable River should be re-established
- Within the next 15 years, the road at the airport can be raised for improved use in critical and rescue scenarios
- Replace undersized bridges (Lacey Bridge, Beers Bridge, Keene 9N Bridge, and Styles Brook Bridge) along or near the East Branch Ausable River within the next 15 years

**TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:**

- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

# TOWN OF MINERVA | ESSEX COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- The Moxham Pond outlet is an area prioritized for restudy
- A restudy was requested for the Hudson River – starting at the confluence with the Indian River and extending downstream to the Warren County border

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The 2011 Essex County Hazard Mitigation Plan describes an action to carry out drainage improvements and catch basin and culvert installation in the Minerva Lake beach area

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

| COMMUNITY                | TOWN OF MINERVA                                 |
|--------------------------|---|
| POPULATION               | 810   |
| FIRM DATE                | 10/5/1984                                       |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 9   |
| POLICIES                 | 4   |
| INSURANCE IN FORCE       | \$430,300                                       |
| # PAID LOSSES            | 0   |
| TOTAL LOSSES PAID        | \$0   |
| CAV                      | N/A   |
| CAC                      | 7/28/2016                                       |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 10/10/1992                                      |
| CRS RATING               | N/A   |



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# TOWN OF MORIAH | ESSEX COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- A neighboring municipality noted that the William Petro Dam breached when overloaded during Hurricane Irene and caused the collapse of the nearby Broad Street Bridge, resulting in flooding in Moriah. In 2015, a portion of the dam was removed using FEMA Hazard Mitigation Grant Program funds to mitigate the severity and impact of flooding.

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The 2011 Essex County Hazard Mitigation Plan describes an action to replace four culverts at Chipmunk Street, Witherbee Road, and Fairy Lake Road near Route 42, and two culverts on Fisk Road

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

| COMMUNITY                | TOWN OF MORIAH                                  |
|--------------------------|---|
| POPULATION               | 4,800   |
| FIRM DATE                | 9/24/1984                                       |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 1   |
| POLICIES                 | 1   |
| INSURANCE IN FORCE       | \$99,000  |
| # PAID LOSSES            | 0   |
| TOTAL LOSSES PAID        | \$0   |
| CAV                      | N/A   |
| CAC                      | 9/28/2011                                       |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 12/7/2016                                       |
| CRS RATING               | N/A   |

*Note: The Town of Moriah did not provide input during the Discovery process. Hamilton County and neighboring town representatives shared the community's information.*



# TOWN OF NEWCOMB | ESSEX COUNTY

The Town of Newcomb should also consult the Ausable River Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- No needs identified

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The 2011 Essex County Hazard Mitigation Plan describes an action to replace an eight-foot culvert on Goodnow Flow Road

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

| COMMUNITY                | TOWN OF NEWCOMB                                |
|--------------------------|--|
| POPULATION               | 435  |
| FIRM DATE                | 6/5/1985                                       |
| NFIP STATUS              | Participating                                  |
| FIRM STATUS              | All Zone A, C, and X - No Elevation Determined |
| LOMC(S)                  | 15   |
| POLICIES                 | 11   |
| INSURANCE IN FORCE       | \$1,573,000                                    |
| # PAID LOSSES            | 12   |
| TOTAL LOSSES PAID        | \$210,146                                      |
| CAV                      | N/A  |
| CAC                      | 2/16/2011                                      |
| ORDINANCE LEVEL          | D  |
| ORDINANCE EFFECTIVE DATE | 3/26/1993                                      |
| CRS RATING               | N/A  |

*Note: The Town of Newcomb did not provide input during the Discovery process. Essex County and neighboring town representatives shared the community's information.*

# TOWN OF NORTH ELBA | ESSEX COUNTY

The Town of North Elba should also consult the Ausable River and Saranac River Watershed Discovery reports to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Drainage issues exist between Echo Lake and Mirror Lake
- Undersized culverts exist near the Echo Pond outlet
- River Road is often closed due to ice jam flooding along the West Branch Ausable River, especially near its intersection with Deerwood Trail, which requires rerouting of traffic and emergency services

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Many culverts were replaced after Hurricane Irene
- Drainage work is being done on side roads of the Echo Pond outlet
- The 2011 Essex County Hazard Mitigation Plan describes an action to perform stream clearing and replace the Alcohol Brook Bridge and culvert on Adirondack Loj Road

### Mitigation and Risk Reduction Needs:

- A new salt and sand shed is needed to prevent runoff contamination

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

| COMMUNITY                | TOWN OF NORTH ELBA |
|--------------------------|--------------------|
| POPULATION               | 8,955              |
| FIRM DATE                | 8/23/2001          |
| NFIP STATUS              | Participating      |
| FIRM STATUS              | Revised            |
| LOMC(S)                  | 0                  |
| POLICIES                 | 9                  |
| INSURANCE IN FORCE       | \$2,658,300        |
| # PAID LOSSES            | 12                 |
| TOTAL LOSSES PAID        | \$205,800          |
| CAV                      | 6/30/2014          |
| CAC                      | 9/28/2011          |
| ORDINANCE LEVEL          | D                  |
| ORDINANCE EFFECTIVE DATE | 7/20/1979          |
| CRS RATING               | N/A                |



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# TOWN OF NORTH HUDSON | ESSEX COUNTY

The Town of North Hudson should also consult the Ausable River Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- The highest-priority area for restudy is east of Palmer Pond on the Schroon River, where a campground, equestrian center, and brewery are currently being constructed. This area floods, which presents ingress and egress concerns along the road that could be problematic during tourist season. The area is currently within the Special Flood Hazard Area, but the buildings here are not currently in use due to substantial flood damage
- East Mill Brook was highlighted as needing an updated approximate flood study near the Pepper Hollow Road crossing because the bridge had been washed out and has been replaced
- Blue Ridge Road experiences flooding and ice jam-related flooding from The Branch near the confluence with the Schroon River
- Johnson Pond Road experiences flooding from Johnson Pond Brook; it may put a nearby structure at risk
- An unconsolidated and unstable bank exists at Duntley Road, near the Schroon River
- Elk Lake Road near Clear Pond experiences washouts
- There are liquefaction risks between Walker Brook and West Mill Brook near Service Road, as Essex County was noted as an area with earthquake activity
- High winds are another hazard of concern
- Two Ensign Pond Road bridges frequently wash out due to flooding from Black Brook
- The community is interested in digital FIRMs and updated flood maps

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- North Hudson Beach Park has experienced frequent flooding from the Schroon River and has been converted into a ballfield and park
- The 2011 Essex County Hazard Mitigation Plan describes an action to replace culverts on Elk Lake Road

| COMMUNITY                | TOWN OF NORTH HUDSON                           |
|--------------------------|--|
| POPULATION               | 240  |
| FIRM DATE                | 5/15/1985                                      |
| NFIP STATUS              | Participating                                  |
| FIRM STATUS              | All Zone A, C, and X - No Elevation Determined |
| LOMC(S)                  | 1  |
| POLICIES                 | 3  |
| INSURANCE IN FORCE       | \$770,000                                      |
| # PAID LOSSES            | 1  |
| TOTAL LOSSES PAID        | \$36,802                                       |
| CAV                      | N/A  |
| CAC                      | 9/29/2011                                      |
| ORDINANCE LEVEL          | D  |
| ORDINANCE EFFECTIVE DATE | 12/17/1992                                     |
| CRS RATING               | N/A  |

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**Mitigation and Risk Reduction Needs:**

- Perform property buyouts within the floodplain
- Replace bridges with damage and flood risk
- Within one to three years, create a communication plan to notify campground tourists in the event of flooding
- In the next seven years, assessments of flood risk at dams could be completed
- In the next 15 years, two bridges at Ensign Pond Road that experience flooding may be elevated and their risk may be mitigated

**TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:**

- The community requested Earthquake ShakeMaps
- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

# TOWN OF SCHROON | ESSEX COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- A detailed study was requested for the Schroon River between the Sawmill Road crossing and Route 9 crossing, where residences along French Road are impacted by inland flooding; heavy rainfall-induced flooding occurs at the Route 9 Dollar General store, and the Route 74 Well House area near the bridge crossing is at low grade and susceptible to flooding
- The Schroon River backs up and causes inland flooding on French Street. Houses are close to the water, and one house was recently raised eight feet
- Old Town Beach has experienced spring snow melt flooding; bathrooms and boats were flooded in 2011, south of the beach near the bandstand
- Alder Meadow Road experiences flooding from the Schroon River in the spring, which cuts off access to about 400 feet of the roadway between Crane Pond Road and Adirondack Road and the east side of town; an approximate study need was identified
- Spring flooding from Alder Creek cuts off access along Alder Meadow Road, Crane Pond Road, and Adirondack Road; an approximate study is needed
- The culvert on Route 9 where it crosses Horseshoe Pond Brook floods during heavy rains. New development along the shore could increase sediment in the brook, which could block the culvert
- Flood mapping needs and flooding concerns were noted in the confluence area of Paradox Creek, Schroon River, and Alder Creek
- Drainage problems occur along Broad Street from Main Street to Leland Street

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- One home near French Road along the Schroon River has been raised eight feet and newer, elevated homes exist along Schroon Lake
- Many people in the community have installed pumps and drains to combat rising groundwater tables
- Warren County has provided funding to reroute water from the Route 9 stormwater detention holding tanks at the Old Town Beach

| COMMUNITY                | TOWN OF SCHROON |
|--------------------------|-----------------|
| POPULATION               | 1,655           |
| FIRM DATE                | 11/16/1995      |
| NFIP STATUS              | Participating   |
| FIRM STATUS              | Revised         |
| LOMC(S)                  | 38              |
| POLICIES                 | 31              |
| INSURANCE IN FORCE       | \$7,626,400     |
| # PAID LOSSES            | 20              |
| TOTAL LOSSES PAID        | \$269,022       |
| CAV                      | 9/22/2016       |
| CAC                      | N/A             |
| ORDINANCE LEVEL          | D               |
| ORDINANCE EFFECTIVE DATE | 5/15/1985       |
| CRS RATING               | N/A             |



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**Mitigation and Risk Reduction Needs:**

- In the next one to three years, additional funds are needed to expand the Warren County water rerouting project to connect the Main Street and Leland Street project to Broad Street. There are currently steep slopes, impervious surface, runoff, and washouts near basins by Woods Lodge and the firehouse
- In the next one to three years, conduct an engineering and planning assessment of problematic flood areas
- In the next one to three years, obtain funding for the old detention ponds between Broad Street and Route 9 to connect to tanks by the beach
- In the next three to seven years, reroute water along the Route 74 Well House at the bridge crossing Schroon River, depending on the results of a restudy
- In the next three to seven years, Alder Meadow Road should be studied and elevated above flood levels for the Schroon River
- Reroute the runoff from Becker Hill that floods Route 9 and/or create a detention pond to slow the flow
- Two houses within the French Road oxbow curve on the Schroon River are potential acquisition projects over the next seven to 15 years

**TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:**

- Obtain assistance in locating funding sources for mitigation projects
- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

# TOWN OF TICONDEROGA | ESSEX COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Old Furnace Road washes out during flood events
- Culvert and road washouts on County Route 56 and Old Chilson Road between Putnam Creek and Wicker Street occurred during Hurricane Irene along Chilson Brook. There is town-wide concern about scour and erosion damage to bridge foundations, footings, and abutments from floodwater flow
- Landslide hazards exist, and slides have occurred near the intersection of County Road 2 and State Route 74
- Undersized culverts were washed out and erosion occurred near Five Mile Creek and Delano Road
- At the wastewater treatment plant on Montcalm Street, though the site is not vulnerable to flooding from the river, the stormwater inflow has increased and the site cannot handle big rain events. Stormwater infiltration and inflow occur, with overflows and bypasses impacting local waterways
- The town would like hydrology and hydraulic studies, which may be of use in creating a separate stormwater system and water drainage regulation
- Across the town, there is scour damage to bridge foundations

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The 2011 Essex County Hazard Mitigation Plan describes an action for the town to enforce new International Building Center seismic ratings and educate contractors about the measure

### Mitigation and Risk Reduction Needs:

- In the next one to three years, the town will use the hydrology and hydraulic study to inform the development of a separate stormwater system, with stormwater drainage regulation
- In the next one to three years, create open space and green spaces
- In the next three to seven years, create a stormwater management district
- In the next three to seven years, repair and enlarge culverts throughout the town
- In the next seven to 15 years, create separate stormwater and sanitary sewer systems with associated regulations
- In the next seven to 15 years, upgrade or replace culverts along Chilson Brook to prevent washout

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Essex County officials requested training from the Adirondack Park Agency, NYSDEC, and the U.S. Army Corps of Engineers (USACE) on permitting, regulations (including NFIP), and enforcement for all communities

| COMMUNITY                | TOWN OF TICONDEROGA |
|--------------------------|---------------------|
| POPULATION               | 5,040               |
| FIRM DATE                | 9/6/1996            |
| NFIP STATUS              | Participating       |
| FIRM STATUS              | Revised             |
| LOMC(S)                  | 11                  |
| POLICIES                 | 7                   |
| INSURANCE IN FORCE       | \$1,068,400         |
| # PAID LOSSES            | 3                   |
| TOTAL LOSSES PAID        | \$41,614            |
| CAV                      | N/A                 |
| CAC                      | 9/29/2011           |
| ORDINANCE LEVEL          | D                   |
| ORDINANCE EFFECTIVE DATE | 5/17/1988           |
| CRS RATING               | N/A                 |



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# TOWN OF ARIETTA | HAMILTON COUNTY

The Town of Arietta should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Salt runoff after its application in winter was a concern prioritized above flooding
- Flooding is not noted as commonly affecting the town, aside from limited instances, and is not considered a hazard of high concern
- Hamilton County stated that a culvert at Wild Road on Piseco Lake has flooding issues and is affected by beaver dams
- The county noted that small rain events can cause greater flooding issues because of the steepness of slopes
- Hamilton County stated that other countywide hazards, such as wildfire, high winds, snow, and ice jams, are of concern

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- No projects identified

### Mitigation and Risk Reduction Needs:

- Mitigation is needed to prevent salt contamination of water bodies in the spring
- Culvert repair and beaver population control is needed off Knox Road at Piseco Lake

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- The county requested FEMA provide a similar presentation during a monthly Board of Supervisors meeting

| COMMUNITY                | TOWN OF ARIETTA                      |
|--------------------------|--------------------------------------|
| POPULATION               | 300                                  |
| FIRM DATE                | N/A                                  |
| NFIP STATUS              | Participating                        |
| FIRM STATUS              | All Zone C and X - No Published FIRM |
| LOMC(S)                  | 0                                    |
| POLICIES                 | 0                                    |
| INSURANCE IN FORCE       | \$0                                  |
| # PAID LOSSES            | 0                                    |
| TOTAL LOSSES PAID        | \$0                                  |
| CAV                      | N/A                                  |
| CAC                      | N/A                                  |
| ORDINANCE LEVEL          | A                                    |
| ORDINANCE EFFECTIVE DATE | 2/14/1985                            |
| CRS RATING               | N/A                                  |

# TOWN OF INDIAN LAKE | HAMILTON COUNTY

The Town of Indian Lake should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- A restudy was requested for Indian Lake, Adirondack Lake, and Round Pond Brook; LOMAs in these areas indicate need for updated flood study
- Flooding and ice jams are frequent along the Cedar River, from Sprague Brook to the Benton Road area
- A vulnerable culvert exists at Beaver Meadow Brook and Parkerville Road
- Moderate rainfall can cause issues due to the steepness of slopes
- Floodplain map inaccuracies may exist near Lake Abanakee and East Main Street, where successful Letters of Map Amendment were identified
- Hamilton County officials stated that other countywide hazards include wildfire, high winds, snow, and ice jams

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- A culvert at Beaver Meadow Brook was rebuilt

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- County officials asked FEMA to give a short presentation about Risk MAP during a monthly Board of Supervisors meeting

| COMMUNITY                | TOWN OF INDIAN LAKE                             |
|--------------------------|---|
| POPULATION               | 1,350   |
| FIRM DATE                | 12/4/1985                                       |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 22  |
| POLICIES                 | 13  |
| INSURANCE IN FORCE       | \$3,645,100                                     |
| # PAID LOSSES            | 3   |
| TOTAL LOSSES PAID        | \$58,620  |
| CAV                      | 2/19/2009                                       |
| CAC                      | N/A   |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 1/12/1987                                       |
| CRS RATING               | N/A   |

*Note: The Town of Indian Lake did not provide input during the Discovery process. Hamilton County and neighboring town representatives shared the community's information.*

# TOWN OF LAKE PLEASANT | HAMILTON COUNTY

The Town of Lake Pleasant should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Need new updated approximate flood study to accurately map the flood hazard area around Lake Pleasant
- In a low-elevation shoreline of Sacandaga Lake, near Moffit Beach Road and the Moffit Beach State Campground, a trailer park is often evacuated due to flooding from the Sacandaga Lake and/or Echo Lake. This area should be prioritized, as isolated residents must be evacuated when it floods
- Hamilton County officials stated that countywide hazards include wildfire, high winds, snow, and ice jams

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- No projects identified

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- County officials asked FEMA to give a short presentation about Risk MAP during a monthly Board of Supervisors meeting

| COMMUNITY                | TOWN OF LAKE PLEASANT                |
|--------------------------|--------------------------------------|
| POPULATION               | 780                                  |
| FIRM DATE                | N/A                                  |
| NFIP STATUS              | Participating                        |
| FIRM STATUS              | All Zone C and X - No Published FIRM |
| LOMC(S)                  | 0                                    |
| POLICIES                 | 3                                    |
| INSURANCE IN FORCE       | \$980,000                            |
| # PAID LOSSES            | 0                                    |
| TOTAL LOSSES PAID        | \$0                                  |
| CAV                      | 10/11/2012                           |
| CAC                      | N/A                                  |
| ORDINANCE LEVEL          | A                                    |
| ORDINANCE EFFECTIVE DATE | 2/14/1985                            |
| CRS RATING               | N/A                                  |

*Note: The Town of Lake Pleasant did not provide input during the Discovery process. Hamilton County and neighboring town representatives shared the community's information.*



# TOWN OF LONG LAKE | HAMILTON COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Hamilton County stated that countywide hazards include wildfire, high winds, snow, and ice jams

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- No projects identified

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- The county requested FEMA give a short presentation about Risk MAP during a monthly Board of Supervisors meeting

| COMMUNITY                | TOWN OF LONG LAKE                               |
|--------------------------|---|
| POPULATION               | 710   |
| FIRM DATE                | 9/24/1984                                       |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 22  |
| POLICIES                 | 33  |
| INSURANCE IN FORCE       | \$5,930,700                                     |
| # PAID LOSSES            | 8   |
| TOTAL LOSSES PAID        | \$242,068                                       |
| CAV                      | 7/30/2008                                       |
| CAC                      | N/A   |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 3/17/1993                                       |
| CRS RATING               | N/A   |

*Note: The Town of Long Lake did not provide input during the Discovery process. Hamilton County and neighboring town representatives shared the community's information.*

# VILLAGE OF SPECULATOR | HAMILTON COUNTY

The Village of Speculator should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- In a low-elevation shoreline of Sacandaga Lake, near Moffit Beach Road and the Moffit Beach State Campground, a trailer park is often evacuated due to flooding from the Sacandaga Lake and/or Echo Lake. This area should be prioritized, as isolated residents must be evacuated when it floods
- Flooding issues occur on Route 30 from beaver dams on Kunjamuk Bay, Whitaker Lake Outlet, Whiskey Brook, and Hatchery Brook
- Elm Lake Road, also known as “Long Level Road,” leads to an outdoor recreation camp; the road can be overtopped by minor flooding from the Kunjamuk River, which washes out culverts. This area also experiences beaver dam-related flooding that washes out culverts
- Need a new flood study to accurately map flood risks around the Lake Pleasant shoreline
- New culverts were recently constructed along Elm Lake Road, north of Elm Lake, but the road still washes out sometimes in this area from tributaries of the Kunjamuk River
- Hamilton County officials stated that other countywide hazards include wildfire, high winds, snow, and ice jams

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- New culverts were placed by Elm Lake Road, where they were washed out previously
- A second culvert that was put in an area of flooding and multiple washouts along Elm Lake Road in the northern end of the village has not completely mitigated storm flooding problems

### Mitigation and Risk Reduction Needs:

- The NYS Department of Environmental Conservation has flagged the crossing of Route 30 over Hatchery Brook for replacement to meet their requirements by increasing the culvert size to nine feet

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- County officials asked FEMA to give a short similar presentation during their monthly Board of Supervisors meeting

| COMMUNITY                | VILLAGE OF SPECULATOR                           |
|--------------------------|---|
| POPULATION               | 325   |
| FIRM DATE                | 2/6/1984  |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 3   |
| POLICIES                 | 4   |
| INSURANCE IN FORCE       | \$766,900                                       |
| # PAID LOSSES            | 0   |
| TOTAL LOSSES PAID        | \$0   |
| CAV                      | 1/19/2010                                       |
| CAC                      | N/A   |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 2/6/1984  |
| CRS RATING               | N/A   |



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# TOWN OF WELLS | HAMILTON COUNTY

The Town of Wells should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- The Town of Arietta, on behalf of the Town of Wells, noted that occasional flooding, as well as ice jams, occurs in the Town of Wells near the border between the two towns
- Elbow Creek, above Lake Algonquin, needs a new approximate study in response to concerns about flooding during heavy rain storms
- Hamilton County officials stated that other countywide hazards include wildfire, high winds, snow, and ice jams

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- No projects identified

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- County officials asked FEMA to give a short similar presentation during their monthly Board of Supervisors meeting

| COMMUNITY                | TOWN OF WELLS                                   |
|--------------------------|---|
| POPULATION               | 675   |
| FIRM DATE                | 6/3/1986  |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 26  |
| POLICIES                 | 10  |
| INSURANCE IN FORCE       | \$1,485,500                                     |
| # PAID LOSSES            | 0   |
| TOTAL LOSSES PAID        | \$0   |
| CAV                      | 2/17/2015                                       |
| CAC                      | N/A   |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 6/3/1986  |
| CRS RATING               | N/A   |

*Note: The Town of Wells did not provide input during the Discovery process. Hamilton County and neighboring town representatives shared the community's information.*

# TOWN OF DAY | SARATOGA COUNTY

The Town of Day should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- No needs identified

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The 2011 Saratoga Hazard Mitigation Plan describes an action to create, enhance, and maintain mutual aid agreements with neighboring communities

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- County officials stated that guidance on leveraging mitigation and other plans and strategies could be useful countywide

| COMMUNITY                | TOWN OF DAY                       |
|--------------------------|-----------------------------------|
| POPULATION               | 860                               |
| FIRM DATE                | 8/16/1995                         |
| NFIP STATUS              | Participating                     |
| FIRM STATUS              | All Zone C and X - Published FIRM |
| LOMC(S)                  | 0                                 |
| POLICIES                 | 1                                 |
| INSURANCE IN FORCE       | \$350,000                         |
| # PAID LOSSES            | 0                                 |
| TOTAL LOSSES PAID        | \$0                               |
| CAV                      | N/A                               |
| CAC                      | N/A                               |
| ORDINANCE LEVEL          | A                                 |
| ORDINANCE EFFECTIVE DATE | 6/22/1984                         |
| CRS RATING               | N/A                               |

*Note: The Town of Day did not provide input during the Discovery process. Saratoga County and neighboring town representatives shared the community's information.*



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# TOWN OF HADLEY | SARATOGA COUNTY

The Town of Hadley should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- An updated approximate study was requested along the Hudson River near its confluence with Wolf Creek, where the effective Special Flood Hazard Area (SFHA) in this area is too large, according to residents (area is on the boundaries of the Town of Lake Luzerne)
- The Rockwell Street bridge crossing the Hudson River at the border of Lake Luzerne and Hadley experiences flooding
- The town has hydropower dams on the Sacandaga River (Stewarts Bridge Dam on County Road 7 near Antone Mountain Road and Conklingville Dam near the confluence with Bell Brook and off of County Road 8) but no levees or smaller dams; the town did not express high concerns about flood risk in relation to such structures
- Eddy Road and Tower Road experience flooding from Wolf Creek
- Snow is a hazard of significant concern

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Culvert replacements and repair work are ongoing
- A flash flood committee was formed
- The 2011 Saratoga Hazard Mitigation Plan describes action to enhance the county's resilience to severe storms (including winter storms) by joining the National Weather Service's "Storm Ready" program

### Mitigation and Risk Reduction Needs:

- Additional culvert replacements and repairs are needed

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- County officials stated that guidance on leveraging Hazard Mitigation Plans and other plans and strategies could be useful countywide

| COMMUNITY                | TOWN OF HADLEY |
|--------------------------|----------------|
| POPULATION               | 2,050          |
| FIRM DATE                | 8/16/1995      |
| NFIP STATUS              | Participating  |
| FIRM STATUS              | Revised        |
| LOMC(S)                  | 3              |
| POLICIES                 | 7              |
| INSURANCE IN FORCE       | \$1,957,500    |
| # PAID LOSSES            | 2              |
| TOTAL LOSSES PAID        | \$42,035       |
| CAV                      | 8/2/2016       |
| CAC                      | N/A            |
| ORDINANCE LEVEL          | D              |
| ORDINANCE EFFECTIVE DATE | 4/6/1995       |
| CRS RATING               | N/A            |



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# TOWN OF BOLTON | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Flooding occurs on Lakeshore Drive, from Northwest Bay, where it approaches the foot of Tongue Mountain, along Wardsboro Road into Hague
- Schroon River Road experiences flooding from the Schroon River
- Trout Falls Road and Padanarum Road experience flooding from Indian Pond and nearby ponds and streams, and these waterbodies are known to experience issues related to beaver dams
- Round Pond Brook is considered an environmentally sensitive wetland area of priority for protection
- County Road 11 has a high elevation but experienced washouts from the Schroon River and Alder Brook in 2005 and 2011
- If breached, Edgecomb Pond Dam would flood the fire department, residences, and the transfer station; Edgecomb Pond has flooded
- Privately owned dams exist in the town and could be a concern
- Temporary bridges are currently preferred as a less expensive working alternative to culverts or longer bridges

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Culverts are replaced as needed, with bottomless culverts preferred
- The 2016 Warren County Hazard Mitigation Plan describes an action to install an auxiliary spillway for Edgecomb Pond Dam, which provides water to the hamlet in the built-up area. Drainage easements have been acquired in the area where the new spillway would be built
- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide

### Mitigation and Risk Reduction Needs:

- Edgecomb Pond Dam could be further mitigated against risk

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- No needs identified

| COMMUNITY                | TOWN OF BOLTON |
|--------------------------|----------------|
| POPULATION               | 2,325          |
| FIRM DATE                | 8/16/1996      |
| NFIP STATUS              | Participating  |
| FIRM STATUS              | Revised        |
| LOMC(S)                  | 10             |
| POLICIES                 | 10             |
| INSURANCE IN FORCE       | \$2,601,800    |
| # PAID LOSSES            | 5              |
| TOTAL LOSSES PAID        | \$40,327       |
| CAV                      | 6/6/2013       |
| CAC                      | 10/8/2015      |
| ORDINANCE LEVEL          | D              |
| ORDINANCE EFFECTIVE DATE | 7/3/1986       |
| CRS RATING               | N/A            |



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# TOWN OF CHESTER | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Warren County noted that beaver dams and associated flooding occurs at Perry Road from an unnamed tributary to the Hudson River; at Hardscrabble Road from a tributary of Satterly Creek; Landfill Road from an intersecting tributary of the Schroom River; at Potter Brook Road from Potter Brook; and at Stock Farm Road from Friends Lake and Tripp Pond
- Warren County noted that ice jams and associated flooding occur where the Hudson River converges with the following streams: Raymond Brook, Cole Road/North Creek, Collins Brook, and Ryan Brook
- Areas of priority for new studies and flood maps are Schroom Lake, the Schroom River, and the Hudson River, as noted by the county
- Ice jams and associated flooding identified near the confluence of the Hudson River and North Creek
- The county described high winds and snow as other hazards of concern

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Culvert replacements have been completed on various roads in the town
- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes an action to complete one mile of roadway elevation on Old River Road

### Mitigation and Risk Reduction Needs:

- Open space should be preserved

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- No needs identified

| COMMUNITY                | TOWN OF CHESTER                                 |
|--------------------------|---|
| POPULATION               | 3,355   |
| FIRM DATE                | 6/5/1985  |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 39  |
| POLICIES                 | 25  |
| INSURANCE IN FORCE       | \$5,668,900                                     |
| # PAID LOSSES            | 28  |
| TOTAL LOSSES PAID        | \$92,183  |
| CAV                      | 10/13/2010                                      |
| CAC                      | 7/13/2011                                       |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 7/11/2017                                       |
| CRS RATING               | N/A   |



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# TOWN OF HAGUE | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Officials from the Town of Bolton noted that Wardsboro Road, leading into the Town of Hague, experiences flooding from Northwest Bay Brook

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes an action to remove vegetation from brook beds at the intersection of all bridges

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- No needs identified

| COMMUNITY                | TOWN OF HAGUE |
|--------------------------|---------------|
| POPULATION               | 670           |
| FIRM DATE                | 9/29/1996     |
| NFIP STATUS              | Participating |
| FIRM STATUS              | Revised       |
| LOMC(S)                  | 4             |
| POLICIES                 | 10            |
| INSURANCE IN FORCE       | \$2,339,700   |
| # PAID LOSSES            | 1             |
| TOTAL LOSSES PAID        | \$8,021       |
| CAV                      | 10/1/2010     |
| CAC                      | 8/28/1995     |
| ORDINANCE LEVEL          | D             |
| ORDINANCE EFFECTIVE DATE | 5/15/1985     |
| CRS RATING               | N/A           |



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# TOWN OF HORICON | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Warren County Emergency Management requested an updated approximate flood study along the Schroon River throughout the county
- Brant Lake experiences impacts from beaver dams upstream and downstream

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- A dam previously classified as high hazard has been reclassified with a lower risk class
- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes an action to install a lake level control system and other surface improvements at Upper Brant Lake Dam

### Mitigation and Risk Reduction Needs:

- Install side-by-side culverts by Ernest Smith Road, across from Schroon Lake
- Update the Smith Road crossing

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- No needs identified

| COMMUNITY                | TOWN OF HORICON                                 |
|--------------------------|---|
| POPULATION               | 1,390   |
| FIRM DATE                | 2/15/1985                                       |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 11  |
| POLICIES                 | 19  |
| INSURANCE IN FORCE       | \$4,509,500                                     |
| # PAID LOSSES            | 6   |
| TOTAL LOSSES PAID        | \$104,431                                       |
| CAV                      | 4/27/2016                                       |
| CAC                      | 7/13/2011                                       |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 4/20/1989                                       |
| CRS RATING               | N/A   |



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# TOWN OF JOHNSBURG | WARREN COUNTY

The Town of Johnsburg should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Need an updated approximate study along the entire length of the Hudson River from the intersection of 13th Lake Road and Hudson River in the Town of Johnsburg to the intersection of Warren Street and Hudson River in the City of Glens Falls, a portion of which is outside the Upper Hudson Watershed
- The community requests a new approximate flood study along the Balm of Gilead Brook from the confluence with the Hudson River to the upstream crossing at Barton Mines Road
- Common sources for seasonal ice jams and associated flooding include the Hudson River, specifically at the confluences with Mill Creek and 13th Brook
- Recent hurricanes have had large flood impacts
- Warren County noted that beaver dam-associated flooding is a concern throughout the area, and specifically indicated flooding along Austin Pond Road, which is adjacent to Austin Pond and Johnson Brook
- County officials noted that ice jams affect the railroad, the rail station (near Ski Bowl Road and North Creek), and the general area of the Hamlet of North Creek, and occur along the Hudson River at the confluences with Collins Brook and Johnson Brook
- The county attributed significant annual damage throughout the town to an abundance of dirt roads, antiquated infrastructure near streams, and topography favorable to extreme runoff
- Warren County noted flood concerns along Roaring Brook and Baker Brook, which are downstream of an earthen irrigation dam owned by the Gore Mountain Ski Center
- The county reported that an existing high-hazard dam at Garnet Lake causes flooding and is in need of a significant amount of repair
- Concern with flooding on North Creek if Windover Lake Dam ever breached

| COMMUNITY                | TOWN OF JOHNSBURG                               |
|--------------------------|---|
| POPULATION               | 2,395   |
| FIRM DATE                | 5/1/1985  |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 11  |
| POLICIES                 | 5   |
| INSURANCE IN FORCE       | \$1,857,000                                     |
| # PAID LOSSES            | 3   |
| TOTAL LOSSES PAID        | \$56,869  |
| CAV                      | 4/28/2015                                       |
| CAC                      | N/A   |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 4/14/1987                                       |
| CRS RATING               | N/A   |



---

## **HAZARD MITIGATION ACTIONS IDENTIFIED:**

### **Planned, Completed, or Ongoing Projects:**

- There are generally ongoing bridge and culvert replacements and repairs
- The county is assessing critical facilities in the 1-percent- annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes an action to notify and provide needed support to the facility managers and operators of critical facilities in the floodplain, as well as evaluating the facility's flood vulnerability and identifying feasible mitigation options

### **Mitigation and Risk Reduction Needs:**

- Replace the bridge at Harrington Road and Claude Straight Road
- Need to repair and replace culverts at locations along Hudson Street, Barton Mines Road, and Crane Mountain Road
- Restore open space and streams throughout the town

## **TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:**

- No needs identified

# TOWN OF LAKE GEORGE | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- An updated approximate study was requested on a tributary to the Schroon River, from the East Schroon River Road crossing to the main channel confluence where the culvert is regularly washed out
- The town prioritized English Brook for restudy
- Flooding occurs on roads along the Schroon River
- The Lake George Riverview Campground is near a Special Flood Hazard Area
- The Lake George Escape campground experiences flooding from the Schroon River

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The town received a grant to identify potential hazardous flood areas, deltas, and previous road blow-outs
- The NYS Department of Transportation is replacing bridges and repairing culverts along Route 9 near English Brook
- The local Soil and Water Conservation District completed stream restoration activities along English Brook
- The town has been awarded \$150,000 to retrofit the central stormwater system and incorporate tactics to reduce erosion and sediment
- The county is assessing critical facilities in the 1-percent- annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan includes an action to develop a Flood Management Plan for the town

### Mitigation and Risk Reduction Needs:

- The community expressed interest in having a townwide flood management plan
- Problematic beaver dams need to be addressed
- Complete a sub-watershed assessment for Diamond Point Road and Truesdale Hill Road
- Shore up a dam for which a NYS Department of Environmental Conservation permit has been received

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Training and flyers for the National Flood Insurance Program targeted toward homeowners and campgrounds would help the town share information about flood zones and the benefits of building with freeboard

| COMMUNITY                | TOWN OF LAKE GEORGE |
|--------------------------|---------------------|
| POPULATION               | 3,515               |
| FIRM DATE                | 8/16/1996           |
| NFIP STATUS              | Participating       |
| FIRM STATUS              | Revised             |
| LOMC(S)                  | 9                   |
| POLICIES                 | 8                   |
| INSURANCE IN FORCE       | \$1,705,000         |
| # PAID LOSSES            | 6                   |
| TOTAL LOSSES PAID        | \$54,722            |
| CAV                      | 9/10/2015           |
| CAC                      | N/A                 |
| ORDINANCE LEVEL          | D                   |
| ORDINANCE EFFECTIVE DATE | 4/30/1986           |
| CRS RATING               | N/A                 |



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# TOWN OF LAKE LUZERNE | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- An updated approximate study is needed along the Hudson River, near its confluence with Wolf Creek where the effective Special Flood Hazard Area in this area is too large, according to residents (area is on border with Town of Hadley)
- Beaver dams can cause flooding along Main Lake, Second Lake, and the Hudson River
- Glens Falls Mountain Road can be flooded from Schaeffers Brook, and Beartown Road can be flooded from either Schaeffers Brook or Anderson Brook. The county noted that beaver dam flooding occurs in these areas
- Updated approximate study request for Stewart Brook upstream of Fourth Lake between Potash and Old Stage Roads
- Stewart Brook can cause flooding near Old Stage Road, Potash Road, and Dunkley Road
- The Hudson River can be a source of flooding for the area around Hartman Loop and the bridge on Rockwell Street, where Lake Luzerne and Hadley meet
- Warren County noted that Conklingville Dam and Stewarts Bridge Dam along the Sacandaga River experience flooding, overtopping, and debris risks
- County officials requested new studies and flood maps along the Hudson River
- There was a request for an updated approximate study along Stewart Brook upstream of Fourth Lake, which experiences flooding along Potash Road and Old Stage Road

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes an action to update “Flood Damage Prevention Local Law #1 of 1987,” and consider including a provision to ask for assessment relief

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- No needs identified

| COMMUNITY                | TOWN OF LAKE LUZERNE |
|--------------------------|----------------------|
| POPULATION               | 3,350                |
| FIRM DATE                | 5/1/1984             |
| NFIP STATUS              | Participating        |
| FIRM STATUS              | Original             |
| LOMC(S)                  | 14                   |
| POLICIES                 | 43                   |
| INSURANCE IN FORCE       | \$7,895,800          |
| # PAID LOSSES            | 18                   |
| TOTAL LOSSES PAID        | \$756,405            |
| CAV                      | 9/30/2008            |
| CAC                      | 7/12/2011            |
| ORDINANCE LEVEL          | D                    |
| ORDINANCE EFFECTIVE DATE | 4/27/1987            |
| CRS RATING               | N/A                  |



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# TOWN OF QUEENSBURY | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Concerns were raised regarding undersized culverts along West Mountain Road for Halfway Creek and Clendon Brook, which are downstream of dams
- A wetland pond area is adjacent to significant development
- Six Flags Park, at 89 Six Flags Drive, is a developed area that is prioritized for protection, which features nearby streams connected to Rush Pond and Glen Lake
- Halfway Brook is a potential flood source; bridges and culverts had to be retrofitted to increase capacity
- The Halfway Brook Corridor from Old Forge to Ridge Road could use updated topography
- New flood studies and Flood Insurance Rate Maps are requested
- Some areas currently mapped in the Special Flood Hazard Area are too high to actually be at risk of flooding and should be reanalyzed, specifically along Glen Lake in the area of Ash Drive and Canterbury Drive, where it crosses a stream
- A restudy was requested for Halfway Creek, west of Ridge Road and Glen Lake (these are outside the project area)

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Culverts have been upgraded and improved in areas that experienced flooding and/or road washouts
- Retention basins for stormwater were developed to minimize roadway and property damage
- Bridges and culverts were remediated and/or increased to reduce flooding at Halfway Brook
- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes an action to conduct GIS mapping of all culverts, including details on culvert size, age, construction type, etc.

### Mitigation and Risk Reduction Needs:

- No needs identified

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- No needs identified

| COMMUNITY                | TOWN OF QUEENSBURY |
|--------------------------|--------------------|
| POPULATION               | 27,900             |
| FIRM DATE                | 8/16/1996          |
| NFIP STATUS              | Participating      |
| FIRM STATUS              | Revised            |
| LOMC(S)                  | 47                 |
| POLICIES                 | 55                 |
| INSURANCE IN FORCE       | \$15,453,300       |
| # PAID LOSSES            | 43                 |
| TOTAL LOSSES PAID        | \$1,259,705        |
| CAV                      | 5/6/2014           |
| CAC                      | N/A                |
| ORDINANCE LEVEL          | D                  |
| ORDINANCE EFFECTIVE DATE | 7/16/1984          |
| CRS RATING               | N/A                |



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# TOWN OF STONY CREEK | WARREN COUNTY

The Town of Stony Creek should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Tucker Road is affected by ice jams on Twin Brooks and Kidder Brook, and Roaring Branch Road is affected by ice jams on Roaring Branch
- Van Auken Road has been washed out where it crosses Van Auken Brook
- States Road East was taken out by erosion where it crosses Stony Creek, but it was rebuilt safer with an enlarged culvert
- A vulnerable stone wall bridge on Roaring Branch Road, where it crosses Roaring Branch, would strand a populated area if the bridge jammed
- Flooding occurs on Stony Creek, Roaring Branch, the Hudson River, and other small tributaries
- A restudy of Halfway Brook along Harrisburg Road was requested, as the removal of a dam near Harrisburg Lake may have affected the brook. The removal of this dam is considered to negatively affect lakeside property owners
- A study was requested for the hamlet area, where Roaring Branch meets Stony Creek, as it has a higher amount of residential properties
- Town and county highways, the library, residences, and a resort business that is the largest employer in town are considered the highest priorities to protect
- A restudy was requested for States Road East, where it crosses Stony Creek, to determine whether culverts are sufficient in storm events
- Additional hazards of concern include wildfire, high winds, snow, and earthquakes
- Concern with beaver dams and associated flooding along Wolf Pond Road where it crosses Stony Creek
- Concern with flooding at confluence with Van Auken Brook associated with ice jams
- Concern with flooding along Roaring Branch upstream of Stony Creek associated with ice jams, Roaring Branch Road bridge closure would cut off residents

| COMMUNITY                | TOWN OF STONY CREEK                             |
|--------------------------|---|
| POPULATION               | 680   |
| FIRM DATE                | 8/24/1984                                       |
| NFIP STATUS              | Participating                                   |
| FIRM STATUS              | All Zone A, C, and X - No Elevations Determined |
| LOMC(S)                  | 3   |
| POLICIES                 | 0   |
| INSURANCE IN FORCE       | \$0   |
| # PAID LOSSES            | 1   |
| TOTAL LOSSES PAID        | \$2,355   |
| CAV                      | N/A   |
| CAC                      | 6/16/1992                                       |
| ORDINANCE LEVEL          | D   |
| ORDINANCE EFFECTIVE DATE | 4/8/1996  |
| CRS RATING               | N/A   |

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## **HAZARD MITIGATION ACTIONS IDENTIFIED:**

### **Planned, Completed, or Ongoing Projects:**

- Culvert replacements and repair work are ongoing through the town and county highway departments
- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes upgrades to undersized culverts on Hildebrandt Road, Fodder Road, Van Auken Road, States Road East, Louis Waite Road, and Roaring Branch Road

### **Mitigation and Risk Reduction Needs:**

- In the next one to three years, enlarge the culverts on Van Auken Road and conduct a stormwater study
- In the next three to seven years, two brook crossings by Van Auken Road could be eliminated or moved to avoid erosion from flooding and the stone wall and bridge on Roaring Branch Road can be replaced and repaired
- In the next three to seven years, relocate the library to less hazard-prone real estate so it can act as a community center
- In the next seven to 15 years, establish a sewer and water treatment system based on results of a study

## **TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:**

- Federal funding and technical assistance for climate adaptation was discussed



# TOWN OF THURMAN | WARREN COUNTY

The Town of Thurman should also consult the Sacandaga Watershed Discovery report to review the Recommendations for Future Risk MAP Project Scope, if available.

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- Flooding from Patterson Brook affects Valley Road and Dippikill Road, with the most frequent flooding from the Hudson River on River Road and Route 418
- The Hudson River can flood Golf Course Extension Road in Warrensburg across from Mosher Lane and Elm Drive
- A dam breach affected every crossing over the Hudson River during Memorial Day weekend 2011. All culverts washed out across seven to 10 dams and 10 acres
- In the area where Number 26 Brook and Glen Creek meet, a culvert near Dippikill Road goes out once every three years due to spring runoff
- On Ski Hi Road and Putnam Cross Road, a culvert was taken out due to spring runoff and beaver dam failure on Glen Creek
- A section of River Road, along the Hudson River and adjacent to its convergence with Millington Brook, must frequently be closed due to ice jams
- Repeated and extensive ice jams and associated flooding at the Route 418 crossing over the Hudson River
- Cameron Road experiences flooding from the Hudson River near the confluence with Number Nine Brook
- Bridge crossings at Stoney Creek Road and Cameron Road, over Number Nine Brook, experience backwater flooding from the Hudson River. The area on Number Nine Brook near the confluence with the Hudson River was requested for restudy

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Wolf Pond had twin culverts replaced
- Twin culverts were replaced on Dippikill Road
- The town bought a new generator to run water pumps for the new alternative water system. The town can now act as a shelter in case of emergencies
- Water pumps for an alternative water system were installed in case of emergency
- Warren County is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide

| COMMUNITY                | TOWN OF THURMAN |
|--------------------------|-----------------|
| POPULATION               | 1,200           |
| FIRM DATE                | 8/19/1986       |
| NFIP STATUS              | Participating   |
| FIRM STATUS              | Original        |
| LOMC(S)                  | 0               |
| POLICIES                 | 4               |
| INSURANCE IN FORCE       | \$910,000       |
| # PAID LOSSES            | 4               |
| TOTAL LOSSES PAID        | \$85,530        |
| CAV                      | 6/23/1993       |
| CAC                      | 4/27/2017       |
| ORDINANCE LEVEL          | D               |
| ORDINANCE EFFECTIVE DATE | 8/19/1986       |
| CRS RATING               | N/A             |

- 
- The 2016 Warren County Hazard Mitigation Plan indicates that the town will address drainage and flooding issues by installing bottomless culverts or other drainage improvements at locations including Wolf Pond Road, Dippikill Road near Parker Cross Road (Patterson Brook), River Road at Huber Road, and Athol Road near Cameron Road

**Mitigation and Risk Reduction Needs:**

- Complete a model to project two-foot Base Flood Elevation for GIS and Reverse 911 system use
- Create a cost-share program to improve drainage on Glen Athol Road
- General culvert replacement

**TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:**

- Town officials would like to see additional opportunities for inter-agency cooperation between the town and the county

# TOWN OF WARRENSBURG | WARREN COUNTY

## SUMMARY OF MAPPING NEEDS AND HAZARDS IDENTIFIED:

- A need for new detailed flood studies was identified along the Hudson River and the Schroon River
- A hydropower dam was built, which mitigated flooding on the Schroon River and possibly reduced the Special Flood Hazard Area (SFHA)
- Ice jam-induced flooding occurs along the Hudson River from Conin's Golf Resort, at 515 Golf Course Road, to the River Street/State Route 418 bridge crossing
- The Schroon River has not flooded in years and Library Avenue along the Schroon River may no longer be included in the SFHA
- East Kellum Pond Road at Kellum Pond has been washed out, remains damaged, and was identified as needing an updated study
- Residences and camp areas on Forest Lake Road, east of State Route 9, have ingress and egress concerns due to terrain and flooding from Kellum Pond
- Other hazards include windstorms, downed trees, power failure, snow, and ice
- An undersized culvert was identified where Alden Ave first crosses Big Brook
- Repeated and extensive ice jams and associated flooding at the Route 418 crossing over the Hudson River

## HAZARD MITIGATION ACTIONS IDENTIFIED:

### Planned, Completed, or Ongoing Projects:

- Well infrastructure has been improved
- The town firehouse is equipped with a generator and can act as an emergency center
- The county is assessing critical facilities in the 1-percent-annual-chance and 0.2-percent-annual-chance floodplains, countywide
- The 2016 Warren County Hazard Mitigation Plan describes how several culvert improvement projects are under consideration, including enlarging the Cross Road culvert and elevating the roadway and improving culverts at Swan Street

### Mitigation and Risk Reduction Needs:

- Improve ground well infrastructure
- In the next one to three years, prevent ice jams further down the Hudson River

## TRAINING, OUTREACH, AND/OR PLANNING SUPPORT NEEDS IDENTIFIED:

- Guidance or data on identifying areas prone to overtopping or erosion desired

| COMMUNITY                | TOWN OF WARRENSBURG |
|--------------------------|---------------------|
| POPULATION               | 4,095               |
| FIRM DATE                | 3/1/1984            |
| NFIP STATUS              | Participating       |
| FIRM STATUS              | Original            |
| LOMC(S)                  | 4                   |
| POLICIES                 | 21                  |
| INSURANCE IN FORCE       | \$4,779,500         |
| # PAID LOSSES            | 3                   |
| TOTAL LOSSES PAID        | \$11,648            |
| CAV                      | 8/12/2009           |
| CAC                      | N/A                 |
| ORDINANCE LEVEL          | D                   |
| ORDINANCE EFFECTIVE DATE | 7/3/1984            |
| CRS RATING               | N/A                 |



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# RECOMMENDATIONS FOR FUTURE RISK MAP PROJECT SCOPE

The priorities for new or revised floodplain mapping within the Upper Hudson Watershed are a result of this Discovery project, through which FEMA learned what flood risk data and resources are needed to inform local decisions. Pre-Discovery community engagement meetings were held for the Upper Hudson Watershed via webinar from June 11 to 19, 2018. The purpose of the pre-Discovery webinars was to discuss the Discovery process and collect information on community mapping needs, as well as determine if any data that might exist could be incorporated into a possible Risk MAP project. Counties, communities, and other interested stakeholders throughout the watershed area were invited to the webinars.

Following the pre-Discovery engagement meetings, the project team held two Discovery meetings for the stakeholders within the Upper Hudson Watershed on July 25 and 26, 2018. During these meetings, the project team followed up on the information collected during the pre-Discovery webinars and provided an opportunity for the communities and other stakeholders to identify mapping needs. The project team used the information collected throughout the Discovery process, as well as information collected from previous stakeholder engagement meetings, to develop this proposed scope. All study requests will be entered into FEMA's Coordinated Needs Management Strategy (CNMS) database and considered for future floodplain mapping projects.

The Upper Hudson Watershed consists of four counties and 29 communities. Participation in the Discovery process included three counties and 22 communities attending the pre-Discovery webinars, completing the questionnaire, attending the in-person Discovery meetings, or responding to follow-up correspondence.

In the Upper Hudson Watershed, Hamilton, Essex, Saratoga, and Warren counties have not been modernized to a digital countywide product. New detailed studies and updated approximate studies, along with digital countywide maps in all areas, would assist communities in enforcing floodplain regulations and managing development.

The Upper Hudson Watershed study requests listed in the tables below were prioritized based on community interest expressed during the Discovery process, the presence of existing data and flood maps, the proximity to recent or proposed development, and the status of the water body in the CNMS database.

In addition, there was an existing CNMS Area Request for Loon Lake in the Town of Chester, where a property owner contends that the Loon Lake Dam would overtop before the water level reached the 1-percent-annual-chance flood elevation, and therefore the SFHA for the lake is inaccurate.

# DETAILED STUDY REQUESTS

## High Priority Detailed Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different)               | DETAILED LOCATION DESCRIPTION  | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)   |
|---------|--|--|---|--|
| 1       | Town of Warrensburg,<br>Town of Thurman<br>(Warren County)                     | Hudson River – starting from 1,850 feet downstream of confluence with Potter Brook to Route 418 crossing         | 5.9   | <p>A need for new detailed flood studies was identified along the Hudson River. Ice jam-induced flooding occurs along the Hudson River from Conin's Golf Resort, 515 Golf Course Road, to the River Street/State Route 418 bridge crossing, and at Golf Course Extension Road in Warrensburg across from Mosher Lane and Elm Drive. Flooding also occurs on Patterson Brook, Valley Road, and Dippikill Road, with the most frequent flooding on the Hudson River, River Road, and Route 418.</p> <p>Bridge crossings at Stoney Creek Road and Cameron Road, over Number Nine Brook, experience backwater flooding from the Hudson River. The area on Number Nine Brook near the confluence with the Hudson River was also requested for restudy.</p>  |
| 2       | Town of Warrensburg,<br>Town of Bolton, Town of Lake George<br>(Warren County) | Schroon River – starting from the southern border of the Town of Chester to the confluence with the Hudson River | 18.0  | <p>A need for new detailed flood studies was identified along the Schroon River. The flood hazard area between Alden Brook and the Tributary to the Schroon River may be too large.</p> <p>Schroon River Road experiences flooding from the Schroon River and County Road 11 has a high elevation, but experienced wash outs in 2005 and 2011 from the Schroon River and Alder Brook. Seasonal ice jams and associated flooding are a concern at the confluence with the Hudson River.</p> <p>A hydropower dam was built, which mitigated flooding on the Schroon River and possibly reduced the Special Flood Hazard Area.</p> <p>Also, according to the Town of Warrensburg, the Schroon River has not flooded within the town in years and the area along Library Avenue may no longer be in the Special Flood Hazard Area.</p> |



## High Priority Detailed Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different) | DETAILED LOCATION DESCRIPTION  | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)   |
|---------|--|--|---|--|
| 3       | Town of Schroon<br>(Essex County)                                | Schroon River – starting at the US Route 9 crossing to the river’s mouth at Schroon Lake | 7.5   | <p>The Town of Schroon requested a study for the Schroon River between Sawmill Road and Route 9 where residences along French Road are impacted by inland flooding. Heavy rainfall-induced flooding occurs at the Route 9 Dollar General store, and the Route 74 Well House area near the bridge crossing is at low grade and susceptible to flooding.</p> <p>The Schroon River backs up and causes inland flooding on French Street. Houses are close to the water and one house was recently raised eight feet.</p> <p>Alder Meadow Road experiences flooding from the Schroon River in the spring, which cuts off access to about 400 feet of the roadway between Crane Pond Road and Adirondack Road and the east side of town; an approximate study need was identified.</p> <p>The culvert on Route 9 where it crosses Horseshoe Pond Brook floods during heavy rains. New development along the shore could increase sediment in the brook, which could block the culvert.</p> <p>Extending the study downstream to Schroon Lake connects Alder Creek study request, Paradox Creek study request, and Schroon Lake study request.</p> |
| 4       | Town of Lake George<br>(Warren County)                           | Tributary to Schroon River   | 0.4   | <p>An updated study was requested on a tributary to the Schroon River, from the East Schroon River Road crossing to the main channel confluence where the culvert is regularly washed out (CNMS stream is split between detailed and approximate study).</p>   |



## Medium Priority Detailed Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different) | DETAILED LOCATION DESCRIPTION   | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)   |
|---------|--|---|---|--|
| 5       | Town of Schroon<br>(Essex County)                                | Schroon Lake/<br>Schroon River – from the mouth of the Schroon River into Schroon Lake to the southern boundary of Essex County                 | 6.2   | <p>The Schroon River backs up and causes inland flooding on French Street. Houses are close to the water and one house was recently raised eight feet.</p> <p>Old Town Beach has experienced spring snow melt flooding; bathrooms and boats were flooded in 2011, south of the beach near the bandstand.</p>   |
| 6       | Town of Warrensburg,<br>Town of Thurman<br>(Warren County)       | Hudson River – starting from the northern boundary line of the Town of Warrensburg to a point 1,850 feet below the confluence with Potter Brook | 1.7   | <p>A need for new detailed flood studies was identified along the Hudson River.</p> <p>Ice jam-induced flooding occurs along the Hudson River from Conin's Golf Resort, 515 Golf Course Road, to the River Street/State Route 418 bridge crossing</p> <p>Flooding occurs on Patterson Brook, Valley Road, and Dippikill Road, with the most frequent flooding on the Hudson River, River Road, and Route 418.</p> <p>The Hudson River can flood Golf Course Extension Road in Warrensburg across from Mosher Lane and Elm Drive.</p> <p>Bridge crossings at Stoney Creek Road and Cameron Road, over Number Nine Brook, experience backwater flooding from the Hudson River. The area on Number Nine Brook near the confluence with the Hudson River was requested for restudy.</p> <p>This stream length connects a high-priority approximate study request upstream and a high-priority detailed study request downstream.</p> |
| 7       | Town of Schroon<br>(Essex County)                                | Paradox Creek – between Paradox Lake and the confluence with the Schroon River  | 0.9   | <p>Flood mapping needs and flooding concerns were noted in the confluence area of Paradox Creek, Schroon River, and Alder Creek. This stream segment connects Paradox Lake to the Schroon River.</p>   |

No lower priority detailed study requests were identified.

Total Detailed Stream Study Requests: 40.6 miles

# APPROXIMATE STUDY REQUESTS

## Updated Approximate Study Requests

Certain stakeholders requested updated approximate studies for streams within their corporate limits. Typically, all existing approximate studies will be updated in areas receiving new digital mapping. However, since these segments were specifically requested by local stakeholders or were not categorized as “valid” flood studies within CNMS, they are being included for reference.

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different) | DETAILED LOCATION DESCRIPTION  | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)  |
|---------|--|--|---|---|
| 1       | Town of Chester,<br>Town of Johnsburg<br>(Warren County)         | Hudson River – starting at the northern boundary of Warren County, extending downstream to the border of the Town of Warrensburg | 19.8  | Schroon Lake, Schroon River, and Hudson River were identified by Warren County as priorities. The county also noted that ice jams and associated flooding occur at convergences of the Hudson River and the following streams: Raymond Brook, Cole Road/North Creek, Collins Brook, and Ryan Brook. |
| 2       | Town of Horicon,<br>Town of Chester<br>(Warren County)           | Schroon River – from the northern boundary of the Town of Horicon downstream to the border of the Town of Warrensburg            | 14.1  | Warren County Emergency Management noted a need for restudy along entire length of river and identified flooding problems at the confluence with Trout Brook running downstream for approximately one-quarter mile.   |



## Updated Approximate Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different)               | DETAILED LOCATION DESCRIPTION  | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)  |
|---------|--|--|---|---|
| 3       | Town of Stony Creek<br>(Warren County)   | Stony Creek – from a point approximately one-third mile south of the northern boundary of the Town of Stony Creek downstream to the confluence with the Hudson River | 10.7  | <p>An updated approximate study was requested between the confluence of Roaring Branch to confluence with Fly Creek. The Town also requested a restudy of States Road East, crossing Stony Creek, to determine whether culverts are sufficient in storm events. Similarly, the hamlet area around where Roaring Branch meets Stony Creek has a higher amount residential properties.</p> <p>Flooding occurs on Stony Creek, Roaring Branch, the Hudson River, and other small tributaries. Other concerns include beaver dams and associated flooding (along Wolf Pond Road where it crosses Stony Creek); flooding associated with ice jams (at confluence with Van Auken Brook); flooding along Roaring Branch upstream of Stony Creek associated with ice jams. A closure of Roaring Branch Road bridge would cut off residents.</p> |
| 4       | Town of Hadley<br>(Saratoga County)<br>Town of Lake Luzerne<br>(Warren County) | Hudson River – from the northern boundary of the Town of Lake Luzerne downstream to the confluence with Schaeffers Brook   | 9.6   | <p>An updated approximate study was requested along the Hudson River near its confluence with Wolf Creek where the effective Special Flood Hazard Area in this area is too large, according to residents (area is on border with Town of Hadley). The Hudson River can be a source of flooding for the area around Hartman Loop and the bridge on Rockwell Street, where Lake Luzerne and Hadley border, around State Route 9 North.</p>  |
| 5       | Town of Lake Luzerne<br>(Warren County)  | Stewart Brook – from the Potash Road crossing downstream to the mouth at Fourth Lake   | 2.9   | <p>An updated approximate study was requested for Stewart Brook upstream of Fourth Lake between Potash and Old Stage Roads. Stewart Brook can cause flooding near Old Stage Road, Potash Road, and Dunkley Road.</p>  |
| 6       | Town of Warrensburg,<br>Town of Thurman<br>(Warren County)                     | Hudson River – from the Route 418 crossing downstream to the confluence with Number Nine Brook   | 1.8   | <p>Repeated and extensive ice jams and associated flooding occurs at the Route 418 crossing.</p>  |

## Updated Approximate Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different)                   | DETAILED LOCATION DESCRIPTION   | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)  |
|---------|--|---|---|---|
| 7       | Town of North Hudson<br>(Essex County)   | East Mill Brook – from a point approximately 840 feet south of the West Mill Brook Trail crossing downstream to the confluence with the Schroon River | 1.3   | East Mill Brook was highlighted as needing an updated approximate flood study near the Pepper Hollow Road crossing; the bridge has been washed out previously and replaced.   |
| 8       | Town of Lake George<br>(Warren County)   | Tributary to the Schroon River – starting at East Schroon River Road and extending downstream to Interstate 87  | 0.3   | An updated study was requested on a tributary to the Schroon River, from the East Schroon River Road crossing to the main channel confluence where the culvert is regularly washed out (CNMS stream is split between detailed and approximate study). |
| 9       | Town of Indian Lake<br>(Hamilton County)   | Beaver Meadow Brook – starting at the Lake Snow Dam and extending downstream to the confluence with Round Pond Brook                                  | 2.3   | LOMAs along stream indicate need for updated flood study.<br>A vulnerable culvert exists at Beaver Meadow Brook and Parkerville Road.   |
| 10      | Town of Minerva<br>(Essex County)  | Hudson River – starting at the confluence with Indian River and extending downstream to the Warren County border                                      | 12.7  | Stream length connects the Indian River study requests with the Hudson River study requests in Warren County.   |
| 11      | Town of Indian Lake<br>(Hamilton County)   | Indian Lake (Lewey Lake)  | 9.8   | LOMAs around lakeshore indicate need for updated flood study.   |
| 12      | Town of Indian Lake<br>(Hamilton County)   | Round Pond Brook – starting at Kings Flow Dam and extending downstream to confluence with Beaver Meadow Brook   | 5.8   | LOMAs along stream indicate need for updated flood study.   |
| 13      | Town of Thurman,<br>Town of Warrensburg,<br>Town of Stony Creek<br>(Warren County) | Hudson River – starting at confluence with Number Nine Brook and extending downstream to Saratoga County border                                       | 5.8   | A restudy was requested for the Hudson River in Warren County and Saratoga County, Number Nine Brook, and Stony Creek. Flooding occurs on Stony Creek, Roaring Branch, the Hudson River, and other small tributaries.                                 |

## Updated Approximate Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different) | DETAILED LOCATION DESCRIPTION   | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)  |
|---------|--|---|---|---|
| 14      | Town of Indian Lake<br>(Hamilton County)                         | Indian River – beginning at Lake Abanakee and extending downstream to confluence with the Hudson River                                    | 5.2   | Floodplain map inaccuracies may exist near Lake Abanakee and East Main Street, where successful Letters of Map Amendment were identified.   |
| 15      | Town of Schroon<br>(Essex County)                                | Alder Creek – starting at a point approximately 1.2 miles downstream of Alder Pond, and extending downstream to the mouth at Schroon Lake | 3.4   | Spring flooding from Alder Creek cuts off access along Alder Meadow Road, Crane Pond Road, and Adirondack Road; approximate study request was identified.   |
| 16      | Town of Indian Lake<br>(Hamilton County)                         | Lake Abanakee   | 1.9   | LOMAs around lakeshore indicate need for updated flood study; specific request for updated flood study.   |
| 17      | Town of Indian Lake<br>(Hamilton County)                         | Adirondack Lake   | 1.7   | LOMAs around lakeshore indicate need for updated flood study.   |
| 18      | Town of Indian Lake<br>(Hamilton County)                         | Tributary to the Indian River – starting at the Lake Adirondack Dam and extending downstream to the mouth at Lake Abanakee                | 1.7   | Stream length connects Adirondack Lake study, Lake Abanakee study, and Indian River Study.<br>Floodplain map inaccuracies may exist near Lake Abanakee and East Main Street, where successful Letters of Map Amendment were identified. |
| 19      | Town of Minerva<br>(Essex County)                                | Moxham Pond   | 0.7   | The Moxham Pond outlet is an area prioritized for restudy.  |
| 20      | Town of Johnsbury<br>(Warren County)                             | Balm of Gilead Brook – starting at the confluence with the Hudson River and extending upstream 4.4 miles                                  | 4.4   | The Town of Johnsbury requested new approximate study along Balm of Gilead Brook. A new stream study – does not appear in CNMS database.  |
| 21      | Town of Indian Lake<br>(Hamilton County)                         | Cedar River – starting at the Cedar River Dam and extending downstream to the confluence with Nicholas Brook                              | 19.8  | Frequent ice jams and associated flooding along the Cedar River from Sprague Brook to Benton Road are a concern.  |



## Updated Approximate Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different) | DETAILED LOCATION DESCRIPTION  | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)   |
|---------|--|--|---|--|
| 22      | Town of North Hudson,<br>Town of Schroon<br>(Essex County)       | Schroon River – starting at the US Route 9 crossing approximately 1,600 feet north of Courtney Pond in the Town of North Hudson and extending downstream to the intersection of US Route 9 and River Road in the Town of Schroon | 16.3  | <p>The Town of Schroon requested a detailed study on the Schroon River between the Sawmill Crossing and the Route 9 crossing, where residences along French Road are impacted by inland flooding, heavy rainfall-induced flooding occurs at the Route 9 Dollar General store, and the Route 74 Well House area near the bridge crossing is at low grade and susceptible to flooding.</p> <p>The Town of North Hudson shared multiple flood concerns related to existing campground and proposed additional recreational development near the Blue Ridge Road crossing the town of North Hudson. Blue Ridge Road experiences flooding and ice jam-related flooding from The Branch near the confluence with the Schroon River. However, input from the town suggests the highest-priority area for restudy is east of Palmer Pond on the Schroon River, where a campground, equestrian center, and brewery are currently being constructed. This area floods, which presents ingress and egress concerns along the road that could be problematic during tourist season. The area is currently within the Special Flood Hazard Area, but the buildings located here are not currently in use due to substantial flood damage.</p> |
| 23      | Town of Johnsburg<br>(Warren County)                             | Mill Creek – starting at the Town of Johnsburg boundary and extending downstream to the confluence with the Hudson River   | 14.2  | The Town of Johnsburg expressed concern with flood hazards if the Garnett Lake Dam or Mill Creek Dam ever breached. Seasonal ice jams and associated flooding occur at confluence with the Hudson River. LOMAs along stream indicate need for updated flood study.   |
| 24      | Town of Chester<br>(Warren County)                               | Trout Brook – starting at the northern Warren County boundary and extending downstream to the confluence with the Schroon River  | 6.0   | Flood concerns around the confluence with the Schroon River were noted by Warren County Emergency Management.  |
| 25      | Town of Hadley<br>(Saratoga County)                              | Wolf Creek – starting at the confluence with the Hudson River and extending upstream 5.1 miles to the Wolf Creek Dam   | 5.1   | Eddy Road and Tower Road experience flooding from Wolf Creek. A restudy was requested; according to residents the flood hazard area along the Hudson River seems too large.  |



## Updated Approximate Study Requests

| RANKING | COMMUNITY REQUESTING STUDY<br>(and community name, if different) | DETAILED LOCATION DESCRIPTION   | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)  |
|---------|--|---|---|---|
| 26      | Town of Stony Creek<br>(Warren County)                           | Roaring Branch – starting at the confluence with Stony Creek and extending upstream 4.2 miles               | 4.2   | Flooding occurs on Stony Creek, Roaring Branch, the Hudson River, and other small tributaries; the Town of Stony Creek expressed concern with flooding along Roaring Branch at the confluence with Fodder Brook associated with ice jams. Roaring Branch Road bridge closure would cut off residents. |
| 27      | Town of Johnsburg<br>(Warren County)                             | North Creek – starting at the confluence with the Hudson River and extending upstream 3.4 miles             | 3.4   | The Town of Johnsburg expressed concern with flooding if Windover Lake Dam ever breached and concerns with seasonal ice jams and associated flooding. LOMAs along stream indicate need for updated flood study.   |
| 28      | Town of Indian Lake<br>(Hamilton County)                         | Bear Trap Brook – starting at the confluence with the Cedar River and extending upstream 2.1 miles          | 2.1   | Frequent ice jams and associated flooding along the Cedar River from Sprague Brook to Benton Road are a concern.  |
| 29      | Town of Indian Lake<br>(Hamilton County)                         | Tributary to the Cedar River – starting at the confluence with Cedar River and extending upstream 2.1 miles | 2.1   | Frequent ice jams and associated flooding along Cedar River from Sprague Brook to Benton Road are a concern.  |
| 30      | Town of Thurman<br>(Warren County)                               | Number Nine Brook – starting at the confluence with the Hudson River and extending upstream 1.6 miles       | 1.6   | Bridge crossings at Stoney Creek Road and Cameron Road, over Number Nine Brook, experience backwater flooding from the Hudson River. The area on Number Nine Brook near the confluence with the Hudson River was requested for restudy.   |
| 31      | Town of Warrensburg<br>(Warren County)                           | Kellum Pond   | 1.5   | East Kellum Pond Road at Kellum Pond has been washed out, remains damaged, and was identified as needing an updated study.  |
| 32      | Town of Indian Lake<br>(Hamilton County)                         | Sprague Pond  | 1   | Frequent ice jams and associated flooding along the Cedar River from Sprague Brook to Benton Road are a concern.  |

Total Updated Approximate Stream Study Requests: 193.2 miles

# TOTAL WATERSHED STUDY REQUESTS SUMMARY

Total Detailed Stream Study Request Mileage: 40.6 miles

Total Updated Approximate Stream Study Requests: 193.2 miles

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**TOTAL MILEAGE OF ALL REQUESTS: 233.8 miles**

Note: The Town of Ticonderoga requested hydrology and hydraulics studies, but the request was not included in the Recommended Scope of Work because the town's interest in obtaining this data was to inform the creation of stormwater systems and drainage regulations, which is not related to flood risk.





# STUDY REQUESTS OUTSIDE PROJECT AREA

Finally, a number of communities provided study requests for stream segments located outside of the project area. These segments will not be prioritized as part of this effort; however, they will be added to FEMA's CNMS database for inclusion in a future project.

| COMMUNITY REQUESTING STUDY<br>(and community name, if different) | DETAILED LOCATION DESCRIPTION   | MILEAGE OF WATER BODY STUDY REQUEST<br>(within the area of concern) | DESCRIPTION OF REQUEST AND RISK TO ADDRESS<br>(What does the community want? Is there new development nearby?)  |
|--|---|---|---|
| Town of Crown Point<br>(Essex County)                            | Putnam Creek – starting from 8,800 ft (1.7 mi) upstream of Peasley Road to Lake Champlain                     | 10.6  | A need for an updated flood study of Putnam Creek upstream of Lake Champlain to Hamilton Road was identified. The effective Special Flood Hazard Area is considered inaccurate and homes are at high elevations and clear of flood hazards. The Letsonville Road/Old Furnace Road bridge crossing over Paradox Creek is vulnerable to washouts.                               |
| Warren County  | Halfway Creek – starting from 2,500 feet (0.5 mi) upstream of Ridge Rd to 40 feet downstream of Dixon Rd      | 5.1   | A need for an updated flood study along Halfway Creek was identified west of Ridge Road and Glen Lake in the Town of Queensbury.  |
| Warren County  | Glen Lake   | 3.2   | A need for updated flood study along Glen Lake was identified.  |
| Warren County  | Northwest Bay Brook – starting from 755 ft upstream of confluence of Round Pond Brook to inlet of Lake George | 3.1   | A need for updated flood study in this area was identified.   |
| Warren County  | Lake George   | 17.0  | A need for updated flood study in this area was identified.   |
| Town of Lake George<br>(Warren County)                           | English Brook – starting at Lake George and extending upstream 6.6 miles                                      | 6.6   | The Town of Lake George prioritized English Brook for restudy.  |
| Town of Elizabethtown<br>(Essex County)                          | Boquet River  | 8.6   | Seven homes by the east side of Route 10 experience flooding north of the Boquet River and Interstate 9 at Split Rock Falls on the Boquet River floods multiple times annually. The Boquet River in the area of Water Street and the convergence of Branch and Barton Brook was identified for a restudy, with Barton Brook by Noble Terrace being the highest priority area. |



FEMA

**RiskMAP**  
Increasing Resilience Together

# RESOURCES

The following information is intended to support resource sharing between local communities and State and Federal agencies. As one of the outcomes of Risk MAP, communities will have updated flood risk information that can inform other efforts, such as reducing the impact of flooding to structures, lowering flood insurance premiums, planning to mitigate risk and reduce losses, understanding flood hazard data, trainings to support staff, seeking grants for hazard mitigation projects, and learning more about the information used in this report. These resources were gathered in response to requests from communities during the Discovery process.

## REDUCING YOUR COMMUNITY'S FLOOD INSURANCE PREMIUMS

The National Flood Insurance Program (NFIP) aims to reduce the impact of flooding on private and public structures by providing affordable insurance to property owners and by encouraging communities to adopt and enforce floodplain management regulations. These efforts help mitigate the effects of flooding on new and improved structures. Overall, the program reduces the socioeconomic impact of disasters by promoting the purchase and retention of general risk insurance, but also of flood insurance, specifically. All of the communities within the Upper Hudson Watershed participate in the NFIP. The information below can help address any questions community staff and residents may have about flood insurance.

FEMA's FloodSmart website contains publicly available resources that can be used to help communities be better prepared against their flood risk and includes information on:

- How to buy or renew flood insurance;
- Why you need flood insurance;
- How to understand your risk;
- How to reduce your cost; and
- How to file a claim.

Visit FEMA's FloodSmart website to learn more about the NFIP at [www.FloodSmart.gov](http://www.FloodSmart.gov).



## LOWERING YOUR COMMUNITY'S FLOOD INSURANCE PREMIUMS

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS:

1. Reduce flood damage to insurable property;
2. Strengthen and support the insurance aspects of the NFIP; and
3. Encourage a comprehensive approach to floodplain management.

Through the CRS program, participating communities can find success:

- Using stronger regulatory standards;
- Obtaining a heightened awareness and outreach towards flood risk;
- Gaining credibility, recognition, and political support;
- Protecting the environment, increasing quality of life, and supporting resilience;
- Avoiding flood damage and reducing vulnerability;
- Improving capability and organizing internal programs and operations;
- Broadening flood insurance coverage and achieving more accurate ratings; and
- Forging partnerships with State, Federal, or other local agencies, businesses, non-profits, and elected officials.

While no communities within the Upper Hudson Watershed currently participate in the CRS program, as of May 1, 2018, there were 35 communities in New York State that are enrolled in the CRS and are eligible for discounts on flood insurance premiums (FEMA 2018, NFIP Flood Insurance Manual).

For more information about ways to reduce insurance premiums and increase your community's resilience through the CRS program, visit <https://www.fema.gov/national-flood-insurance-program-community-rating-system>.

For additional questions, contact Marianne Luhrs of FEMA Region II at [Marianne.Luhrs@fema.dhs.gov](mailto:Marianne.Luhrs@fema.dhs.gov).

## MITIGATION PLANNING TO REDUCE LOSS OF LIFE AND PROPERTY

Disasters can cause loss of life; damage buildings and infrastructure; and have consequences for a community's economic, social, and environmental well-being. Hazard mitigation is the effort to reduce loss of life and property and is most effective when implemented under a comprehensive, long-term plan. Through the Hazard Mitigation Plan process, communities identify risks and vulnerabilities associated with natural disasters, and develop long-term strategies for protecting people and property from future hazard events. Benefits of mitigation planning include:

- Protecting public safety and preventing loss of life and injury;
- Reducing harm to existing and future development;
- Maintaining community continuity and strengthening the social connections that are essential for recovery;
- Preventing damage to a community's unique economic, cultural, and environmental assets;

- Minimizing operational downtime and accelerating recovery of government and business after disasters;
- Reducing the costs of disaster response and recovery and the exposure of risk for first responders; and
- Helping accomplish other community objectives, such as capital improvements, infrastructure protection, open space preservation, and economic resiliency.

The *Summary of Community Risks Identified* section of this report describes mitigation actions identified by the communities during the Discovery effort. This information can be integrated into local hazard mitigation planning efforts and included, if not already present, in the Hazard Mitigation Plan.

FEMA provides more information about hazard mitigation planning, mitigation planning requirements, Hazard Mitigation Plan status, planning process and mitigation strategy development resources, and contact information to obtain additional guidance and trainings online at <https://www.fema.gov/media-library/assets/documents/30627>.

The New York State Division of Homeland Security and Emergency Services leads hazard mitigation planning efforts in New York State and offers state-wide resources. For more information, visit <http://www.dhSES.ny.gov/recovery/mitigation/planning.cfm>.

In addition, the draft 2019 New York State Hazard Mitigation Plan provides extensive information on hazards and mitigation planning efforts. Access the draft plan online at <http://mitigateny.availabs.org/>.

## UNDERSTANDING THE VALIDITY OF FLOOD HAZARD DATA

To maintain the validity of flood hazard data over time, FEMA assesses its inventory of FIRMs and flood risk studies and determines whether conditions on the ground are still adequately represented on the FIRM panels for that area. When the information on the FIRM does not adequately represent actual conditions, it is considered a “flood hazard mapping need” and a new or updated FEMA flood hazard study for the area may be warranted.

FEMA uses GIS technology and develops policies, requirements, and procedures to coordinate the management of flood hazard mapping needs in the Coordinated Needs Management Strategy (CNMS). Through the CNMS, FEMA identifies and tracks the lifecycle of community mapping needs.

The CNMS is beneficial for community officials to understand the validity of data in order to make informed decisions on community planning and flood mitigation. For a detailed summary of how the CNMS was utilized within the Ausable River Watershed, please reference the *Recommendations for Future Risk MAP Scope* section.

Access the CNMS Data Viewer via <https://msc.fema.gov/cnms/>.

For more information, visit <https://www.fema.gov/coordinated-needs-management-strategy>.



# TRAININGS TO SUPPORT LOCAL MITIGATION EFFORTS

Various Federal and State agencies provide trainings for flood mitigation efforts and hazard mitigation planning. Throughout this Discovery effort, many communities expressed interest in trainings for staff. The resources below can support those needs.

| TRAINING SOURCE | PURPOSE  |
|-----------------|--|
| FEMA            | <p><b>Emergency Management Institute (EMI)</b></p> <p>The EMI develops and delivers emergency management training to enhance the capabilities of State, local, and Tribal government officials to minimize the impact of disasters and emergencies on the public. Particular emphasis is placed on governing doctrine such as the National Response Framework, National Incident Management System, and the National Preparedness Guidelines.</p> <p>For more information, visit <a href="https://training.fema.gov/">https://training.fema.gov/</a>.</p> <p><i>Highlighted training opportunities:</i></p> <ul style="list-style-type: none"> <li>• <a href="#">Mitigation eGrants for the Subgrant Applicant (IS0030.b)</a></li> <li>• <a href="#">Mitigation Planning for Local and Tribal Communities (IS0318)</a></li> <li>• Mitigation Basics for Mitigation Staff (training per hazard type: <a href="#">Tornado-IS0319</a>, <a href="#">Wildfire-IS0320</a>, <a href="#">Hurricane-IS0321</a>, <a href="#">Flood-IS0322</a>, <a href="#">Earthquake-IS0323</a>)</li> </ul> |
| ASFPM           | <p><b>Association of State Floodplain Managers (ASFPM) Trainings</b></p> <p>The ASFPM provides trainings, both in-person and online, to support local floodplain management and floodplain managers.</p> <p>For more information, visit <a href="http://www.floods.org/index.asp?menuID=237&amp;firstlevelmenuID=182">http://www.floods.org/index.asp?menuID=237&amp;firstlevelmenuID=182</a>.</p> <p><i>Related resource:</i></p> <ul style="list-style-type: none"> <li>• FEMA has developed the National Flood Insurance Program Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials (FEMA 480) to support floodplain managers obtaining their Certified Floodplain Manager (CFM) designation and to assist when implementing local floodplain management ordinances.</li> </ul> <p>For more information, visit <a href="https://www.fema.gov/media-library/assets/documents/902">https://www.fema.gov/media-library/assets/documents/902</a>.</p>   |
| NYSDEC          | <p>The New York State Department of Environmental Conservation can provide community staff trainings related to the NFIP and floodplain regulations.</p> <p>For more information, contact Floodplain Management staff at <a href="mailto:floodplain@dec.ny.gov">floodplain@dec.ny.gov</a>.</p>   |

# SEEKING GRANTS AND SUPPORT FOR HAZARD MITIGATION PROJECTS

Various Federal and State agencies provide grant funding for mitigation projects, though some have prerequisites, such as receiving a Presidential Major Disaster Declaration or having an active Hazard Mitigation Plan. Furthermore, the New York State Hazard Mitigation Plan will provide information on previously approved mitigation projects, grant sources, and links to additional mitigation resources. Access the draft 2019 New York State Hazard Mitigation Plan online at <http://mitigateny.availabs.org/>.

This list is not intended to be exhaustive and links provided below should be consulted for up-to-date information.

| GRANT SOURCE                                      | PURPOSE   |
|---|---|
| FEMA  | <b>Hazard Mitigation Grant Program</b><br>A statewide competitive grant available after a Presidential Major Disaster Declaration for post-disaster, All-Hazard Mitigation Plans and projects. These are generally due to the State 12 months after a declaration. For more information, visit: <a href="https://www.fema.gov/hazard-mitigation-grant-program">https://www.fema.gov/hazard-mitigation-grant-program</a> .   |
| FEMA  | <b>Pre-Disaster Mitigation Grant Program</b><br>A nationally competitive grant available annually for pre-disaster All-Hazard Mitigation Plans and projects. Applications are due to the State about three months after a Federal announcement, which typically occurs in the spring. For more information, visit <a href="https://www.fema.gov/pre-disaster-mitigation-grant-program">https://www.fema.gov/pre-disaster-mitigation-grant-program</a> .   |
| FEMA  | <b>Flood Mitigation Assistance Grant Program</b><br>A nationally competitive grant available annually for pre-disaster flood hazard funding of plans and projects to reduce flood damage risk to structures with flood insurance coverage. Applications are generally due to the State approximately three months after a Federal announcement, which typically occurs in the spring. For more information, visit <a href="https://www.fema.gov/flood-mitigation-assistance-grant-program">https://www.fema.gov/flood-mitigation-assistance-grant-program</a> .   |
| DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD) | <b>Various Grant Programs</b><br>HUD has offered various categories of grant support in the past. The Capacity Building for Community Development and Affordable Housing and Lead-Based Paint Hazard Reduction program are two recent funding opportunities with potential for relevance in supporting hazard mitigation. For more information, visit <a href="https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo">https://www.hud.gov/program_offices/spm/gmomgmt/grantsinfo</a> .   |
| HUD   | <b>Community Development Block Grant (CDBG)</b><br>HUD provides flexible grants to help cities, counties, and States recover from Presidential Major Disaster Declarations subject to the availability of supplemental appropriations. Projects seeking grant support must address a disaster-related impact, direct or indirect, in a Presidentially declared county for the covered disaster, be a CDBG eligible activity, and meeting a CDBG national objective. For more information, visit <a href="https://www.hudexchange.info/programs/cdbg-dr/">https://www.hudexchange.info/programs/cdbg-dr/</a> . |
| NY DEPARTMENT OF ENVIRONMENTAL CONSERVATION       | <b>Various Grant Programs</b><br>Some grant categories previously available in New York include Solid and Hazardous Waste, Water Protection, Watershed-based programs, Environmental Cleanup, Wildlife Protection, Land and Forest Protection, Environmental Justice, Climate Change, Food Scraps Reduction, Food Donation, and Food Scraps Recycling programs. For more information, visit <a href="https://www.dec.ny.gov/pubs/grants.html">https://www.dec.ny.gov/pubs/grants.html</a> .   |



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| GRANT SOURCE  | PURPOSE   |
|---|---|
| NY DEPARTMENT OF HOMELAND SECURITY AND EMERGENCY SERVICES               | <p><b>Various Grant Programs</b></p> <p>Grant program categories recently available in New York, which can be applicable to mitigation activities, include Regional Catastrophic Planning, Transit Security, Assistance to Firefighters, and Coastal Fish and Wildlife Service. For more information, visit <a href="http://www.dhss.ny.gov/grants/">http://www.dhss.ny.gov/grants/</a>.</p> <p>To view current State and Federal funding opportunities that encourage the development and implementation of long-term, cost-effective, and resilience mitigation projects, visit <a href="http://mitigateny.avilabs.org/strategies/funding">http://mitigateny.avilabs.org/strategies/funding</a>.</p>  |
| NY DEPARTMENT OF STATE  | <p><b>Various Grant Programs</b></p> <p>NY Department of State offers a number of funding programs including (but not limited to) Smart Growth Grants, Watershed Protections, Environmental Protection Fund, and Local Waterfront Revitalization Program grants. For more information, visit <a href="https://www.dos.ny.gov/grants.html">https://www.dos.ny.gov/grants.html</a>.</p>   |
| NY ENVIRONMENTAL FACILITIES CORPORATION                                 | <p><b>Various Grant Programs</b></p> <p>The Environmental Facilities Corporation is a public benefit corporation that provides financial and technical assistance to communities by providing low-cost financing for water quality infrastructure projects. For more information, visit <a href="https://www.efc.ny.gov/">https://www.efc.ny.gov/</a>.</p>  |
| NY GRANTS REFORM  | <p><b>Streamlining State Grant Processes</b></p> <p>A Master Contract for Grants has been released to reduce time and costs for both New York State and grantees. This portal allows communities to search for open grants from various State agencies from one location. For more information, visit <a href="https://grantsmanagement.ny.gov/">https://grantsmanagement.ny.gov/</a>.</p>  |
| NY GOVERNOR'S OFFICE OF STORM RECOVERY                                  | <p><b>NY Rising</b></p> <p>Although there are no longer new communities coming into the NY Rising program, the website can be consulted to track project progress and for additional open funding opportunities. For more information, visit <a href="https://stormrecovery.ny.gov/">https://stormrecovery.ny.gov/</a>.</p>   |
| U.S. ARMY CORPS OF ENGINEERS  | <p><b>Various Grant Programs</b></p> <p>Some recent grants from USACE have assisted in management and enhancement of natural resources, research on a variety of environmental topics, environmental issues, nearshore data collection, and education and training on environmental maintenance and management. For more information, visit <a href="https://www.iwr.usace.army.mil/Missions/Flood-Risk-Management/">https://www.iwr.usace.army.mil/Missions/Flood-Risk-Management/</a>.</p>  |
| U.S. DEPARTMENT OF AGRICULTURE — NATIONAL RESOURCE CONSERVATION SERVICE | <p><b>Various Grant Programs</b></p> <p>The National Resource Conservation Service conservation programs help people reduce soil erosion, enhance water supplies, improve water quality, increase wildlife habitat, and reduce damage caused by floods and other natural disasters. Some programs, like the Emergency Watershed Protection Program, may only be provided following a natural disaster. For more information, visit <a href="https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/">https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/</a>.</p>   |
| U.S. GEOLOGICAL SURVEY  | <p><b>Water Resources National Competitive Grants</b></p> <p>The USGS, in cooperation with the National Institutes for Water Resources, supports an annual call for proposals to focus on water problems and issues that are of a regional or interstate nature or that relate to a specific program priority identified by the Secretary of the Interior and the Institutes. Projects covered by this program have included evaluation of approaches to water treatment, infrastructure design, retrofitting, maintenance, management, and replacement; alternative approaches and governance mechanisms for integrated management of ground and surface waters; and the evaluation and assessment of conservation practices. For more information, visit <a href="https://water.usgs.gov/wrri/national-competitive-grants.php">https://water.usgs.gov/wrri/national-competitive-grants.php</a>.</p> |

Local and regional organizations often support the implementation of mitigation projects through means other than provision of grants. Some of these resources are highlighted below. Since the list is not exhaustive, the county Soil and Water Conservation District or the Adirondacks Lakes Alliance, Inc. can be consulted for insight on additional resources.

| GRANT SOURCE   | PURPOSE   |
|--|---|
| <b>BOQUET RIVER ASSOCIATION</b>                          | The Boquet River Association promotes improvements to and stewardship of the Boquet River and implements a Watershed Management Plan. The association collaborates with stakeholders to find solutions to problems affecting the water quality and overall health of the river.   |
| <b>CHAMPLAIN WATERSHED IMPROVEMENT COALITION OF NY</b>   | The Champlain Watershed Improvement Coalition of NY (CWICNY) has a statewide roadside drainage program with the goal of improving the capacity of roadside ditches, which could assist some communities with mitigating flooding sources.<br>For more information, visit <a href="https://www.cwicny.org/">https://www.cwicny.org/</a> .  |
| <b>LAKE CHAMPLAIN BASIN PROGRAM</b>                      | The Lake Champlain Basin Program has a grant program for water quality and protection projects within the adjacent Lake Champlain Watershed. The program also can provide technical support to communities through the watershed Environmental Assistance Program in conjunction with the USACE.<br>For more information, visit <a href="http://www.lcbp.org/about-us/grants-rfps/">http://www.lcbp.org/about-us/grants-rfps/</a> .   |
| <b>NORTH ATLANTIC AQUATIC CONNECTIVITY COLLABORATIVE</b> | The North Atlantic Aquatic Connectivity Collaborative can assist communities with prioritizing mitigation activities through their research to analyze culvert capacities to determine if they are undersized. This information could be incorporated into modeling but also could help communities determine where culverts should be resized to mitigate flooding.<br>For more information, visit <a href="https://streamcontinuity.org/assessing_crossing_structures/index.htm">https://streamcontinuity.org/assessing_crossing_structures/index.htm</a> . |
| <b>SCHROON LAKE ASSOCIATION</b>                          | The Schroon Lake Association preserves, protects, and promotes Schroon Lake, the Schroon River, and the watershed area. The organization supports implementation of a Lake Management Master Plan, pursues funding opportunities to mitigate or eliminate problems, and coordinates stewardship work within the watershed.<br>For more information, visit <a href="https://schroonlakeassociation.com/">https://schroonlakeassociation.com/</a> .   |



## EXPLORING DATA SOURCES USED IN DISCOVERY

Discovery is a process of data mining, collection, and analysis through active collaboration with communities. FEMA gathered a significant amount of data before the Discovery Meeting to focus community engagement on identifying more localized information and sources of data. Additionally, the Region led the review of the Hazard Mitigation Plans, NFIP data, and other local socioeconomic data for each of the jurisdictions prior to the Discovery meetings.

During the Discovery meetings, FEMA asked communities and stakeholders to identify areas of concern that could be addressed during the flood study through updated flood maps, revised ordinances, and desired mitigation projects. The data collected was used to produce the Discovery Map Geodatabase and this Discovery Report. The table below provides an overview of the data collected and used.

| DATA  | UTILIZATION                                 | SOURCE   |
|---|---|--|
| AVERAGE ANNUAL LOSS                               | Discovery Map Geodatabase                   | <a href="#">FEMA Hazus Average Annualized Loss Viewer</a>                    |
| BOUNDARIES: COMMUNITY                             | Discovery Map Geodatabase                   | <a href="#">FEMA FIRM Database</a>   |
| BOUNDARIES: COUNTY AND STATE                      | Discovery Map Geodatabase                   | <a href="#">US Census, NYS GIS Program Office</a>                            |
| BOUNDARIES: ADIRONDACK PARK AGENCY                | Discovery Report                            | <a href="#">Adirondack Park Agency</a>                                       |
| BOUNDARIES: WATERSHED                             | Discovery Map Geodatabase                   | <a href="#">USGS National Hydrography</a>                                    |
| CENSUS BLOCKS                                     | Discovery Map Geodatabase                   | <a href="#">US Census</a>  |
| COORDINATED NEEDS MANAGEMENT STRATEGY             | Discovery Map Geodatabase                   | <a href="#">FEMA Coordinated Needs Management Strategy</a>                   |
| CRS PARTICIPATION                                 | Discovery Report                            | <a href="#">FEMA Community Information System</a>                            |
| DAMS  | Discovery Report, Discovery Map Geodatabase | <a href="#">NYSDEC Inventory of Dams</a>                                     |
| DECLARED DISASTERS                                | Discovery Report                            | <a href="#">FEMA Disaster Declaration Database</a>                           |
| EARTHQUAKES                                       | Discovery Report                            | <a href="#">USGS Earthquake Hazards Program</a>                              |
| ECONOMIC CHARACTERISTICS                          | Discovery Report                            | <a href="#">US Economic Census</a>   |
| EFFECTIVE FLOODPLAINS: SPECIAL FLOOD HAZARD AREAS | Discovery Map Geodatabase                   | <a href="#">FEMA National Flood Hazard Layer from the Map Service Center</a> |
| FARMS   | Discovery Report                            | <a href="#">USDA National Agricultural Statistics Service</a>                |

| DATA                                | UTILIZATION                                 | SOURCE   |
|-------------------------------------|---|--|
| HAZARD MITIGATION ASSISTANCE GRANTS | Discovery Report                            | FEMA Hazard Mitigation Assistance Grants Database                            |
| ICE JAMS                            | Discovery Report                            | <a href="#">USACE Ice Jam Database</a>                                       |
| IDENTIFIED MITIGATION ACTIONS       | Discovery Report, Discovery Map Geodatabase | County Hazard Mitigation Plans, Discovery meetings                           |
| INDIVIDUAL ASSISTANCE               | Discovery Report                            | FEMA Individuals and Households Program Database                             |
| LAND USE                            | Discovery Report                            | <a href="#">National Land Cover Database</a>                                 |
| LETTERS OF MAP CHANGE               | Discovery Report, Discovery Map Geodatabase | <a href="#">FEMA Mapping Information Platform</a>                            |
| LEVEE INVENTORY                     | Discovery Map Geodatabase                   | FEMA National Levee Inventory Map  |
| LIDAR                               | Discovery Map Geodatabase                   | <a href="#">NYS LiDAR</a>  |
| MITIGATION PLAN STATUS AND SUMMARY  | Discovery Report                            | <a href="#">FEMA Mitigation Planning Portal</a>                              |
| NATIONAL HYDROGRAPHY STREAM DATA    | Discovery Map Geodatabase                   | <a href="#">FEMA National Flood Hazard Layer from the Map Service Center</a> |
| NFIP PARTICIPATION                  | Discovery Report                            | <a href="#">FEMA Community Information System</a>                            |
| POPULATION                          | Discovery Report                            | <a href="#">US Census Bureau Quick Facts</a>                                 |
| PUBLIC ASSISTANCE                   | Discovery Report                            | FEMA Public Assistance Database  |
| STREAM GAGES AND FLOWS              | Discovery Map Geodatabase                   | <a href="#">USGS National Water Information System</a>                       |
| STRUCTURES                          | Discovery Map Geodatabase                   | <a href="#">FEMA National Flood Hazard Layer from the Map Service Center</a> |
| TOPOGRAPHY                          | Discovery Map Geodatabase                   | <a href="#">USGS Topographic Maps</a>  |
| TRANSPORTATION                      | Discovery Map Geodatabase                   | <a href="#">NYS GIS Clearinghouse</a>  |
| WATERSHED BACKGROUND INFORMATION    | Discovery Report                            | <a href="#">USDA NRCS Rapid Watershed Assessment Profiles</a>                |
| WILDFIRES                           | Discovery Report                            | <a href="#">USFS 2012 Wildland Fire Potential</a>                            |



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# LIST OF APPENDICES

## A. Discovery Watershed Maps



A series of white, wavy, concentric lines on a dark blue background, resembling topographic map contour lines.

## APPENDIX A

# REGION II DISCOVERY REPORT DISCOVERY WATERSHED MAPS

**UPPER HUDSON WATERSHED** | HUC 02020001

Department of Homeland Security  
Federal Emergency Management Agency Region II  
26 Federal Plaza, Room 1807  
New York, NY 10278

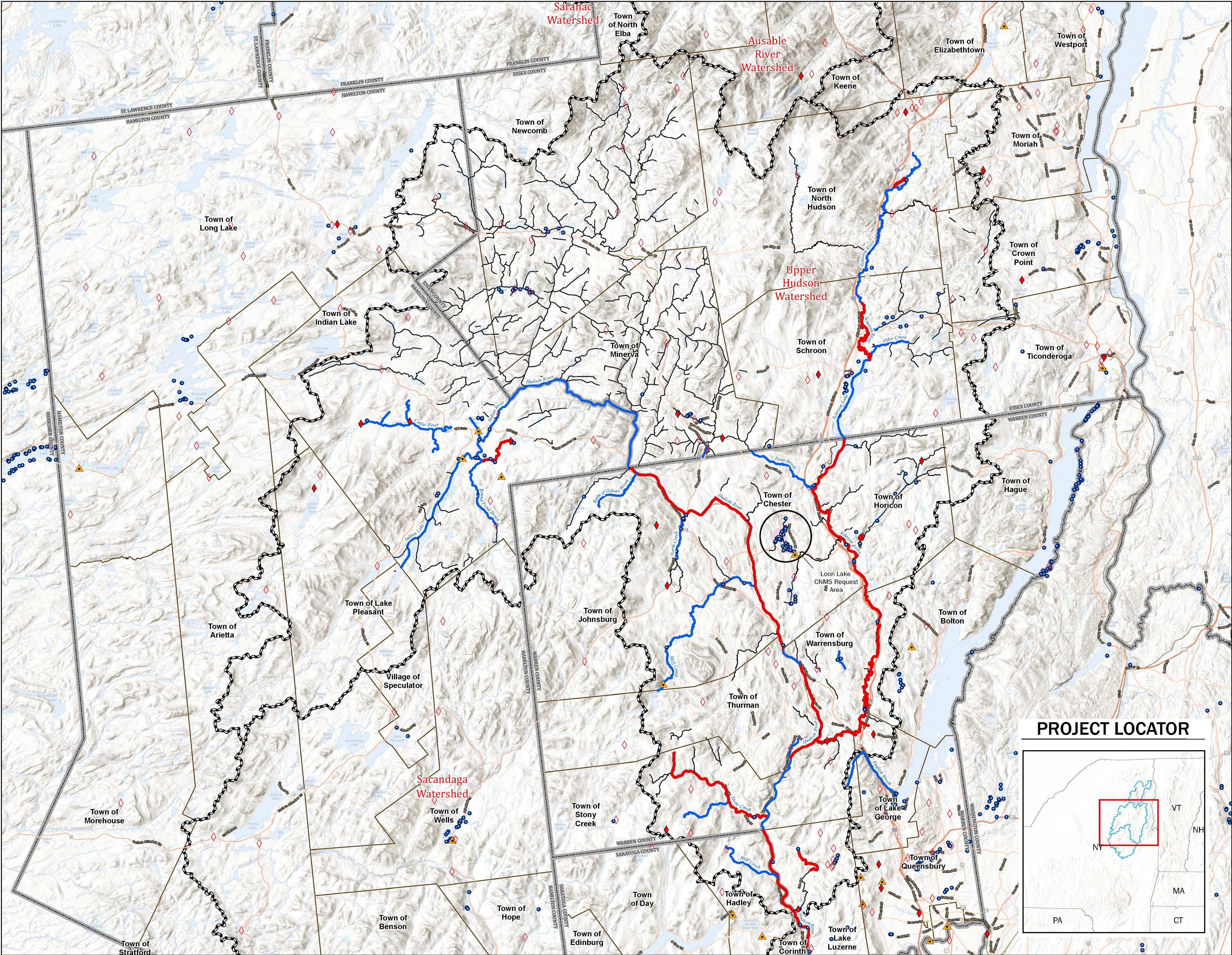
March 2019



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LEGEND AND NOTES

- Watershed Boundary
- Jurisdiction Boundary
- Loon Lake CNMS Request Area
- LOMA

- Dams
- Low Hazard
  - Intermediate Hazard
  - High Hazard

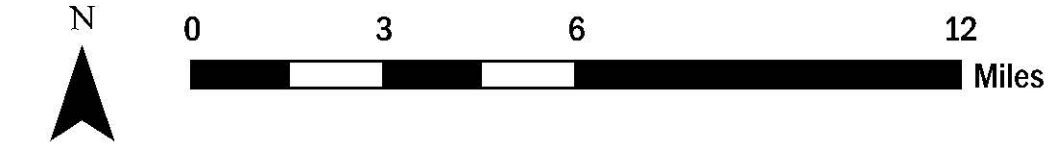
- Stream Priority Ranking
- High
  - Medium
  - Low

Data Sources: FEMA Region II, FEMA Map Service Center, USGS, US Army Corps of Engineers, NOAA, New York State GIS Clearinghouse, and the Adirondack Park Agency.

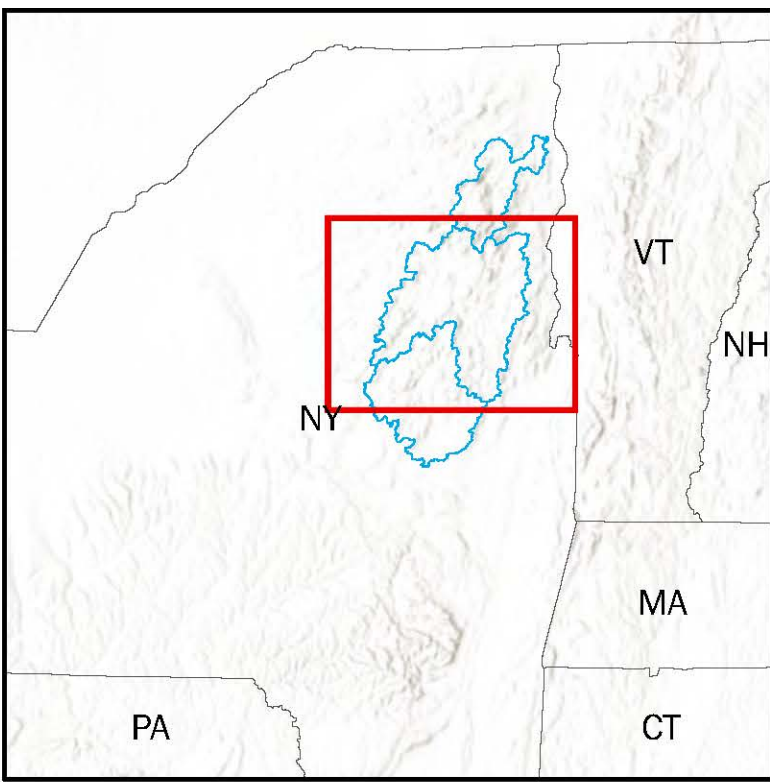
Additional information provided by local hazard mitigation plans, local jurisdiction GIS data, and Community Discovery interviews.

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors  
Sources: Esri, USGS, NSA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatasys, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community  
USGS The National Map: National Hydrography Dataset. Data refreshed October, 2018.

1 inch = 3 miles 1:190,080



PROJECT LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM INFORMATION EXCHANGE MAP

NEW YORK DISCOVERY

The community lies in the following watershed(s):  
Upper Hudson Watershed  
02020001

Map Contains:

| COMMUNITY              | NUMBER |
|------------------------|--------|
| ARETZA, TOWN OF        | 381402 |
| BOLTON, TOWN OF        | 380989 |
| CROWN POINT, TOWN OF   | 380909 |
| DAY, TOWN OF           | 381148 |
| HADLEY, TOWN OF        | 381198 |
| HAGUE, TOWN OF         | 380718 |
| HORICON, TOWN OF       | 380873 |
| INDIAN LAKE, TOWN OF   | 380874 |
| JOHNSBURG, TOWN OF     | 381113 |
| LAKE GEORGE, TOWN OF   | 380875 |
| LAKE LUZERNE, TOWN OF  | 380876 |
| LAKE PLEASANT, TOWN OF | 380878 |
| LOON LAKE, TOWN OF     | 381405 |
| MINERVA, TOWN OF       | 381406 |
| MORIAH, TOWN OF        | 381103 |
| QUEENSBURY, TOWN OF    | 381389 |
| SCHROOM, TOWN OF       | 380879 |
| SPECULATOR, VILLAGE OF | 381104 |
| STONY CREEK, TOWN OF   | 381321 |
| THURMAN, TOWN OF       | 380880 |
| TICONDEROGA, TOWN OF   | 380881 |
| WARRENSBURG, TOWN OF   | 381109 |
| WELLS, TOWN OF         | 380982 |
| WELLS, TOWN OF         | 381112 |

DATE March, 2019

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