

Clinton County, New York Hazard Mitigation Plan

May 2021



Clockwise from top: ice jam causing flooding in MacDonough Park, Plattsburgh; the July 2018 wildfire in Altona; the seal of Clinton County; Clinton County Municipal buildings; the flood of Underwood Estates in Plattsburgh.

Prepared by:
Mountain View Planning
3137 Essex Road
Willsboro, NY 12996
518-636-6306 Office/ 518-837-2103 Cell
Therese (Tess) Grubb, President
Shannon M. Thayer, Community Planner

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LIST OF ABBREVIATIONS

APA	Adirondack Park Association
ARC	American Red Cross
CCC	Clinton Community College
CCHD	Clinton County Health Department
CCHWD	Clinton County Highway Department
CCPD	Clinton County Planning Department
CCPH	Clinton County Public Health
CCPT	Clinton County Public Transit
CCS&W	Clinton County Soil and Water
CEMP	Comprehensive Emergency Management Plan
CDBG	Community Development Block Grants
CFR	Code of Federal Regulations
CVES	Champlain Valley Educational Services
CVPH	Champlain Valley Physicians Hospital
CySec	Cyber Security
DEC	Department of Environmental Conservation
DHSES	Department of Homeland Security and Emergency Services
DOS	Department of State
DOT	Department of Transportation
DPW	Department of Public Works
DRI	Downtown Revitalization Initiative
EAP	Emergency Action Plan
EAS	Emergency Alert System
EF	Enhanced Fujita
EFC	Environmental Facilities Corporation
EHS	Environmental Health and Safety
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
ERP	Environmental Resources Permit
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FIRM	Flood Insurance Rate Maps
GHG	Greenhouse Gases
GIS	Geographic Information Systems
HAZMART	Hazardous Materials
HAZUS	Hazards US

HAZUS-MH	Hazards US Multi-Hazards
HCR	Home Health Care of Rochester
HMP	Hazard Mitigation Plan
ICS	Incident Command System
IT	Information Technology
JCEO	Joint Council for Economic Opportunity
LT	Long Term
MAC	Mitigation Advisory Committee
MHP	Mobile Home Park
MSDS	Material Safety Data Sheets
NAWAS	National Warning System
NCDC	National Climate Data Center
NCEI	National Center for Environmental Information
NESIS	Northeast Snowfall Impact Scale
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NSSL	National Severe Storms Library
NWR	National Weather Radio
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSDOC	New York State Department of Corrections
NYSDOH	New York State Department of Health
NYSDOS	New York State Department of State
NYSEG	New York State Electric and Gas
NYSERDA	New York State Energy Research Development Authority
OES	Office of Emergency Services
PDSI	Palmer Drought Severity Index
PFAS	Polyfluoroalkyl Substances
PGA	Peak Ground Acceleration
PHMSA	Pipeline and Hazardous Material Safety Administration
PMLD	Plattsburgh Municipal Lighting Department
QC	Quebec
REDC	Regional Economic Development Council
RV	Recreational Vehicle
SA	Spectral Acceleration
SFHA	Special Flood Hazard Area
SOE	State of Emergency
ST	Short Term
SUNY	State University of New York
SWCD	Soil and Water Conservation District

TBD	To Be Determined
TCO	Traffic Control Officer
TR	Temporary Residents
TS	Tropical Storm
USD	US Dollars
USDA	United State Department of Agriculture
USGS	United State Geological Survey
UVM	University of Vermont
VMS	Variable Messaging System
VRP	Voluntary Response Program
WIA	Water Infrastructure Improvement Act
WMD	Weapons of Mass Destruction
WWTF	Wastewater Treatment Facility

SECTION 1: INTRODUCTION

Background:

There are four phases of the emergency management process: preparedness, response, recovery, and mitigation. A summary of the four phases is described below. Information was obtained from the Federal Emergency Management Agency (FEMA) website.

Preparedness includes all actions that are taken before the crisis occurs. Preparedness is making plans and having the needed equipment and supplies to save lives during and after a disaster event. It's also knowing what the warning signs are for a pending emergency or disaster. At the individual household level, it includes stockpiling supplies,

conducting drills (i.e. fire drills, household evacuation), installing smoke detectors, posting emergency numbers by telephones, and so on. At the level of a municipality it includes emergency evacuation plans, plans for emergency housing, stocking shelters with needed supplies, knowing where to get needed equipment, and other large scale activities to protect areas. Preparedness is the most time consuming, as it is comprised of many tasks and requires many resources.

Response is the immediate action taken after a disaster or emergency; by taking this action, you are attempting to protect yourself and others from harm or further harm. How you respond depends on the onset of the event. The period of time you have between knowing a disaster will occur, and it occurring is known as the *onset time*. Onset time can vary widely based on the type of hazard event. A hurricane has a long onset time because the National Weather Service can track these storms with the use of satellites and post watches and warnings before they make landfall. An earthquake on the other hand, has virtually no onset time because it happens quickly and without warning. The duration of a disaster is the time from when it starts to when it ends. Blizzards, droughts, floods, and hurricanes have durations that can last days, weeks, or even longer. Conversely, earthquakes, tornadoes, and avalanches can last only minutes or even seconds.



image source: <https://www.bu.edu/emd/emergency-management/emergency-management-principles/>

Recovery includes all actions you take to keep yourself safe and return your life to normal after a disaster. Some actions will be immediate, like those taken to stop life-threatening bleeding or to protect yourself from further injury. Other actions take longer. If your home has been damaged, it will need to be repaired or replaced and you'll need to start submitting claims on those items covered by insurance. How difficult your recovery depends on how much preparedness you have done. A person who has prepared well and has enough food, water, and other supplies, including things like having the proper amount of insurance, will fare much better than someone who has prepared little or not at all.

Mitigation is preventing disaster or taking steps to lessen impacts of unavoidable disasters. Ideally, the mitigation should occur before an emergency happens. However, mitigation and preparedness sometimes do not occur until after a disaster happens and repairs are being made. This is also often seen in government agencies where there is a lack of resources to mitigate a potential disaster until it strikes. All too often, it is after the confusion dies down and things start to return to normal when governments make plans for the next disaster.

Across the United States, natural and human-made disasters have led to increasing levels of deaths, injuries, property damage, and interruption of business and government services. The time, money, and effort needed to recover from these disaster exhausts resources, diverting attention from important public programs and private agendas. Since 1953 there have been 18 Presidential Disaster Declarations that have impacted Clinton County. All of these events have taken place since 1993, there were 6 Presidential Emergency Declarations and 12 Presidential Major Disaster Declarations. The Clinton County Office of Emergency Services, Clinton County Planning Office, municipal staff, citizens, and elected officials and other stakeholders in Clinton County recognize the impact of disasters on their municipalities and support proactive efforts needed to reduce the impact of natural and human-made hazards.

Hazard mitigation describes sustained actions taken to prevent or minimize long-term risks to life and property from hazards and create successive benefits over time. Pre-disaster mitigation actions are taken in advance of a hazard event and are essential to breaking the disaster cycle of damage, reconstruction, and repeated damage. With careful selection, successful mitigation actions are cost-effective means of reducing risk of loss over the long-term.

Hazard mitigation planning has the potential to produce long-term and recurring benefits by breaking the cycle of loss. A core assumption of mitigation is that the current dollars invested in mitigation practices will significantly reduce the demand for future dollars by lessening the amount needed for recovery, repair, and reconstruction. These mitigation practices will also enable local residents, businesses, and industries to re-establish themselves in the wake of a disaster, getting the economy back on track sooner and with less interruption.

The Clinton County Hazard Mitigation Advisory Committee (MAC) was composed of emergency management and county agency staff from Clinton County. The group worked in cooperation with

the elected officials of the county and its municipalities to develop the Hazard Mitigation Plan (HMP) update.

The plan is the result of work by Clinton County and jurisdictional staff to develop a pre-disaster multi-hazard mitigation plan that will not only guide the county towards greater disaster resistance but will also respect the character of each municipality.

Funding from the Federal Emergency Management Agency (FEMA) and New York State Division of Homeland Security and Emergency Services (DHSES) enabled Clinton County to hire ***Mountain View Planning*** as a consultant to assist in the updating of the Clinton County Hazard Mitigation Plan. The president of Mountain View Planning was the Lead Community Planner in FEMA Region 3 for 6 years and has a history of working with the Hazard Mitigation Planning Program since 2002. The Mountain View Planning employee providing technical writing support and expertise for the development of this plan has a degree in Environmental Planning and Management and has worked on projects analyzing Hazard Mitigation Plan development as well as projects revolving around watershed management. This team was able to provide their expertise to support the county officials and jurisdictions to update their HMP.

Purpose:

The purpose of this All-Hazard Mitigation Plan Update (HMP) is:

- To protect life, safety, and property by reducing the potential for future damages and economic losses that result from natural hazards
- To qualify for additional grant funding, in both the pre-disaster and post-disaster environment
- To speed recovery and redevelopment following disaster events
- To demonstrate a firm local commitment to hazard mitigation principles
- To comply with both state and federal legislative requirements for local hazard mitigation plans

Scope:

The Clinton County 2021 Hazard Mitigation Plan update has been prepared to meet requirements set forth by the Federal Emergency Management Agency (FEMA) and New York State Division of Homeland Security and Emergency Services (DHSES). This updated plan will enable Clinton County to be eligible for funding and technical assistance from state and federal hazard mitigation programs. It will be updated and maintained to address both natural and one human-made hazard determined to be of significant risk to the County and/or its local municipalities. Updates will take place at minimum every 5 years.

Authority and References:

Authority for this plan originates from the following federal sources:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C., Section 322, as amended
- Code of Federal Regulations (CFR), Title 44, Parts 201 and 206
- Disaster Mitigation Act of 200, Public Law 106-390, as amended
- National Flood Insurance act of 1968, as amended, 42 U.S.C., 4001 et seq.

The requirement for jurisdictions to develop and adopt hazard mitigation plans will result in mitigation projects that when implemented will reduce the effects from hazards events on these jurisdictions. The projects will enable our communities to be more resilient to disaster.

SECTION 2: PLANNING PROCESS

Update Process and Participation Summary:

Clinton County obtained Federal funds to update the Hazard Mitigation Plan in 2019. *Mountain View Planning* was selected as the contractor to assist with the plan update. Mountain View Planning specializes in hazard mitigation planning and has collectively 13 years of experience in hazard mitigation plan while employed at FEMA.

The 2021 Hazard Mitigation Plan update used a similar format to the previous plan for the planning process. Forms were provided at meetings and via email to obtain jurisdiction specific information for this plan update. Meetings were held with nearly all towns and villages as the plan was updated. County agency meetings were held to obtain information on county programs and projects that were implemented and ones to be implemented.

The Planning Director/GIS Administrator for the Clinton County Planning Department coordinated on all aspects of the hazard mitigation plan update process.

The Clinton County Hazard Mitigation Advisory Committee (MAC) was established to assist in the update of the plan. MAC members are key staff in Clinton County Agencies. These staff interact with town and village staff on a regular basis as they implement their county agency duties. The hazard mitigation plan was discussed often by county staff as they interacted with the towns and villages, which has led to many successful outcomes. The historical and situation awareness lead to improved coordination with the towns and villages. The majority of staff are long-term local residents, the awareness and sense of community in a mostly rural county leads to cooperation and coordination. Section 5 has example programs that are being implemented by Clinton County agencies and the towns and villages of Clinton County.

MAC members were emailed invitations to the November 7th, 2019 and the June 4th, 2020 meetings. The first MAC meeting was a kick-off that introduced the members to the planning process and also resulted in the collection of information about the county. The kick-off meeting included an overview of the entire project for the HMP update, including the outreach plan for the various jurisdictions within the county. The initial meeting also included the ranking of hazards, and discussion of the mitigation goals for the county. The second meeting focused on the review of past mitigation projects, county accomplishments, and proposed mitigation projects. A discussion of the programs and coordination with the towns and villages also occurred. Information was collected at both meetings that was utilized to profile the county agencies, which can be found in Section 5.

Forms and surveys were distributed throughout the planning process to municipalities and other stakeholders. The table on page 2-4 indicates the dates of meetings with towns and villages throughout the plan update process. The first half of town and village meetings took place in late 2019, with the remainder to be completed in the spring of 2020. However, as a result of the

COVID-19 pandemic those meetings reserved for the spring had to be moved to video calls, as no in person meetings were permitted from March 16th, 2020 through the completion of the draft plan in June 2020. A list of all of the individuals that attended meetings was maintained throughout the planning process and is included in the appendix. Sign-in sheets (from the in-person meetings) as well as all completed town and village forms are available in the appendix.

The 2021 hazard mitigation plan update incorporated changes and additions to mitigation projects from the municipalities. The updated municipal project information was provided at each meeting and forms were returned after the meeting to be incorporated into the updated plan. All documents from the 2021 plan update can be located in the appendix section of the plan. The update also includes pertinent information that became available since the adoption of the last Hazard Mitigation Plan in 2014. The process updated the plan to better incorporate new hazard and project information that occurred between the 5-year plan updates.

The capability section of the plan was created for the 2021 plan update. The section includes detailed information on county agencies and programs, as well as projects they implement to reduce effects of hazard in Clinton County. County agencies have provided support to the towns and villages that have increased their ability to respond and recover from disasters, improve water and sewage services, build outreach efforts through increased education and awareness efforts, and have supported water quality projects. Clinton County agencies will continue to implement projects and programming that will continuously improve the mitigation efforts in Clinton County.

The mitigation strategy section was also updated for the 2021 plan update. Each of the 18 jurisdictions (14 towns, 3 villages, and 1 city) easily identified projects specific to their jurisdiction. This format will also make annual reporting and updating of the plan on the 5-year cycle easier to implement. The mitigation table also includes the status of projects from the 2014 plan update, projects completed by the jurisdictions, and projects developed during the 2021 update.

New hazards were fully profiled for the 2021 updated plan and can be viewed in section 4. The 2019 New York State Hazard Mitigation Plan list of hazards was profiled for this plan and built upon the list profiled for the 2014 Clinton County Hazard Mitigation Plan. Transportation hazards (truck and rail) were the only human-made hazards profiled, as the presence of both the interstate, as well as the rail line in the eastern portion of the county made this an important category of hazards to profile.

Maps for the towns and villages were provided by the Clinton County Planning department and are able to be viewed in section 6 the Town and Village Profiles. These maps were based upon the 2019 preliminary maps issued by FEMA in September of 2019. These maps will soon be regulatory flood maps once they are formally adopted by the towns, villages, and city in Clinton County.

Brochures addressing hazards are available in the appendix, and can be printed by towns, village, and county staff to place in offices and other locations for education and outreach efforts. These

documents allow each town and village to place their town and village information on the front of the brochures.

The draft plan was delivered to the Clinton County Planning Department on June 30th. A press-release notified residents that a copy of the draft plan was available at the Clinton County Planning Department and online at clintoncountgov.com/planning.

Communications with neighboring counties, states and Canada Provinces are important, in that neighboring jurisdictions should be informed on actions that could impact these areas. Clinton County is a part of the Lake Champlain watershed, and contributes a small percentage of the water to the lake. Neighboring counties were be provided a draft of the plan. In New York this includes Essex and Franklin Counties. In Vermont this includes Grand Isle and Chittenden Counties. The Province of Quebec also receive a copy of the draft plan. No correspondences were received by the Clinton County Planning Department from any of the neighboring jurisdictions.

The following table indicates meetings that occurred during the 2021 plan update. The table indicated jurisdictional participation as well.

The Planning Team:

The Hazard Mitigation Advisory Committee (MAC) consisted of a well-diversified planning team of county agency staff, county officials, and emergency coordinators. These individuals were invited to participate in the hazard mitigation plan update process. The MAC worked throughout the process to attend meetings, provide information, and provide guidance to the contractor.

The following individuals comprised the MAC. They provided guidance and data that were utilized in the plan update.

The 2021 MAC members:

1. Glen Cutter, Planning Director/GIS Administrator, Clinton County Planning Department
2. Eric Day, Director, Clinton County Office of Emergency Services
3. Kelly Donahue, Assistant Director, Clinton County Office of Emergency Services
4. Mark LaFountain, Public Health Emergency Preparedness Coordinator, Clinton County Health Department
5. Ryan Davies, Director/ Engineer of Environmental Health, Clinton County Health Department
6. Karl Weiss, Highway Superintendent, Clinton County Highway Department
7. Peter Hagar, District Manager, Clinton County Soil and Water
8. John Kanoza, Director of Environmental Health and Safety, Clinton County Health Department

Meetings and Documentation:

The following meetings were held during the planning process. All invitations, agendas, and sign-in sheets for these meetings are included in the appendix.

November 7th, 2019: Mitigation Advisory Committee Kickoff Meeting held at the Clinton County Planning Department to introduce the project to the MAC members. The update process and schedule were discussed, their roles in the plan update process were reviewed, and hazard rankings were discussed for the county.

June 4th, 2020: Mitigation Advisory Committee Meeting, during this meeting projects and programming were reviewed for the various county agencies. Previous mitigation actions were reviewed, completed county projects were identified, and new mitigation projects were outlined.

June 4th, 2020: Meeting with Clinton County Office of Emergency Services projects were reviewed from the 2014 mitigation plan, completed projects, as well as new projects for the 2021 update were discussed. Information was also collected regarding the County Emergency Management Plan, and the various activities of the Office of Emergency Services

Towns and villages met with the contractor to supply information specific to their jurisdictions. Forms were reviewed and discussion on all aspects of the town or village, and of hazards that occur within their boundaries. Supervisors and other town and village officials were able to understand the planning process, and what was expected from them in reference to providing information for the plan update.

The following table indicates the dates of the various town and village meetings. The meeting types are indicated as some meetings were held remotely via vide conference during the NY Pause order in Spring of 2021. Sign-in sheets and information regarding attendees of each meeting are available in the appendix.

DATES OF MEETINGS WITH CITY, TOWNS, AND VILLAGES		
Jurisdiction	Date	Type of Meeting
Altona, Town of	December 5, 2019	In person
Ausable, Town of	December 13, 2019	In person
Beekmantown, Town of	December 18, 2019	In person
Black Brook, Town of	December 6, 2019	In person
Champlain, Town of	November 25, 2019	In person
Champlain, Village of	December 18, 2019	In person
Chazy, Town of	December 11, 2019	In person
Clinton, Town of	December 19, 2019	In person
Dannemora, Town of	June 8, 2020	Video Conference Call
Dannemora, Village of	April 16, 2020	Video Conference Call
Ellenburg, Town of	June 29, 2020	Video Conference Call
Mooers, Town of	May 15, 2020	Video Conference Call
Peru, Town of	May 18, 2020	Video Conference Call
Plattsburgh, City of	May 7, 2020	Video Conference Call
Plattsburgh, Town of	April 24, 2020	Video Conference Call

Rouses Point, Village of	May 7, 2020	Video Conference Call
Saranac, Town of	December 12, 2019	In person
Schuyler Falls, Town of	December 17, 2019	In person

Public and Stakeholder Participation:

Each stakeholder was given multiple opportunities to participate in the Hazard Mitigation Plan update process through invitations to meetings, correspondences by email, phone calls, reviews of risk assessment results and mitigation actions, and an opportunity to comment on the draft Hazard Mitigation Plan update. Towns and villages were encouraged to discuss this plan update with local residents, businesses, and others. The draft plan was available on the Clinton County Planning Department website in July and was open to public comment. Legal notices were placed in the Press-Republican as well as the Sun Community News to notify the residents of the availability of the draft plan.

The 7 tools listed below were distributed at meetings to solicit information, data, and comments from both local municipalities and key stakeholders. Responses on these worksheets and surveys are included in the appendix.

1. **Identified Hazards and Risk Worksheet:** Capitalizes on local knowledge to evaluate the change in frequency of occurrence, magnitude of impact and/or geographic extent of profiled hazards. Municipalities reviewed hazards that were not profiled in the 2014 version of the hazard mitigation plan.
2. **Critical Facilities Assessment Survey:** Collects information regarding the various critical facilities within a municipality, their relation to the floodplain, and the availability of generators as back-up power. The survey helps identify structures that have flooded in the past or are at risk of flooding. It also allows municipalities to highlight the ways in which they have mitigated these structures to prevent future flood damages, if applicable.
3. **Plan for Displaced Residents:** Collects information regarding potential sites within each municipality and their suitability for temporary housing (i.e. RVs and trailers) in the event of an emergency.
4. **Capability Assessment Worksheets:** Information about the local planning, regulatory, administrative, technical, fiscal, political, and resilience capabilities is acquired through these worksheets. This information was vital to the description in the Town and Village and County profiles, as well as the county capability assessment.
5. **2014 Mitigation Project Review:** Municipalities were asked to evaluate the status of projects submitted in the previous plan, indicate the progress that had been made, indicate the challenges that had been encountered with projects not completed, and to indicate if the project should be part of the 2021 update.

6. **New Mitigation Projects for 2021 Update:** The County, Towns, and Villages were all asked to propose new mitigation actions for the plan update. The mitigation actions include information about each action such as lead agency/department, funding source and estimated costs, implementation schedule, and priority.
7. **Other Completed Projects and Accomplishments:** Several towns and villages as well as the county provided information about projects that have been completed in the last 8 years. These may not be traditional mitigation projects, but they do mitigate hazards and show that the jurisdictions mitigate risks every day as they conduct daily operations.

Municipal participation and comments were encouraged throughout the planning process. Most notably through contact with the Clinton County Planning Department and Mountain View Planning.

Existing Planning Mechanisms:

There are numerous existing regulatory and planning mechanisms in place at the state, county, and municipal levels of government which support hazard mitigation planning efforts. These tools include the New York State All Hazards Mitigation Plan, the New York State website MitigateNY, local floodplain management ordinances, the Clinton County Land Use Plan, the Clinton County Comprehensive Emergency Management Plan, the Clinton County Hazard Vulnerability Analysis, the Agricultural and Farmland Protection Plan, Clinton County Housing Needs Assessment, the Clinton County Solid Waste Local Management Plan, local zoning ordinances, local development ordinances, and other local plans. These mechanisms were discussed at municipal meetings and are described in section 6 within each town or village's profile.

Information from several of these documents was incorporated into this plan. Efforts to identify plans that were utilized in each section to provide a source of data were completed. Mitigation actions have been developed to further integrate these planning mechanisms into the hazard mitigation planning process. Continued effective planning and implementation of a variety of grants by the county and the 18 jurisdictions will enable the hazard to be addressed and mitigated. These programs will continue to produce results that mitigate hazards to Clinton County and its jurisdictions, and more importantly to the residents of Clinton County.

SECTION 3: COUNTY PROFILE

Introduction:

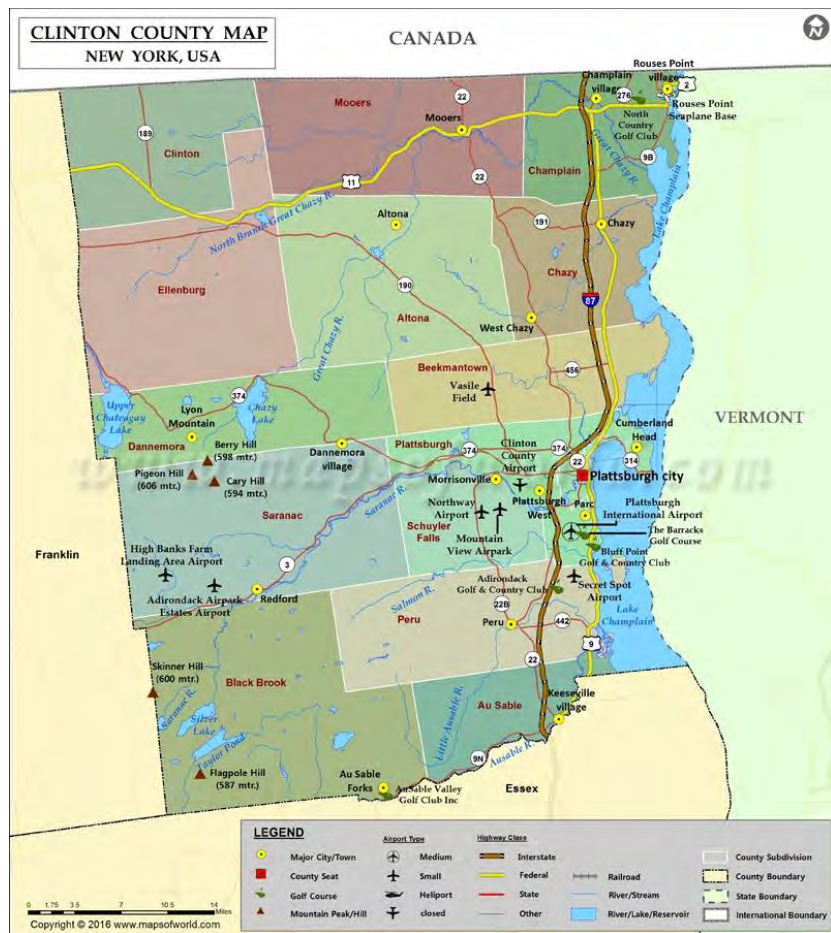
Clinton County lies in the Northeastern corner of New York state and is bounded by the province of Québec, Canada to the north, Lake Champlain and Vermont to the east, Essex County to the south, and Franklin County to the west. The Ausable River creates a natural border that comprises a large portion of the boundary between Clinton and Essex Counties.

A mainly rural county it covers 714,800 acres (1,118 square miles), approximately 172,700 acres of this land is agricultural, and there is 19,720 acres of water. Elevations in the county range from 10ft along the shores of Lake Champlain to 3,842 feet at the summit of Lyon Mountain, the high point of the county. The City of Plattsburgh is the county seat as well as the most densely populated area of the county. Plattsburgh is also the location of many of the county government buildings, the only hospital in the county, and an international airport.

Nearly half of the county falls within the Adirondack Park (326,966 acres). The towns of Dannemora, Black Brook, and AuSable all fall completely within the park's boundaries, with portions of the towns of Saranac, Peru, Ellenburg and Altona located within the park as well.

County Facts:

The 2017 American Community Survey estimates the population to be 81,224 with a decrease of 1,436 residents since 2010. A large majority of this population change has been due to out migration of residents outpacing the birth rate. See the table below for statistics about the individual towns within the county.



source: mapsofworld.com/usa/states/new-york/new-york-maps/clinton-county-map.jpg

CLINTON COUNTY FACTS	
County Seat	Plattsburgh
Number of Towns	14
Number of Incorporated Villages	4 (Champlain, Dannemora, Keeseville, Rouses Point)
Number of Hamlets	16
Population	82,128 (2010 Census)
Land Area	1,118 sq. miles/ 714,800 acres
Land Classified Hamlet (APA)	3,120 acres
Land Classified Industrial Use (APA)	36 acres
Largest Lake Bordering County	Lake Champlain (eastern boundary)
Largest Lake within County	Upper Chateaugay Lake (2,549 acres)
Highest Elevation	Lyon Mountain (3,842')
Largest Rivers	AuSable, Great Chazy, Saranac
Interstate Highway	I-87 north/south
State Roads	3, 9, 9B, 9N, 11, 22, 22B, 189, 190, 191, 276, 314, 374
State Road Mileage	301.2 miles
County Road Mileage	353.1 miles
City, Town, or Village Road Mileage	905.6 miles
County-owned Bridges	109 (99 active)
Railways	Canadian Pacific Rail - north/south along eastern border
Hospitals	UVM-Champlain Valley Physicians Hospital
Ferry Terminals to Vermont	1: Cumberland Head, NY to Grand Isle, VT (runs 24/7, all year)

There are 33,091 housing units with a density of 31.9 per square mile and an average household size of 2.32 individuals. There are 31,680 occupied housing units within the county, 36.6% of these households are non-family households. Of the family households in the county 29.0% of which have children under the age of 18 living within them, 46.6% are married couple households, 11.1% are female householders with no husband present, 5.7% are male householders with no wife present, the average family size is 2.79. Individuals living alone comprise 27.0% of the households, 11.6% of which are individuals over the age of 65 living alone. Housing tenure in the county is

68% owner-occupied units, and 32% renter occupied. The majority of housing units in the county are 1-unit structures 63.8%, with 21.2% having 2-or-more units per structure, and 15% are mobile homes and all other types of housing units.

The population of the county has a median age of 39.4 with 105.2 males for every 100 females. There is 18.2% of the total population under the age of 18, 13.9% between the ages of 18 and 24, 24.1% between the ages of 25 to 44, 28.3% between 45 and 64, and 15.4% aged 65 and older. The population is mostly white 91%, with 4.2% identifying as Black/African American, 0.2% as American Indian/Alaska Native, 1.5% Asian, 2.8% as Hispanic/Latino, and 1.6% as other.

CLINTON COUNTY NY POPULATION				
Municipality	Population 1990	Population 2000	Population 2010	% change between 1990 and 2010
Town of Altona	2,775	3,160	2,887	4%
Town of AuSable	2,870	3,015	3,146	10%
Town of Beekmantown	5,108	5,326	5,545	9%
Town of Black Brook	1556	1660	1497	-4%
Town of Champlain	5,796	5,791	5,754	-1%
Town of Chazy	3890	4,181	4,284	10%
Town of Clinton	663	727	737	11%
Town of Dannemora	5232	5149	4898	-6%
Town of Ellenburg	1,847	1,812	1,743	-6%
Town of Mooers	2995	3404	3592	20%
Town of Peru	6,254	6,370	6,998	12%
Town of Plattsburgh	17231	11190	11870	-31%
Town of Saranac	3,710	4,165	4,007	8%
Town of Schulyer Falls	4,787	5,128	5,181	8%
City of Plattsburgh	21,255	18,816	19,989	-6%
Village of Champlain*	1,273	1,173	1,101	-14%
Village of Dannemora*	4,005	4,005	3,936	-2%
Village of Keeseville*	972	1,009	1,815	87%
Village of Rouses	2,377	2,277	2,209	-7%
Clinton County	85,969	79,894	82,128	-4%

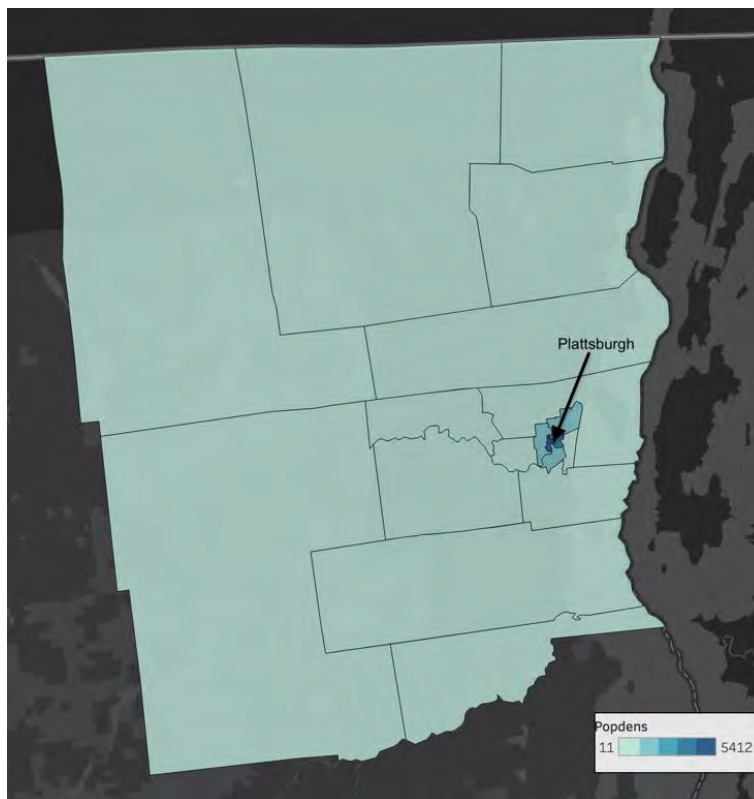
*Populations of villages are included within the respective town also

The median household income was \$52,759 (in 2017 inflation adjusted dollars), families had a median income of \$66,726. The county has a per capita income of \$26,772. Median earnings for full-time, year-rounders was \$44,171 for males and \$40,593 for females. Within the county the population living below the poverty line consists of 15.7% of individuals, 11% of families, 20% are under the age of 18, and 6.9% are 65 and older.

Of the population aged 25 years and older, 37.1% were high school graduates, 17.9% had some college, 9.9% had an associate degree, 11.2% a bachelor’s degree, and 10.6% a graduate or professional degree.

Population distribution in the county is uneven, with a majority of the county having less than 105 people per square mile, and a large concentration of the population within Plattsburgh (city and town). Nearly 30% of the population of Clinton county lives within the county seat which is only 3% of the county’s total land area, indicated in the map by the area of dark blue census blocks.

Development in Clinton County varies widely by town, with some areas experiencing large population growth within the last 20 years (i.e. the Village of Keeseville) and other areas enduring steady outmigration of residents. Of the 15 cities and towns within the county 9 saw population increases while the City of Plattsburgh and 6 towns decreased in population size (Black Brook, Champlain, Dannemora, Ellenburg, and the Town of Plattsburgh). Towns encourage new development outside of flood zones. The County population has dropped slightly, 2%, since the last plan and this population decrease has been uniform among the jurisdictions. The jurisdictions have had no development, nor is any development planned that appreciably increased risk in any of



A map demonstrating the population density of Clinton County, a majority has low density while the census blocks within Plattsburgh indicate high population density.

these jurisdictions. Many jurisdictions continue to be impacted by seasonal flooding, particularly floods caused by ice jams. Many towns within Clinton County were impacted by Tropical Storm Irene, and the associated high-water flood event in Lake Champlain. For a full description of the vulnerability to natural hazards please see Section 4.

Climate Data:

Clinton County has four seasons, an average of 35 inches of rain, and 73 inches of snow per year with precipitation occurring on average 131 days of the year. There are on average 159 days of sun annually.

The average annual high temperature is 53.8°F and the average annual low is 35.2°F, while the monthly averages are listed in the table above. The temperatures in the winter months are most severe in January and February where the average highs are both below freezing. In January and

	J	F	M	A	M	J	J	A	S	O	N	D
Average High (F)	26	29	39	53	66	75	80	77	68	56	44	32
Average Low (F)	8	9	21	34	45	55	60	58	49	38	29	16
Average Precip (inches)	2.32	1.81	2.32	2.95	3.03	3.39	3.23	3.74	3.43	2.8	2.91	2.48

source: <https://www.usclimatedata.com/climate/plattsburgh/new-york/united-states/usny1143>

February there have been several severe cold events that have resulted in temperatures reaching down to -60°F with windchill (recorded 1/17/1997). Artic air masses also have the potential to settle in the area, causing consecutive days of temperatures below freezing, such as in February of 2015 where only a single day had a high temperature (34°F) above freezing. In the Summer months, July is typically the hottest month with usually no more than 3 extreme heat days (days where it is over 80°F) in a row. Further information regarding extreme temperature events will be provided in section 4.

Snowfall is typically from November- April, though snowfall has been recorded as early as October and as late as June. Snowfall totals vary through the region, as the county has a wide range of elevations within its bounds.

Clinton County has three municipalities that are registered as Climate Smart Communities with the New York State government (City of Plattsburgh, Town of Dannemora, Town of Black Brook). The certification is valid for 5 years. Although most points awarded are based upon the ten items listed below the program was revised in April 2020 to award points for innovation and ability to demonstrate reductions in greenhouse gasses (GHG). To qualify to be a registered Climate Smart Community the governing body must adopt a resolution that includes all ten elements listed below and submit to the Department of Environmental Conservation:

1. Build a climate-smart community.
2. Inventory emissions, set goals, and plan for climate action.
3. Decrease energy use.
4. Shift to clean, renewable energy.
5. Use climate-smart materials management.
6. Implement climate-smart land use.
7. Enhance community resilience to climate change.
8. Support a green innovation economy.
9. Inform and inspire the public.
10. Engage in an evolving process of climate action.

Drainage System:

The majority of Clinton County is within the Lake Champlain Basin with a small portion of the Northwestern part of the county falling into the St. Lawrence/Great Lakes Watershed. The Lake Champlain watershed is divided into three main sub-watersheds: Chazy, Saranac, and AuSable. The watersheds in the county all drain to the east into Lake Champlain, all three watersheds stretch into the Adirondack Park.

The Chazy basin has two main rivers the Great Chazy and the Little Chazy. The main source of The Great Chazy River is Chazy Lake located between Lyon and Ellenburg mountains in the Town

of Dannemora and is 46 miles long. The Great Chazy empties into Lake Champlain at King Bay in the Town of Champlain. The Saranac River is an 81-mile-long river that begins north of Upper Saranac Lake, and the mouth of this river is located adjacent to the Wastewater Treatment Facility in Plattsburgh, NY. The AuSable River, which also forms a natural boundary between Clinton and Essex County is a 94-mile-long river that empties into Lake Champlain slightly North of Port Kent, NY.

With the exception of the portion of the county within the St. Lawrence watershed, all watersheds have a general drainage direction of Northeast, and ultimately empty into Lake Champlain. The St. Lawrence watershed drains Northeast into the St. Lawrence River.



The major river drainage basins in Clinton County

History and Development:

The following information was taken from the Clinton County Soil Report. The first known inhabitants in the Champlain Valley were the Algonkians about 8,000 years ago. About 1300 A.D., Mohawk tribes moved into the area driving the Algonkians to the east and north. For several generations, rivalry existed between the two native groups making permanent settlement by other groups unsafe.

Samuel de Champlain entered Lake Champlain from the St. Lawrence Valley in 1609. His voyage allowed the French to claim the entire Champlain Valley until 1759. Development did not occur because of a lack of manpower coming from French Canada. Following four major wars from 1689 to 1763 among the French, British and Indians, the victorious British began a few settlements along the shore of Lake Champlain. However, more rapid settlement took place after the American Revolution around 1783.

Most of the settlers became independent farmers. After providing shelter, the most pressing matter was clearing trees and stones from the land. The first consumer item from the land was potash, a byproduct of burning felled trees. Later, farmers sold lumber and wheat to markets in Canada. Streams were impounded to run gristmills, sawmills, tanneries, asheries, and iron forges. Iron ore deposits were discovered in 1806 on Arnold Hill in the Town of Ausable, and later more deposits

were mined within several other towns. Even in 1870, however, most people in Clinton County were engaged in agriculture.

The county was named after Governor George Clinton. It was established in 1788 from a huge area that once included the present-day counties of Clinton, Essex, Franklin, and Washington.

The Battle of Plattsburgh, September 11, 1814 (taken from history.com): In early September 1814, a British army under George Prevost (1767-1816) entered New York State from Canada and advanced toward Plattsburgh. British ground troops soon engaged in skirmishes with the Americans. Then, on September 11, a British naval squadron under Captain George Downie sailed into battle against a smaller American naval force under Master Commandant Thomas Macdonough (1783-1824), who was waiting at Plattsburgh Bay on Lake Champlain. Shortly after the battle began, Downie was killed, and after several hours of fighting, the British surrendered. Prevost called off the land battle, and the British retreated to Canada.

Forestry and The Paper Industry:

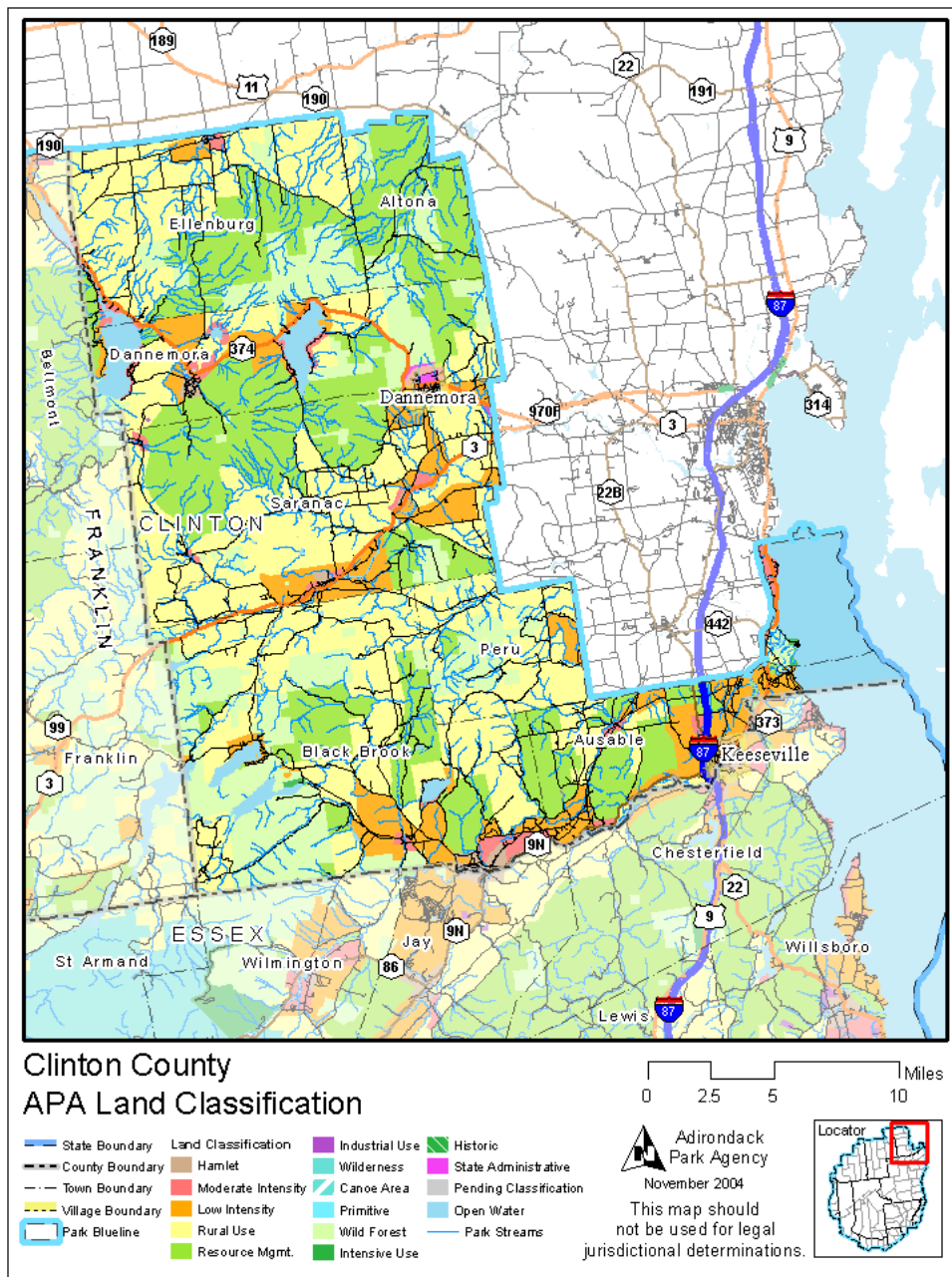
A large portion of Clinton County is forested, particularly the southwest portion. Throughout the county's history the paper industry has been important in the development of the region through companies such as Georgia Pacific (150 people were employed at this plant as of 2013) and historically Imperial Wallcoverings. According to a 2011 New York State Energy Research and Development Authority (NYSERDA) report, every 1000 acres of forested land in New York State supports three forestry-based forest-based manufacturing, forestry, and logging jobs. The same report estimates that in the Adirondacks 10,000 jobs are provided by wood and paper-product companies. Trees within the county are harvested for logs, pulpwood, and fuelwood. There are also maple syrup producers located throughout the county. According to the U.S. Forest Service, two thirds of Clinton County's land base is commercial forest land, capable of producing or is currently producing crops of industrial wood.

New York State led the nation in pulpwood production in 1912, and the forestry industry was important in the historic development of the county. Important paper producing tree species include sugar and red maple, yellow birch, beech, red oak, and white pine. Saw timber for lumber that is harvested in the county mainly consists of white pine, red pine, red oak, black cherry, white ash, and sugar maple. Due to uncertain energy prices, demand for firewood is growing rapidly. Hardwoods make the best firewood and include cherry, oak, beech, maple, birch, and hop hornbeam. However, despite these resources according to the 2017 American Community Survey estimates jobs in the Farming/Fishing/Forestry only accounted for approximately 1% of jobs in the county.

This is reflective of the large focus on industrial development in the county, though large paper industry has dwindled in recent years (Imperial Wallcovering closed in 1998, Georgia-Pacific has downsized significantly but remains open). Within the county the challenge has been repurposing large industrial buildings as they have shifted away from production of paper products.

Adirondack Park Agency:

Approximately half of Clinton County is within the bounds of the Adirondack Park and therefore under the jurisdiction of the Adirondack Park Agency. Upon its creation in 1971 the Adirondack Park Agency's first task was to develop, in consultation with the Department of Environmental Conservation, a management plan for the administration of all State land in the Adirondack Park. The resulting plan, the Adirondack Park State Land Master Plan (Master Plan), is a refinement of the previous studies and by law, still governs the management of State land.



source: inandaroundtheadirondackpark.com/Adirondack_Directory_Counties.htm

The Master Plan classifies State land within the Adirondack Park according to its characteristics and its ability to withstand use into seven basic categories: Wilderness, Primitive, Canoe, Wild Forest, Intensive Use, Historic and State Administrative. The New York State Department of Environmental Conservation administers state land within the park boundary. The following state land classification definitions are taken from the Adirondack Park State Land Master Plan.

Wilderness: (0 acres of Clinton County are designated Wilderness) A wilderness area, in contrast with those areas where man and his own works dominate the landscape, is an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. A wilderness area is further defined to mean an area of state land or water having a primeval character, without significant improvement or permanent human habitation, which is protected and managed so as to preserve, enhance and restore, where necessary, its natural conditions, and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least ten thousand acres of contiguous land and water or is of sufficient size and character as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological or other features of scientific, educational, scenic or historical value.

Primitive: (951 acres of Clinton County are Primitive) A primitive area is an area of land or water that is either:

1. Essentially wilderness in character but, (a) contains structures, improvements, or uses that are inconsistent with wilderness, as defined, and whose removal, though a long-term objective, cannot be provided for by a fixed deadline, and/or, (b) contains, or is contiguous to, private lands that are of a size and influence to prevent wilderness designation; or,
2. Of a size and character not meeting wilderness standards, but where the fragility of the resource or other factors require wilderness management.

Canoe: (0 acres of Clinton County are Canoe Areas) A canoe area is an area where the watercourses or the number and proximity of lakes and ponds make possible a remote and unconfined type of water-oriented recreation in an essentially wilderness setting.

Wild Forest: (69,551 acres of Clinton county are Wild Forest) A wild forest area is an area where the resources permit a somewhat higher degree of human use than in wilderness, primitive or canoe areas, while retaining an essentially wild character. A wild forest area is further defined as an area that frequently lacks the sense of remoteness of wilderness, primitive or canoe areas and that permits a wide variety of outdoor recreation.

Intensive Use: (337 acres of Clinton County are Intensive Use) An intensive use area is an area where the state provides facilities for intensive forms of outdoor recreation by the public, i.e. campground or day use areas.

Historic: (0 acres of Clinton County are Historic) Historic areas are locations of buildings, structures or sites...that are significant in the history, architecture, archeology or culture of the Adirondack Park, the state or the nation; that fall into one of the following categories;-- state historic sites;-- properties listed on the National Register of Historic Places;-- properties recommended for nomination by the Committee on Registers of the New York State Board For Historic Preservation; and that are of a scale, character and location appropriate for designation as

an historic area under this master plan and the state has committed resources to manage such areas primarily for historic objectives.

State Administrative: (1,015 acres of Clinton County are State Administrative) State administrative areas are areas where the state provides facilities for a variety of specific state purposes that are not primarily designed to accommodate visitors to the Park.

Additionally, in 1973, the New York State legislature adopted the Adirondack Park Land Use and Development Plan and Map. The text of the Plan is found in the Adirondack Park Agency Act. Section 805 of the Act describes the different private land use area classifications as follows:

Hamlet areas: (3,120 acres of Clinton County are Hamlet) range from large, varied communities that contain sizable permanent, seasonal and transient populations with a great diversity of residential, commercial, tourist and industrial development and a high level of public services and facilities, to smaller, less varied communities with a lesser degree and diversity of development and a generally lower level of public services and facilities.

Moderate intensity use areas: (7,263 acres of Clinton County are Moderate Intensity Use) those areas where the capability of the natural resources and the anticipated need for future development indicate that relatively intense development, primarily residential in character, is possible, desirable and suitable. These areas are primarily located near or adjacent to hamlets to provide for residential expansion. They are also located along highways or accessible shorelines where existing development has established the character of the area. Those areas identified as moderate intensity use where relatively intense development does not already exist are generally characterized by deep soils on moderate slopes and are readily accessible to existing hamlets.

Low intensity use areas: (31,460 acres of Clinton County are Low Intensity Use) those readily accessible areas, normally within reasonable proximity to a hamlet, where the physical and biological resources are fairly tolerant and can withstand development at an intensity somewhat lower than found in hamlets and moderate intensity use areas. While these areas often exhibit wide variability in the land's capability to support development, they are generally areas with fairly deep soils, moderate slopes and no large acreages of critical biological importance. Where these areas are adjacent to or near hamlets, clustering homes on the most developable portion of these areas makes possible a relatively high level of residential units and local services.

Rural use areas: (121,085 acres of Clinton County are Rural Use) those areas where natural resource limitations and public considerations necessitate fairly stringent development constraints. These areas are characterized by substantial acreages of one or more of the following: fairly shallow soils, relatively severe slopes, significant ecotones, critical wildlife habitats, proximity to scenic vistas or key public lands. In addition, these areas are frequently remote from existing hamlet areas or are not readily accessible. Consequently, these areas are characterized by a low level of development and variety of rural uses that are generally compatible with the protection of the relatively intolerant natural resources and the preservation of open space. These areas and the

resource management areas provide the essential open space atmosphere that characterizes the park.

Resource management areas: (72,073 acres of Clinton County are Resource Management) those lands where the need to protect, manage and enhance forest, agricultural, recreational and open space resources is of paramount importance because of overriding natural resource and public considerations. Open space uses, including forest management, agriculture and recreational activities, are found throughout these areas. Many resource management areas are characterized by substantial acreages of one or more of the following: shallow soils, severe slopes, elevation of over twenty-five hundred feet, flood plains, proximity to designated or proposed wild and scenic rivers, wetlands, critical wildlife habitats or habitats of rare and endangered plant and animal species. Other resource management areas include extensive tracts under active forest management that are vital to wood-using industry and necessary to insure its raw material needs. Important and viable agricultural areas are included in resource management areas, with many farms exhibiting a high level of capital investment for agricultural buildings and equipment. These agricultural areas are of considerable economic importance to segments of the park and provide for a type of open space which is compatible with the park's character.

Industrial use areas: (36 acres of Clinton County are Industrial use) those areas that are substantial in size and located outside of hamlet areas and are areas (1) where existing land uses are predominantly of an industrial or mineral extraction nature or (2) identified by local and state officials as having potential for new industrial development.

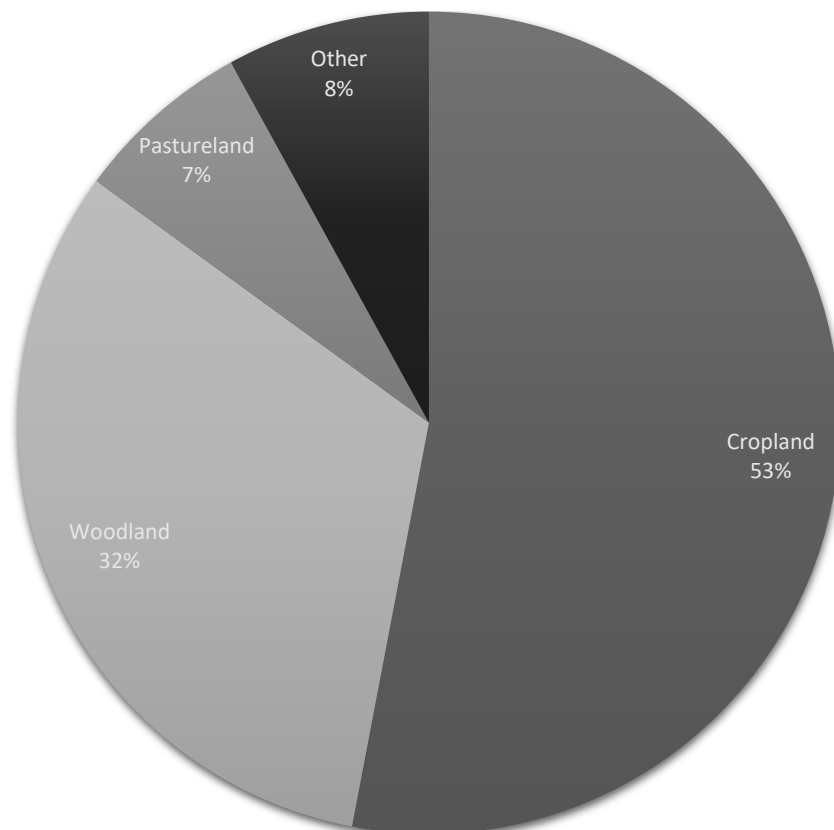
Development and Land Use:

The Adirondack Park Agency regulates development in accordance with these classifications. Future development in the region is regulated by the APA plan/permit review process. The APA provides land-use and density maps and comprehensive technical assistance and oversight for commercial and residential development proposals within their jurisdiction; local zoning regulations still apply both inside and outside of the Park. While a detailed full review of Agency development guidelines is beyond the scope of this plan, it should be noted that the permitting process is administered according to project classification and land use classification.

In regard to land use, within the Park, the APA is the preeminent authority. The Adirondack Park Agency Act allows any local government within the Park to develop its own local land use programs which, if approved by the Agency, may transfer some permitting authority from the Agency to the local government's jurisdiction. In 2010, the NYS legislature proposed an Adirondack Park Local Government Planning Fund. The APA encourages the use of NYS Smart Growth opportunities.

Agriculture:

According to the 2017 U.S. Department of Agriculture's (USDA) Census of Agriculture County Profile for Clinton County 161,605 acres of the county are farmland (22.6% of the total county land area). The land area in farms increased 10% from 2012-2017. The main crop in the county is forage, followed by corn for silage. Agriculture is an important economic driver in the county, in 2017 the market value of products sold that were produced on farms in Clinton county was \$167.8million (an average of \$285,356 per farm) ranking it 11th in the state. Only 27% of the product sales were due to the selling of crops, the other 73% were livestock, poultry, and related



Land in Farms by Use: Information taken from the 2017 USDA Census of Agriculture County Profile for Clinton County.

CENSUS OF AGRICULTURE CLINTON COUNTY 2017			
	2017	2012	Percent change
Number of farms	588	603	-2
Land in farms	161,605	147,229	10
Ave size of farm	275	244	13
Market value of product sold	\$167,789,000	\$148,999,000	13
Crop sales	\$44,559,000	\$42,340,000	5
Livestock sales	\$123,230,000	\$106,659,000	16
Average per farm	\$285,358	\$247,096	15

products. The dairy industry is largely important in the region producing roughly \$69 million in total products sold, ranking the county 14th out of 51 dairy-producing counties in the state and 124th of the 1,892 counties in the U.S. “Poultry and egg” production and sales (specific statistics not disclosed) rank Clinton County first in the state of New York (57 counties in the state produce this commodity). Of the crops in the county “fruits, tree nuts, and berries” produced \$24 million in sales in 2017, partially due to the large production of apples, specifically McIntosh, in the county.

Agriculture has changed little over the last five years, seeing a slight increase in cropland (53% in 2017, 50.3% in 2012) and a slight decrease in woodland land uses (32% in 2017, 34% in 2012). Of the individuals working on farms in the county, 67% are male, and 66% are between the ages of 35 and 64. Half of the farms are between 50 and 500 acres in size. Agriculture remains to be a large component of the economy of Clinton County.

Mining:

Clinton County has an extensive history of iron mining, and many towns within the county began as mining towns. The most notable of these is perhaps Lyon Mountain, however, iron was mined all over Clinton County and was an important part of the historic economic development of the county. It was a popular industry in the 1800s within the region and had dwindled significantly by the mid 1900s. Aside from iron, granite was also mined from the landscape. Currently there are no active mines within Clinton County, only quarries and sand/gravel pits.

According to the Clinton County Soil Survey: The discovery of iron in the Arnold Hill and Lyon Mountain areas brought a major influx of settlers to the county. In 1875, the first railroad was built

by the Delaware and Hudson Company to haul iron ore, eventually replacing many of the steamships. Several miles of plank roads were also developed near Lyon Mountain and Standish. Forges throughout the county turned iron into tools, wheels, and other implements. Also, glass was manufactured at Redford on the Saranac River in the mid 1800s. A developing transportation system on Lake Champlain during this period carried iron and glass both north to Canada, and south to other markets.

Tourism:

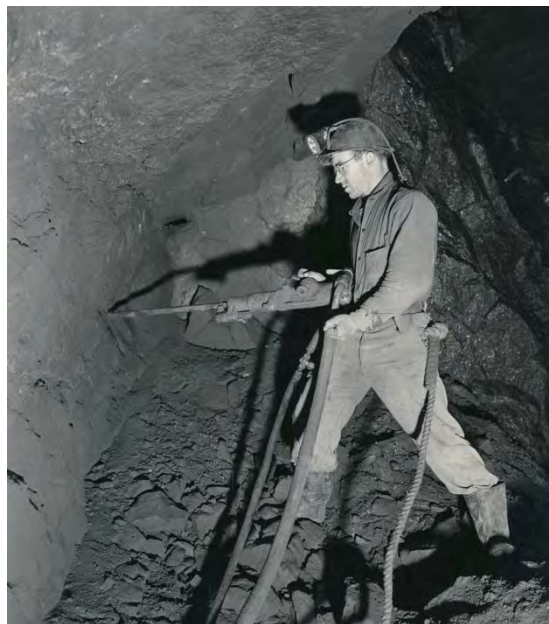
A wide range of outdoor recreational activities are possible throughout the county ranging from hiking to boating making tourism an important industry in the county. The lake provides boating and there are 9 marinas dotted along the county's coast to the west. A marina managed by the city of Plattsburgh provides 36 slips and 25 moorings within walking distance of the downtown district. There are also several beaches that provide recreation for locals and tourists.

Most notably the City of Plattsburgh hosts several bass fishing tournaments every year that draw in an estimated \$1.2 million in tourism dollars. These tournaments span the summer months in the county and are often 2 to 3-day events that draw in anglers and their families bringing a large influx of tourists to the area. Approximately 75% of the participants in these tournaments use local commercial lodging and spend on average \$250 per person per day (2017) within the county which supports the service industry throughout the region. These tournaments also have a positive impact upon the tax-base of the county, generating revenue from outside money.

Away from the lake there are hiking opportunities in the higher elevations, particularly Lyon Mountain the high point of Clinton County. The mountain is part of the Adirondack Fire Tower Hiking Challenge. The county also provides many nature trails throughout the region.

SUNY/Clinton Community College/ William H. Miner Institute:

SUNY Plattsburgh, Clinton Community, and the William H. Miner institute provide educational opportunities in a variety of areas to the local population. SUNY Plattsburgh is the largest of the three institutions with approximately 5,704 students, enrolling roughly 970 freshmen every year. The facility provides 755 jobs (540 full and part time academic jobs, and 270 administrative jobs) and is part of the SUNY system. The college offers a variety of undergraduate and graduate degrees



Miner circa 1940 in a mine owned by Republic Steel, Lyon Mountain, NY. Photo credit: Lyon Mountain Mining and Railroad Museum

in the liberal arts and works in partnership with Clinton Community and William H. Miner Institute to provide hybrid programs to provide educational and vocational opportunities. Clinton Community College is a smaller college located at Bluff Point, there are approximately 1,376 students, and 142 staff. The William H. Miner institute is an active research farm that works in cooperation with SUNY Plattsburgh, University of Vermont, and Vermont Technical College. The institute also provides educational opportunities for the local public by hosting tours and events to educate people about agriculture and other related fields, as well as on-site museum about the history of the farm.

University of Vermont- Champlain Valley Physician's Hospital:

The hospital is a level III trauma center with approximately 300 beds, it is a regional medical center serving Clinton, Essex, and Franklin counties. Over 2,250 people are employed by this not-for-profit organization and is one of the single largest employers in the county. There are a large variety of services including but not limited to emergency medicine, renal care, heart surgery, oncology, mental health, and a nursing home unit. The level III designation indicates that UVM-CVPH is capable of providing 24-hour emergency medicine, has transfer agreements with level I and level II facilities, provides back-up to rural hospitals, and is involved with prevention and outreach efforts. The hospital is an important provider of healthcare and jobs within the county.

Clinton Correctional Facility:

This facility located in Dannemora, NY is the third oldest in the state and the largest maximum-security prison. It opened in 1845 and was built largely by the inmates brought there to work in the mines of Dannemora and Lyon Mountain. The facility has a capacity to house 2,959 inmates and provides jobs for nearly a thousand guards as well as civilian jobs. The main occupation provided to inmates in the facility is the garment shop, however there is other vocational training available (computers, drafting, custodial and building maintenance, flooring, masonry, horticulture, electrical, and printing). The Church of St. Dismas, the Good Thief stands on the facility grounds and was built between 1939 and 1941 by inmate labor from locally sourced fieldstones and stones from the original cell block of the prison. The church was added to the National Register of Historic Places in 1991.

SECTION 4: HAZARD IDENTIFICATION AND RISK ASSESSMENT

Update Process Summary:

The risk assessment section provides a factual and scientific base to justify activities proposed by Clinton County in their mitigation strategy section. The two sections are linked by this understanding and are additionally informed by the hazard rankings, to formulate a plan of action for the county.

Hazards that may affect Clinton County are identified and defined in terms of their location and extent, magnitude of impacts, previous events, and probability of future events. Two hazards are ranked as high hazards, four are ranked as medium hazards and ten hazards are ranked as low hazards. This ranking does not predict the future; a low ranked hazard could be the next major disaster to befall a location, and so due weight should be given to each hazard, and to the potential loss estimates for each hazard.

Data sources are noted in the narrative, map or tables. The Works Cited Appendix provides full bibliographic information for each source used in the updated plan. The National Center for Environmental Information (NCEI), what in the past was called National Climatic Data Center (NCDC), site was used to update hazard events from 2011 to 2018. Maps were utilized from the 2014 State Hazard Mitigation Plan. The raw NCEI data can be located in the Appendix.

The previous tables indicate the hazards that were addressed in the 2014 Clinton County Hazard Mitigation Plan. The 2021 Clinton County Hazard Mitigation Plan Update includes hazards that

HAZARDS ADDRESSED IN THE 2014 CLINTON COUNTY HAZARD MITIGATION PLAN	
Drought	Severe Storms/ Hail/ High Winds
Earthquake	Subsidence
Extreme Temperatures (Cold)	Tornadoes
Flood/Ice Jams	Wildfire
Hurricane	Winter Storms/Heavy Snowfall/Ice Event
Landslides	

were not addressed in the 2011 plan. The 2014 New York State Hazard Mitigation Plan was reviewed to provide a list of the hazards that would be considered for the updated 2021 plan. Transportation (Truck and Rail) events are the only non-natural hazard that will be addressed in the updated plan.

HAZARDS ADDRESSED IN THE 2021 CLINTON COUNTY HAZARD MITIGATION PLAN	
Avalanche	Hurricanes
Climate Change	Ice Storms
Dam Failure	Land Subsidence
Drought	Landslides
Earthquake	Seiche Floods
Extreme Cold	Severe Winter Storms
Extreme Heat	Thunderstorms
Floods	Transportation (Truck)
Hail Events	Transportation (Rail)
High Winds/ Tornadoes	Wildfires

The table above indicated the hazards that were identified for the updated plan and are outlined in further detail within this section.

Within the hazard profiles, thunderstorms, and seiche floods will not be profiled individually. Instead these two hazards will be described in sections dedicated to other related hazards. Thunderstorms will be combined with hail and high winds/tornadoes. Seiche floods will be described as part of flood hazards.

Hazard Identification:

Presidential Disaster and Emergency Declarations are issued when it has been determined that state and local governments need assistance in responding to a disaster event. The following Table identifies Presidential Disaster and Emergency Declarations issued between 1993 (the earliest event listed for the county by FEMA) and 2018 that have affected Clinton County. It is important to note that for instances where hurricanes or tropical storms initiated a disaster declaration, it was largely as a result of the damage caused by the excessive precipitation and flooding effects of coastal storms, not the damaging wind speeds. Public assistance amounts are reported for the state by FEMA. For some events, there are no data available for public assistance dollars.

DISASTER DECLARATIONS FOR CLINTON COUNTY 1993-2018				
Declaration #	Type	Incident Dates	Declaration Date	Public Assistance Dollars Approved
EM-3107	Severe Blizzard	3/13/1993- 3/17/1993	3/17/1993	\$11,978,568
DR-1095	Severe Storms/ Flooding	1/19/1996- 1/24/1996	1/24/1996	
DR-1148	Severe Storms/ Flooding	11/08/1996- 11/15/1996	12/09/1996	
DR-1196	Severe Winter Storms	1/05/1998- 1/17/1998	1/06/1998	
Declaration	Type	Incident Dates	Declaration	Public Assistance

#			Date	Dollars Approved
DR-1233	Severe Storms/ Flooding	6/25/1998-7/10/1998	7/7/1998	
EM-3155	West Nile Virus Threat	5/22/2000- 11/01/2000	10/11/2000	\$4,668,512
DR-1391	New York Terrorist Attack	9/11/2001	9/11/2001	
DR-1415	Earthquake	4/20/2002	5/16/2002	
EM-3186	Power Outage	8/14/2003- 8/16/2003	8/23/2003	\$5,419,372
DR-1534	Severe Storms/ Flooding	5/13/2004-6/17/2004	8/03/2004	\$18,467,868
EM-3262	Hurricane Katrina	8/29/2005- 10/01/2005	9/30/2005	\$2,760,836
DR-4020	Hurricane Irene	8/26/2011- 9/5/2011	8/31/2011	Individual Assistance Applications Approved: 22,892 Individual/Household Assistance Approved: \$102,809,877 Public Assistance Grants: \$547,870,507
DR-1993	Severe Storms/ Flooding/ Tornadoes/ Straight-line Winds	4/26/2011-5/08/2011	6/10/2011	\$35,684,182
EM-3351	Hurricane Sandy	10/27/2012- 11/08/2012	10/28/2012	
DR-4129	Severe Storms/ Flooding	6/26/2013- 7/10/2013	7/12/2013	\$63,530,413
DR-4322	Severe Winter Storms/ Snowstorm	3/14/2017-3/15/2017	7/12/2017	\$27,614,322
EM-3434 DR-4480	Covid-19 Pandemic	1/20/2020-ongoing	3/13/2020	

Since 1993, declarations that have impacted Clinton County have been issued for a variety of hazard events, including hurricanes, severe winter storms, and flooding. One presidential disaster was declared for the 2002 earthquake that impacted Clinton County and surrounding areas. A unique Presidential Emergency Declaration was issued in September 2005; through Emergency Declaration 3262, President George W. Bush declared that a state of emergency existed in the whole of New York and ordered federal aid to supplement the State and local response efforts to help people evacuated from their homes due to Hurricane Katrina. All

counties within New York, including Clinton County, were indirectly affected by Hurricane Katrina as a result of evacuee assistance.

A ranking of the hazards by the mitigation advisory committee took place. They ranked the hazards for its impact to the entire area of Clinton County. Disaster declarations and NCDRC data was used during this ranking of hazards. Some of the hazards can and do occur annually, such as severe winter weather and flood events. Extreme flood and winter events can incur financial impacts to the jurisdictions and residents in Clinton County. Earthquakes and ice storms may not occur annually, but when events do occur, the county can be impacted financially from the event. Dam failures are not expected to occur, but when do dams fail, impacts can be to a wide or specific area of the county. Climate Change was not ranked as a hazard, but the effects and impacts to the profiled hazards are addressed in the plan. It is important to note that these rankings are not predictive, and just because a hazard earned a low hazard ranking, it could be the next hazard to befall a locality.

CLINTON COUNTY HAZARD RANKING FOR 2021 UPDATE				
		Impact		
		High	Med	Low
Probability	High	Floods, High Winds and Tornadoes		Extreme Cold, Ice Storms, Severe Winter Storms, Thunderstorms
	Med			
	Low		Drought, Earthquake, Hail Storms	Avalanche, Extreme Heat, Hurricanes, Landslides, Seiche Floods, Transportation (Truck and Rail), Wildfires

The following criteria were utilized for the hazard rankings:

- Probability/ Frequency were rated using the following as guideline
 - Low probability (less than once every 50 years)
 - Medium probability (once every 8-50 years)
 - High probability (once every 1-7 years)
- Impact used the following as a guideline for ranking
 - High Impact (\$1 million or more in damages)
 - Medium Impact (\$500,000 to \$1 million in damages)

- Low Impact (Less than \$500,000 in damages)

Towns, villages, and the city also completed hazard event rankings for their individual towns and villages, see the specific Town and Village profiles for these tables. This ranking may be different from the overall county hazard ranking, as more specific geographic areas (towns and villages) are performing the hazard ranking. Individual town and village rankings may also be influenced by specific local disasters; i.e. a location that had an event a few years ago, may be more likely to give that event more weight in the hazard rankings. These rankings can be found in the Town and Village Files located at the end of section 6.

A review of the previous vulnerability assessment, combined with analysis of new data and information was conducted for each hazard to identify the impact of both natural and man-made hazard events on people, buildings, infrastructure, and the municipality. County, town and village officials believed that this could be a potential hazard and wanted it included as a hazard in this updated plan.

Each hazard is discussed in terms of its potential impact on individual municipalities, including the types of structures that may be at risk. This assessment allows the county and its municipalities to focus on and prioritize local mitigation efforts on areas that are most likely to be damaged, or to require early response to a hazard event. A vulnerability analysis was performed which identifies structures, critical facilities, and/or populations that may be impacted during hazard events and describes what events can do to physical, social, and economic assets. Depending upon data availability, assessment results consist of an inventory of vulnerable structures or populations.

The individual towns, villages, and city mitigation sections describe potential loss in that the total structures' assessed value in each town and village is identified. Information is provided regarding the number of structures and the total values, as well as a calculation to indicate an estimate of potential loss.

The number of flood insurance policies per jurisdiction is also described for each jurisdiction in the flood section. There is also information regarding the number and class codes of structures in the floodplains within each Town and Village. This provides a complete flood vulnerability for each jurisdiction, as well as a county wide comparison for flood vulnerability.

4.1 AVALANCHE:

Avalanche is defined as a downhill fall of snow, a rapid downhill flow of a large mass of snow or ice dislodged either from a mountainside or on top from a precipice.

Description:

Avalanches generally occur on slopes greater than 20 degrees (most commonly on slopes between 35 to 50 degrees). Snow accumulates on mountainsides, and creates conditions conducive to have an avalanche occur. Avalanche hazard increases as snow accumulates after major snowfall events, as well as freeze-thaw conditions on slopes. These freeze-thaw conditions result in slip surfaces for new snow accumulations to slide down the mountainside. More than eighty percent of these occur during or just after large snowstorms. The most avalanche-prone months are, in order, February, March, and January. Avalanches caused by freeze-thaw occur most often in April.

When the snow cover is very unstable, nature often broadcasts clear danger signals. Fresh avalanches are the best clue. Snow that cracks, collapses, or makes hollow sounds is also unstable. Weak layers that are found by digging snow pits are signs of unstable snow. Snow that has become wet from thaw or rain can be dangerous.

About ninety percent of all avalanches start on slopes of 30-45 degrees; about ninety-eight percent of all avalanches occur on slopes of 25-50 degrees. Avalanches release most often on slopes above timberline that face away from prevailing winds. This is because leeward slopes collect snow blowing from the windward sides of ridges. Avalanches can occur, however, on small slopes well below timberline, such as gullies, road cuts and small openings in the trees. Very dense trees can anchor the snow to steep slopes and prevent avalanches from starting, however, avalanches can release and travel through a moderately dense forest. Most avalanches occur in the backcountry, outside of developed ski areas.

Extent:

Avalanches can catch skiers, snowshoers, and hikers off guard and can cause them to be buried by snow. These events can cause loss of life or injuries ranging from broken bones and bruising to frostbite.

Location:

The Town of Black Brook, the Town of Saranac, and the Town of Dannemora are the only areas in Clinton County that have an avalanche risk due to the mountains in these towns. Even within these towns the risk to public and private property and human life is low, as there are no structures located within high slope areas.

Previous Occurrences:

There are no reports of any avalanche occurring in Clinton County.

Potential Cascading Impacts:

Avalanche when they occur can impact infrastructure in a number of ways. The destructive force of the movement of a large quantity of snow can result in damages to roads, electric lines, as well as public and private property. Damages to roads can cause closures that can disrupt access to areas as there are often limited road networks in the more mountainous regions of the county. Electric line damages from debris and downed trees can result in localized outages. Electrical outages in the winter can be problematic for residents in lower temperatures experienced in the winter in Clinton County. However, since there have been no avalanches recorded, no damages have been reported.

Potential loss:

Historic avalanches have not occurred in the back-county areas of Clinton County where structures are prohibited by the APA. No potential loss was calculated for avalanches due to this fact. Other areas of the county where structures are located have not been impacted by avalanches.

Additional information:

DEC had developed an Avalanche preparedness brochure for visitors and tourists who recreate in back country areas in the winter. The brochure provides the following basic awareness considerations. (Avalanche Preparedness)

1. Know basic avalanche rescue techniques.
2. Check snow depth and conditions before venturing into the back country.
3. Check new snow fall amounts.
4. Practice safe route finding.
5. Verify degree of slope intended to hike or climb.
6. Check the terrain.
7. Carry basic avalanche rescue equipment, including a loud whistle.
8. Never travel alone.
9. Let someone know your route, and expected return time.
10. Use common sense.
11. Don't be afraid to turn around.

Knowledge and awareness of avalanche probability and conditions will lessen the impact to skiers and people who snowshoe in Clinton County. Hikers, residents and other need to be aware that avalanches can occur in Clinton County and be prepared for these types of events.

Probability of future events:

Clinton County has no recorded avalanche event, and there is a low probability for these events in Black Brook, Dannemora, and Saranac.

- **Low probability** (less than once every 50 years)
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

This hazard is considered a low probability in the back-country areas of these three towns and would have little, if any, impact to the structures in these areas. The DEC monitors snow conditions in the back-country areas and will issue avalanche warnings based upon daily conditions. Local hiking clubs and retail camping stores post daily conditions of trails and other areas and provide educations to back county users.

4.2 CLIMATE CHANGE:

Climate change is a long-term shift in weather patterns: temperature, precipitation, wind and more. While the body of scientific evidence that the climate is changing has been universally accepted by scientists, laymen and other, the complexities within this field of study make it difficult to precisely define the full scope and magnitude of its consequences. However, climate change experts are in agreement that one of the greatest threats posed by global warming is sea level rise, which is expected to increase coastal flood frequency and severity from tropical cyclones, extra tropical cyclones and other severe coastal storms.

This section is not intended to provide a comprehensive review of current scientific evidence and data on climate change, on either a global or jurisdictional scale. It is intended to serve as a guide for identifying potential mitigation activities for New York State agencies and local jurisdictions, and to link these activities to strategies, goals and objectives that address mitigation to the impacts and consequences of climate change. For the purpose of profiling climate change for this plan update, hazards affected by climate change or its consequences are addressed in this section.

While climate change may be due in part to natural processes and forces, it is extremely likely (i.e., with 99-100% certainty) that a significant portion of climate change is due to the influence of human beings on nature. (ClimAID, 2011).

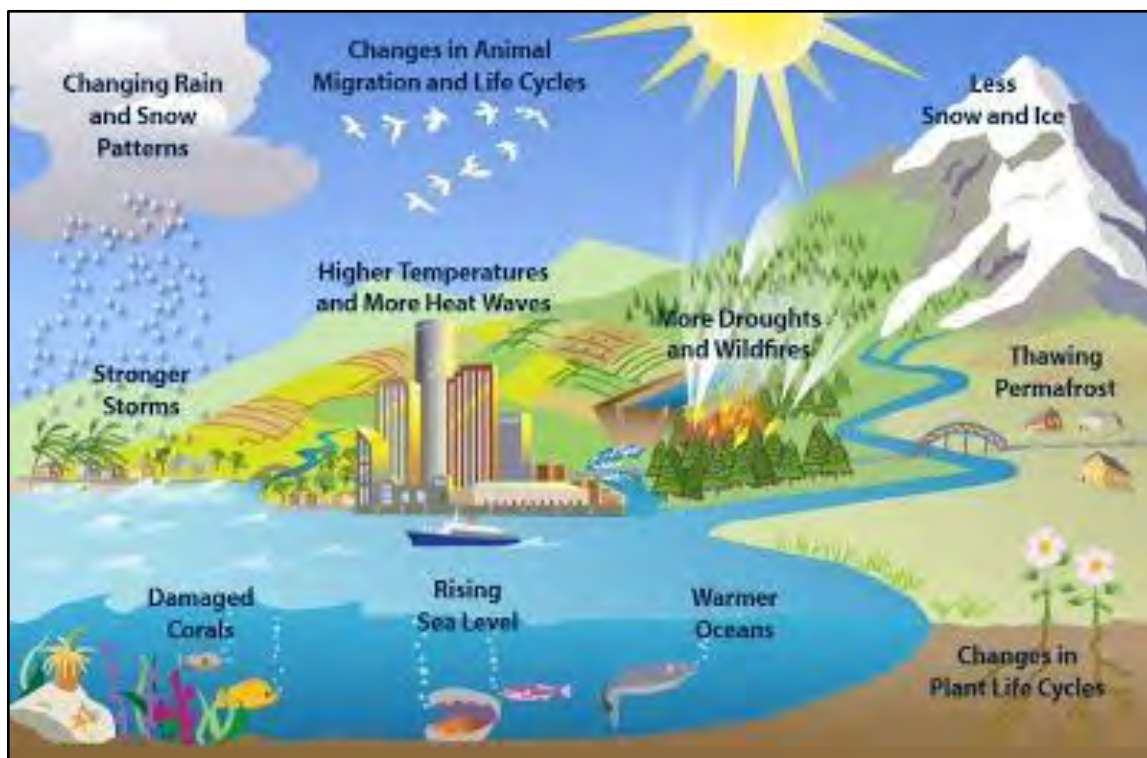
This change in climate will result in altering the current probability of natural hazard events for several hazards. Each of the following hazard events will see an increase of the probability of the event occurring in Clinton County and the Towns and Villages of Clinton County.

Conditions related to climate change are expected to alter both average climate and the frequency and intensity of extreme weather events in New York State, which will, in turn, exacerbate what in the past were considered to be “expected” impacts and consequences of weather events. These conditions will significantly increase the risk to people, property, environment, and the economy. In addition, indirect impacts on infrastructure may be greater than the direct impacts.

New York State Department of Environmental Conservation Policy CP-49 identifies types of environmental variables vulnerable to climate change as:

- Temperature (air, water and ground)
- Precipitation
- Water quantity/quality
- Snow/ice
- Sea level rise
- Storm frequency and intensity
- Humidity
- Evaporation
- Wind speed and direction

These environmental factors also link to other natural hazards and their impacts that are outlined in this plan, which include coastal erosion, flooding, drought, and wildfire.



(image source: NYS Hazard Mitigation Plan 2014)

The following issues highlighted in the ClimAID reports are also identified in the National Climate Assessment Report (September 2013) as issues likely to affect New York State in general, and Clinton County more specifically / importantly.

- Heat waves, coastal flooding due to sea level rise, and river flooding due to more extreme precipitation events will pose a growing challenge to the region's environmental, social, and economic systems. This will increase the vulnerability of the region's residents, especially populations that are already most disadvantaged.
- Infrastructure will be increasingly compromised by climate-related hazards including sea level rise and coastal flooding, and intense precipitation events.
- Agriculture and ecosystems will be increasingly stressed by climate-related hazards, including drought, higher temperatures, sea level rise and coastal flooding, and more extreme precipitation events. A longer growing season may allow farmers to explore new crop options, but this and other adaptations will not be cost or risk-free, and inequities exist in the capacity for adaptation.

- While a majority of states and several municipalities have begun to incorporate the risk of climate change into their planning activities, implementation of adaptation measures is still at early stages.

Climate change will be addressed here as to the effects on the hazards that are profiled in this plan.

Drought:

Climate change will result in the probability of occurrence of drought to be highly likely. Rising summer temperatures, along with little change in summer rainfall patterns, is projected to increase the frequency of short-term (one to three month) droughts. This scenario will lead to impacts on the natural and managed ecosystems across the state. Water management and hydrology are also affected.

Clinton County experienced a small drought event in 2018, because normal rains have not occurred. Farmers first hay crop was reduced by half. Farmers who produce vegetables for sale also had to rely on watering of crops to ensure a harvest. The apple crops of Clinton County were smaller than normal in size due to the drought. This is anecdotal information the contractor obtained from conversations with a local cattle operations' manager, farmers and apple crop operations.

Clinton County should anticipate that drought will be impacted by climate change in the future. These droughts may have a longer duration and intensity. Historic drought data can be found in the relevant section of the hazard identification and risk assessment chapter.

Extreme Temperatures:

Climate change will result in the probability of occurrence of extreme temperature to be highly likely. Temperatures in the Northeast are projected to increase an additional 4.0 to 9.0 degrees Fahrenheit in New York State by the year 2080. Consequences of this change will lead to increased energy usage with direct impact on energy demand and supply.

Since 1970, the annual average temperature in the Northeast has increased by 1.5°F, with winter temperatures rising twice as much. Warming has resulted in many other climate- related changes, including:

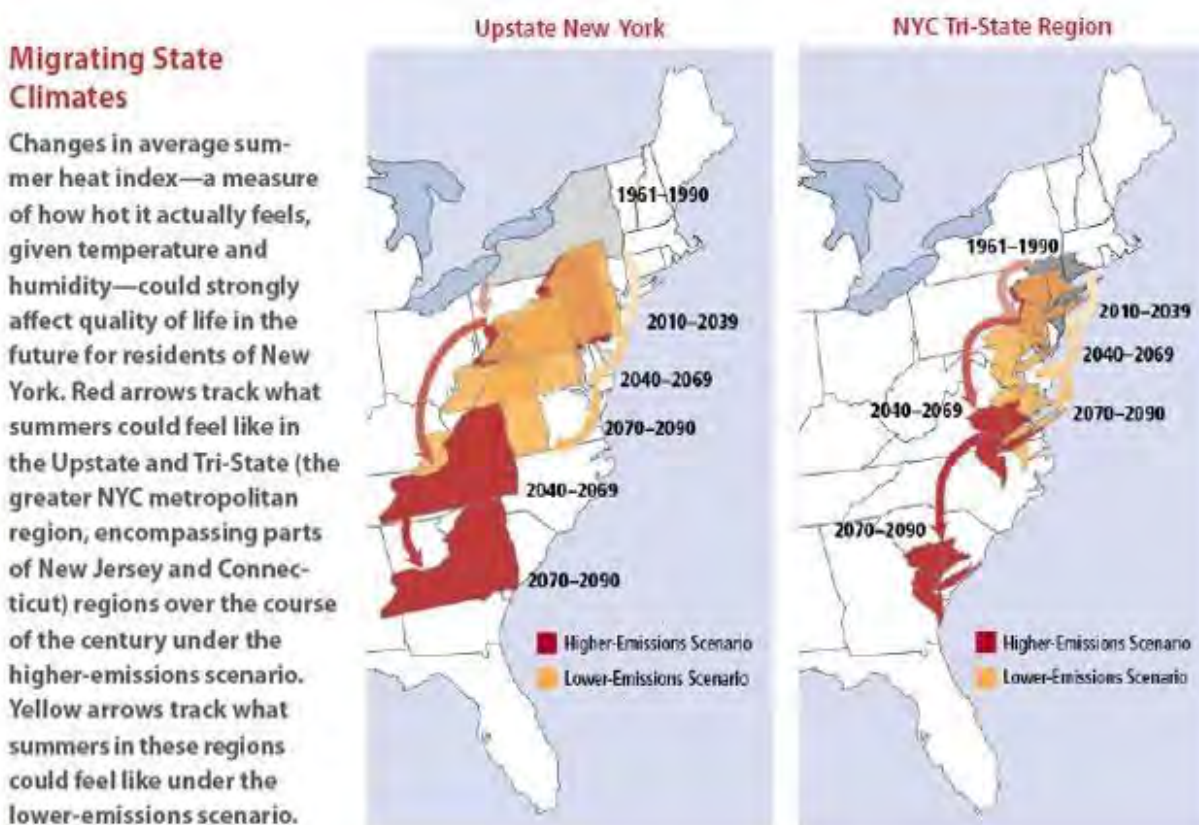
- More frequent days with temperatures above 90°F
- A longer growing season
- Increased heavy precipitation

The Northeast is projected to face continued warming and more extensive climate-related changes, some of which could dramatically alter the region's economy, landscape, character, and quality of life. Also, as more northern areas warm up, non-native insects and pathogens thrive and expand territory, which may lead to an increasing use of pesticides as the number of affected areas grows.

Earlier springs and warmer winters will also encourage growing insect populations, as a greater percent survive the winter cold spells.

In addition, changing temperatures will encourage weed-growth to move farther northward, competing with, and sometimes overcoming, agricultural crops and significantly increasing the costs to produce food. (Confronting Climate Change)

The following graphic displays the effect of changing climates.



Source: Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions, Northeast Climate Impacts Assessment (2007), Union of Concerned Scientists

Impacts from this change in climate would include the following.

- Winters in the Northeast would be much shorter with fewer cold days and more precipitation.
- The length of the winter snow season would be cut in half across northern New York, and reduced to a week or two in southern parts of the region.
- Cities that today experience few days above 100°F each summer would average 20 such days per summer.

- Short-term (one- to three-month) droughts are projected to occur as frequently as once each summer in the Catskill and Adirondack Mountains, and across the New England states.
- Hot summer conditions would arrive three weeks earlier and last three weeks longer into the fall.

Clinton County has recently experienced higher winter temperatures than in the past. December 25th, 2016 was 60 degrees Fahrenheit. Snows have been less than in the past, with extreme snow events, or rain during the normal snow period. Anecdotally, snowfalls have been occurring less frequently and generally with less accumulation than in the past, but with extreme weather events being more likely in warming environments, it increases the likelihood of catastrophic winter precipitation events (either rain or snow depending on specific weather patterns). Such an event occurred February 6th and 7th where the snow fell at rates of 1-2” per hour with a total of 12-18” throughout Clinton County.

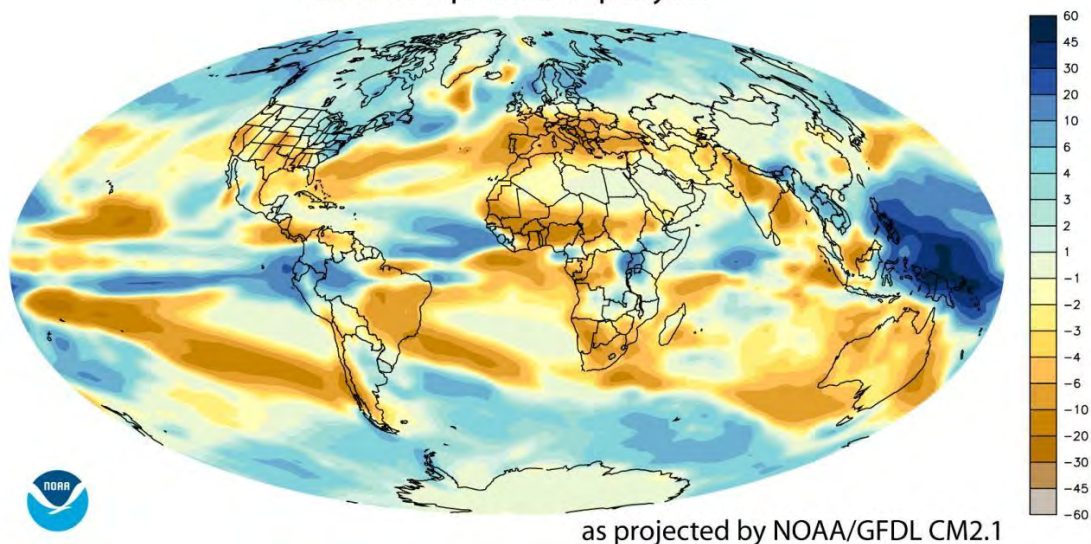
Summer temperatures have also been increasing. The summer season of 2018 saw record setting heat on 19 days. Frequent temperatures of 92 to 97 have occurred regularly in the summer of 2019. The first days of summer in June 2020 saw a 7 day heatwave which was also accompanied by lower than normal rainfall causing dryer than normal conditions in the area increasing risk of wildfires.

Clinton County may experience longer and more intense heat waves in the summer. Clinton County can anticipate milder winters and less consistent snow cover but may experience more extreme snow events.

Precipitation, Flooding and Landslides:

Climate change will result in the probability of occurrence of precipitation, flooding to be highly likely. Landslides are considered to be highly unlikely due to climate change. Precipitation patterns related to climate change are expected to shift in the coming decades. The following figure illustrates the potential increase in precipitation that could impact New York State by the end of the century. Based on this projection, areas of New York State could see an increase of 3 to 6 inches of rainfall per year, meaning precipitation will steadily increase over the next several decades. Additionally, this precipitation is projected to occur more often as heavy downpours. A new term, *rain bombs*, has been coined to reflect these extreme rainfall events. These rain bomb events are characterized by extreme rain fall events over a short period of time, leading to flash floods and impacts to the built environment with these extreme rain events. Increased precipitation and downpours will lead to more flooding, impacting people, property, and the environment. It can also potentially increase landslides due to higher moisture levels in soils. In addition, changes in precipitation will impact crop production and other segments of the agricultural economy.

CHANGE IN PRECIPITATION BY END OF 21st CENTURY inches of liquid water per year



Clinton County will see an increase in rain bomb events as well as an increase in rain amounts. Many of the recent flood events in New York and in the nation have been extreme events characterized by intense rainfall over smaller geographic areas that leads to extreme flash floods.

Winter Events:

Climate change will result in the probability of occurrence of winter events to be highly likely. The Northeast Region is also projected to see an increase of approximately 20% to 30% in winter precipitation. Projections are based on lower- or higher-emissions scenarios, which also identify the potential number of “snow-days” across the state. In a high- emission scenario, the Adirondack region could see the snow season cut in half; a low- emission scenario would retain about three-quarters of its snow season, or two to three weeks of snow cover per winter month; either scenario would carry over and impact the region’s winter tourist economy.

Confronting Climate Change:

Long-time Clinton County residents with forty plus years of residency have anecdotally spoken of milder winters, and higher temperatures with less overall snow amounts and more rain events during the winter.

Tropical Storms:

Climate change will result in the probability of occurrence of tropical storms to be highly likely. Although climatologists are unsure whether the increasing cycle of tropical storm events since 1995 is part of a multi-decadal cycle that will eventually decline, or whether the cycle will be

influenced by climate change leading to increases in the cycle, projections indicate that the severity of all storms and their impacts are increasing and will continue to do so.

Studies link increased tropical storm energy and duration to warmer ocean temperatures. Return intervals of severe storms may also be shortened, resulting in high tide peaks, for example, that occur once every ten years rather than once every hundred years.

Clinton County may be impacted by tropical storm events, as these have also increased in number and intensity. Tropical Storm Irene impacted Clinton County and other counties with historic damages. Irene and its effects are discussed more broadly in the relevant HIRA chapter.

Wildfire:

Climate change will result in the probability of occurrence of wildfires to increase. Climate changes directly and indirectly affect the growth and productivity of forests. Directly, due to changes in atmospheric carbon dioxide and climate, and indirectly through complex interactions in forest ecosystems. Climate also affects the frequency and severity of many forest disturbances, such as insect outbreaks, invasive species, wildfires, and storms.

Forests cover approximately 60% of the New York State's total land area. As temperatures increase, the suitability of a habitat for specific species of trees changes. In addition, there is growing evidence that prolonged heat waves are



likely to lead to a greater incidence of wildfires.

The following graphic illustrates the relationship between conditions related to climate change, including extreme temperatures and drought, to wildfires, which can subsequently lead to impacts to the population, environment, and agriculture.

Power failures:

Power failures have occurred on numerous occasions in various locations throughout the state and Clinton County, due to a variety of causes. Since a power failure has the potential of being a result of conditions caused by climate change, the probability of failure of the energy system increases as the intensity of extreme events increases. This type of incident, depending on severity, could pose significant health and safety risks and would normally require the involvement of local emergency management organizations to coordinate provisions for food, shelter, water, and heating. Climate change will result in the probability of occurrence of power failures due to wind, wind storm events and other hazards to be highly likely.

Potential Cascading Impacts:

Nearly all hazards are impacted by the changes predicted to happen in Clinton County related to climate change, as described in the previous sections. This can potentially lead to a greater co-occurrence of related hazards, such as severe precipitation events and flash flooding, or drought and wildfires. Though the potential impacts to Clinton County are unclear as of yet, it can be reasonably determined that there will be changes upon the frequency and impact of natural hazards throughout the county.

Conclusion:

The entire state is potentially vulnerable to the overall effects of climate change related to extreme temperatures and precipitation.

Because of the difficulty in attributing the scope and severity of any particular event to climate change, it has not been identified as a specific hazard in relation to Federal Disaster Declarations, nor is it likely to be in the next several years. Climate change involves interrelated complexities of multiple hazards and conditions, as well as impacts and consequences. Although some industries (such as insurance companies) have started developing methodologies for taking climate change into account, tracking occurrences of climate change over time from a disaster impact probability and severity analysis will be difficult. Future studies and research may result in an accepted methodology for measurement.

There is little disagreement within government, academic, and scientific circles that changes occurring in the atmosphere over multiple decades are impacting the earth's climate. Based on research studies, reports, records of historical events over long periods of time, and predictive models, it is highly likely that climatic changes that New Yorker's have been experiencing will occur much faster in the coming years. Although the extent and magnitude of its impact is not fully determined, ongoing research may further refine predictions for probability and severity.

Clinton County will also be impacted by climate change. With warmer summers, Clinton County can expect a rise in the number of extreme rain events as well as droughts, and with warmer winters, less snowfall accumulation alongside the increased possibility of extreme snow and ice

events. Also, there will be an increased incidence of rainfall instead of snow in winter leading to less snowpack on the mountains and a risk of drought and wildfires in summer. This seasonal uncertainty will affect the decisions of farmers, business owners, residents, and tourists, who, in the absence of the historic weather patterns they relied upon to make decisions, will be left flying blind into a future that becomes more unpredictable each year.

Droughts will be affected, and we can expect to see more short term seasonal droughts. Winters will be impacted in that historic normal snows will continue to be impacted in less normal snow and more extreme snow events. Rains during the winter will continue to occur and may even increase as the temperature increases. Ice storms may increase due to the rising annual temperatures. Floods will be impacted as more extreme rain bomb events may occur. Extreme summer and winter temperature will also be impacted by climate change. Summer temperatures have increased in the recent past, with more records broken each year. Wildfires will also be impacted by climate change. Clinton County can anticipate additional wildfires that may increase in size due to observed droughts and prolonged periods of high temperatures.

Climate Smart Communities is a state-local partnership to reduce greenhouse gas emissions, save taxpayer dollars, and advance community goals for health and safety, economic vitality, energy independence and quality of life. Communities that enroll in the program are asked to do several key activities such as: identifying sources of greenhouse gases in the community; setting goals for emission reduction; and developing a climate action plan. They are also expected to implement their plans and encourage “go green” activities with businesses, institutions and individuals. The Climate Smart Community Program released “Climate Smart Resiliency Planning: A Planning Evaluation Tool for New York State Communities” in September 2013. This document, based on a similar program initiated in New Jersey, is a comprehensive self-assessment tool to address climate change effects and risks in future community-level plans, and to help local decision-makers identify planning and adaptation opportunities to reduce their community’s vulnerability to climate hazards. Clinton County has three jurisdictions that participate the towns of Black Brook and Dannemora, as well as the City of Plattsburgh.

Individuals, local governments, state governments, the federal government, and most importantly businesses can implement projects and programs to reduce the effects of climate change. Now is the time for action, as scientists are continually analyzing this hazard and promoting initiatives to reduce the effect of climate change.

4.3 DAM FAILURE:

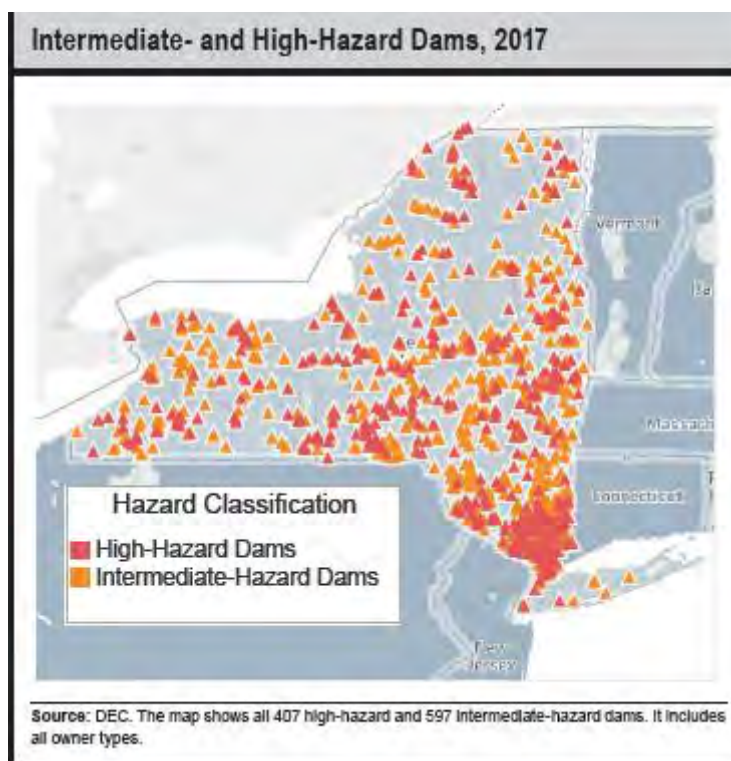
A dam is a barrier across flowing water that obstructs, directs, or slows down water flow. Dams provide benefits such as flood protection, power generations, drinking water, irrigation, and recreation. Failure of these structures results in an uncontrolled release of impounded water. Failures are relatively rare, but immense damage and loss of life is possible in downstream municipalities when such events occur. Aging infrastructure, hydrologic, hydraulic and geologic characteristics, population growth, and design and maintenance should be considered when assessing dam failure hazards.

Location and Extent:

Dam failures most often occur during or after a massive rainfall, flooding, or spring thaws, sometimes with little to no warning. Depending on the size of the water body where the dam is constructed, water contributions may come from distant upstream locations.

Clinton County has 59 dams listed on the New York State DEC website. In addition to the dams located within Clinton County, dams in other counties may have the potential to inflict severe loss of life and property to residents of Clinton County.

Dam failures can pose a serious threat to municipalities located downstream from major dams. The impact of a dam failure is dependent on the volume of water impounded by the dam and the amount of population or assets located downstream. Catastrophic failures are characterized by the sudden, rapid, and uncontrolled release of impounded water or any other fluid or semi- fluid from a dammed impoundment or water body.



The federal government has a limited role in dam safety. Besides being responsible for federal dams, the U.S. government regulates nonfederal dams used to generate hydroelectric power and those used in mining. However, most dams are not subject to federal oversight. States bear most of the responsibility for dam safety regulation in the United States. In New York State, DEC is responsible for regulating most dams.

Owners are generally responsible for inspecting and maintaining their dams. However, DEC has the authority to inspect dams out of concern for public safety, and to order owners to repair or even remove those posing a threat of personal injury or substantial damage to property or natural resources. DEC aims to inspect most high-hazard dams every two years and the intermediate hazard ones every four years.

Certain state-owned dams are not subject to DEC dam safety regulations. However, DEC's practice is to inspect State-owned dams and monitor their safety programs as if they were subject to DEC regulation.

In the wake of a 2008 audit of DEC's dam safety program by the Office of the New York State Comptroller (OSC), DEC strengthened its dam safety regulations. The new regulations, which took effect in 2009, include a requirement that most owners of high-hazard and intermediate-hazard dams have an engineering assessment (EA) conducted at least every ten years and submit the report to DEC. These regulations do not apply to certain state-owned and public authority-owned dams. Also, at DEC's discretion, owners of dams regulated by the Federal Energy Regulatory Commission (FERC) may file equivalent EA reports prepared for FERC. For those subject to DEC regulations, the first EA reports were due between 2012 and 2015, depending on the structure's size and hazard classification. High-hazard dams are much more likely than those rated as intermediate-hazard to have an EA.

The dam safety regulations implemented in 2009 also require most owners of intermediate- and high-hazard dams to file an Emergency Action Plan (EAP) with DEC and certify annually their compliance with certain safety regulations. These include requirements pertaining to EAP reviews and updates, as well as the development and implementation of maintenance and inspection plans.

Dam failures may or may not leave enough time for evacuation of people and property, depending on their abruptness. Seepages in earth dams usually develop gradually. Seepages occur when water

leaks into the earthen levee or dike. If the embankment damage is detected early, downhill residents have at least a few hours or days to evacuate. Failures of concrete or masonry dams tend to occur suddenly, sending a wall of water and debris down the valley at more than 100 mph. Survival would be a matter of having the good fortune not to be in the flood path at the time of the break. Dam failures due to the overtopping of a dam normally give sufficient lead time for evacuation.

Previous Occurrence:

Peru 06/27/1998. Around 3AM heavy rainfall lead to the breach of a dam used to create the reservoir that the Town of Peru utilizes for drinking water. The primary town reservoir fed by Furnace Brook holds approximately 1.6 million gallons of water. The burst lead to exacerbation of the extreme flooding already occurring in the area and several roads, and bridges were washed out. Most notably, downstream from the dam was a group of apartment buildings, Hayworth Village, that were inundated by flood waters and had to be evacuated. Further description of the events on this day are located in the Floods hazard description section.

Marci Dam Breach from Tropical Storm Irene

This dam is located in Essex County, but the proximity to Clinton County resulted in it being included in the dam failures. Marcy Dam was a wooden dam on the Marcy Brook in the Adirondack High Peaks in North Elba, New York, United States; it impounds Marcy Dam Pond. An early version of the dam was constructed by the Conservation Corps during the



Marcy dam after Tropical Storm Irene

1930s. It was rebuilt most recently during the early 1970s. Marcy Dam can be reached only by hiking; it lies 2.1 miles (3.4 km) from the Adirondack Loj at an elevation of 2,362 feet (720 m)

surrounded by Whales Tail Mountain, Wright Peak, Algonquin Peak, Avalanche Mountain, Mount Colden, TR Mountain, and Phelps Mountain. During Hurricane Irene, the dam was damaged due to flooding and the pond was partially drained. The trail that went over the dam has been rerouted downstream. The dam will not be repaired or replaced.

Potential Cascading Impacts:

Dam failures can cause a variety of impacts on downstream public and private infrastructure. When a large volume of water is released in a single event, large debris such as trees and boulders can be washed downstream, and lead to damages downstream. The rapid movement of water often leads to road and bridge washouts and can potentially disrupt power lines. Disruption in road continuity can impact travel within the county as bridge washouts have the potential to isolate areas from access to emergency services.

Potential loss:

Property and populations located downstream from any dam are vulnerable to dam failure. Dams are classified by size and the amount of loss of life and economic loss expected in a failure event. The text below describes the dam classification; and although the size of a dam may result in varying impacts, the hazard potential classification of Category C dams is most important, since they have the potential to cause substantial loss of life and excessive economic loss.

New York State uses a dam downstream hazard classification system similar to that of many states and federal agencies. The following three classification levels are used in New York. They are listed in order of increasingly adverse consequences from a dam failure. These classification levels build on each other, with the higher levels adding to the consequences of the lower levels. These downstream hazard classifications are defined in 6 NYCRR Subpart 673.5(b), and are repeated here for reference.

(1) **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.

(2) **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.

(3) **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.

A fourth classification is provided in 6 NYCRR Subpart 673.5(b) to track the files of structures that were never built or are no longer dams:

(4) **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.

Dams that have not been assigned a classification of failure damage potential are assigned a 0 rating by the state. These dams should be assessed as to their potential impact on downstream communities.

CLINTON COUNTY NY DAM INVENTORY						
Name of Dam	Hazard Code	River Stream Name	Year Built	Municipalities	Owners	Owner Type
Whiteside Dam	A	GREAT CHAZY RIVER	1914	Town of Champlain	NYS DEC REGION 5	State
Fordhams Mills Dam	A	LITTLE CHAZY RIVER		Not Found	WILLIAM MINER	N/A
Little Chazy Dam	A	LITTLE CHAZY RIVER	1909	Not Found	CHAZY FIRE DISTRICT	N/A

Name of Dam	Hazard Code	River Stream Name	Year Built	Municipalities	Owners	Owner Type
W H Miner Dam #2	A	LITTLE CHAZY RIVER	1909	Not Found	CHAZY FIRE DISTRICT	N/A
Tracy Brook Dam #1	0	TRACY BROOK	1909	Not Found	NYS DEC	State
Tracy Brook Dam #2	0	TRACY BROOK		Not Found	NYS DEC	State
Tracy Brook Dam #3	0	TRACY BROOK		Not Found	NYS DEC	State
Tracy Brook Dam #4	0	TRACY BROOK	1907	Not Found	NYS DEC	State
Tracy Brook Dam #5	0	TRACY BROOK	1907	Not Found	NYS DEC	State
Lake Alice Dam	A	TRACY BROOK	1907	Town of Chazy	NYS DEC	State
Miner Dam	D	LITTLE CHAZY RIVER	1926	Not Found	WILLIAM H MINER	N/A
Main Mill Dam	C	SARANAC RIVER	1881	City of Plattsburgh	IMPERIAL INDUSTRIAL PARK, NYS DEC	Private, State
Indian Rapids Dam	D	SARANAC RIVER	1905	City of Plattsburgh	NYSEG	Public Utility
Fredenburg Falls Dam	D	SARANAC RIVER	1912	Not Found	GEORGIA-PACIFIC CORPORATION	Private
Rainbow Falls Dam	B	AUSABLE RIVER	1925	Town of AuSable	NYSEG	Public Utility
Nail Factory Dam	D	AUSABLE RIVER	1918	Not Found	AUSABLE ESSEX HORSE NAIL COMPANY	N/A
Dead Creek Dam	A	TR-LAKE CHAMPLAIN		Not Found	NYS DEC	State
Alice Falls Dam	A	AUSABLE RIVER	1893	Town of AuSable	LONG LAKE ENERGY CORPORATION	Private
Allen Dam	A	TR#2-AUSABLE RIVER	1962	Town of Peru	NYS DEC	State

Name of Dam	Hazard Code	River Stream Name	Year Built	Municipalities	Owners	Owner Type
Mooers Dam	A	GREAT CHAZY RIVER	1954	Not Found	TOWN OF MOOERS	Local Government
Mcgregor Dam	C	CHAZY RIVER	1968	Town of Altona	NYS DEC DIVISION OF LANDS & FORESTS	State
Ymca Pond Dam	A	TR-STILLWATER BROOK	1971	Not Found	YMCA OF PLATTSBURG	Private
Scribnek Pond Dam	D	MEAD BROOK		Not Found	City of Plattsburgh	Local Government
Mead Reservoir Dam	C	MEAD BROOK	1922	Town of Plattsburgh	City of Plattsburgh	Local Government
Westbrook Reservoir #2 Dam	B	PATTERSON BROOK	1910	Town of Plattsburgh	City of Plattsburgh	Local Government
Westbrook Reservoir #1 Dam	B	PATTERSON BROOK	1905	Town of Plattsburgh	City of Plattsburgh	Local Government
Treadwell Mills Dam	B	SARANAC RIVER	1910	Town of Schuyler Falls	ENEL GREEN POWER NORTH AMERICA INC	Private
Kents Falls Dam	C	SARANAC RIVER	1912	Town of Schuyler Falls, Town of Plattsburgh	NYSEG	Public Utility
Mill C Dam	B	SARANAC RIVER	1901	Town of Plattsburgh, Town of Schuyler Falls	NYSEG	Public Utility
Cadyville Dam	C	SARANAC RIVER	1908	Town of Schuyler Falls, Town of Plattsburgh	NYSEG	Public Utility
Prison Reservoir Dams A-d	A	TR-SARANAC RIVER		Not Found	NYS Department of Corrections	State
Prison Reservoir Dam E	A	TR-SARANAC RIVER	1924	Not Found	NYS Department of Corrections	State

Name of Dam	Hazard Code	River Stream Name	Year Built	Municipalities	Owners	Owner Type
Mason Lower Dam	0	LITTLE AUSABLE RIVER	1913	Not Found	MASON & SONS	N/A
Peru Water Supply Dam	A	FURNACE BROOK	1922	Town of Peru	TOWN OF PERU	Local Government
Davis Lake Dam	B	SALMON RIVER	1957	Town of Peru	NYSOPRHP THOUSAND ISLANDS REGION	State
Morrisonville Water District Dam	A	RILEY BROOK	1956	Not Found	TOWN OF SCHUYLER FALLS	Local Government
Mason Upper Dam	D	LITTLE AUSABLE RIVER	1981	Not Found	TOWN OF PERU	Local Government
Andelay-mowry Pond Dam	A	CALDWELL BROOK-TR	1994	Not Found	DAVID N. MOWRY	N/A
Fern Lake Dam	B	TR-BLACK BROOK	1912	Town of Black Brook	TOWN OF BLACK BROOK	Local Government
Black Brook Dam	B	BLACK BROOK	1896	Town of Black Brook	Christopher McGill	Private
H A Kaufman Sawmill Dam	D	GREAT CHAZY RIVER	1918	Not Found	HECTOR A KAUFMAN	N/A
Sheffield Dam	D	GREAT CHAZY RIVER	1905	Town of Mooers	EDWARD DUPREY	N/A
West Chazy Dam	A	LITTLE CHAZY RIVER	1901	Not Found	STANLEY FARBOTKO	N/A
Miner Dam	D	LITTLE CHAZY RIVER	1911	Not Found	WILLIAM H MINER	N/A
Lasalle Dam	D	GREAT CHAZY RIVER	1922	Town of Altona	TOWN OF ALTONA	Local Government
Trombly Dam	0	PARK BROOK		Not Found	INTERNATIONAL GLASS	N/A
Mcgregor Dam	A	GREAT CHAZY RIVER	1919	Not Found	Town of Ellenburg	Local Government

Name of Dam	Hazard Code	River Stream Name	Year Built	Municipalities	Owners	Owner Type
Chazy Lake Dam	C	GREAT CHAZY RIVER	1926	Town of Dannemora	TOWN OF DANNEMORA	Local Government
Hobbs Dam	D	TR-NORTH BRANCH GREAT CHAZY		Town of Ellenburg	THOMAS HOBBS, JR.	N/A
Lake Roxanne Dam	B	GREAT CHAZY RIVER	1967	Town of Ellenburg	HORST WUERSCHING, Christopher Larrow	Private
Trombley Pond Dam	A	NORTH GREAT CHAZY RIVER	1973	Not Found	SAMUEL J TROMBLEY	N/A
Bradley Pond Dam	A	BRADLEY BROOK		Not Found	DIAMOND INTERNATIONAL COMPANY	Private
Separator Brook Dam	A	SEPARATOR BROOK	1906	Not Found	TOWN OF DANNEMORA	Local Government
Standish Reservoir Dam	A	STANDISH BROOK	1910	Town of Saranac	HAMLET OF STANDISH	N/A
Union Falls Dam	A	SARANAC RIVER	1906	Not Found	Cruger Energy	N/A
Redford Reservoir Dam	A	MUD POND BROOK	1934	Town of Saranac	REDFORD WATER DISTRICT	N/A
NAME_ONE	E	RIVER_STREAM_NAME	YEAR BUILT	Municipalities		
Whiteside Dam	A	GREAT CHAZY RIVER	1914	Town of Champlain	NYS DEC REGION 5	State
Fordhams Mills Dam	A	LITTLE CHAZY RIVER		Not Found	WILLIAM MINER	N/A
Little Chazy Dam	A	LITTLE CHAZY RIVER	1909	Not Found	CHAZY FIRE DISTRICT	N/A
W H Miner Dam #2	A	LITTLE CHAZY RIVER	1909	Not Found	CHAZY FIRE DISTRICT	N/A

Communities downstream of high-hazard and intermediate dams should pay particular attention to inspection and maintenance activities that keep their communities safe. With these activities and oversight from the DEC, vulnerability decreases significantly.

Potential loss:

Dam inundation mapping determines the potential number of structures that would be impacted from a dam failure. There is a total of 59 dams in Clinton County according to the DEC. A total of 17 dams are required to have an EAP. 16 dams have inundation mapping completed.

Residents and other may not be aware of dams upstream of their locations. The County should consider an education and outreach campaign to educate residents downstream of dams on actions to take if a failure would occur. This would potentially reduce the potential for loss of life if a dam failure occurred in Clinton County.

Dam Removal:

Removal of dams has been undertaken for many reasons. Dam removal brings a variety of benefits to local communities, including restoring river health and clean water, revitalizing fish and wildlife, improving public safety and recreation, and enhancing local economies. Many non-governmental organizations have been involved in these dam removal projects. Working in a variety of functions with partner organizations throughout the country, American Rivers contributed financial and technical support in many of the removals. According to the American Rivers website, nationwide, 1384 dams have been removed from 1912 through 2016.

Ausable Quarry Dam, West Branch Ausable River, New York

Located within the Sentinel Range Wilderness Area, this dam was removed over the course of five years by Trout Unlimited. The final phase of the project was completed in the late fall and early winter of 2018.

LaSalle Dam, Great Chazy River, New York:

The LaSalle Dam was removed in October of 2010, in Altona, NY. The 40-foot tall and 200-foot wide concrete dam was built in 1923 and was owned by the town of Altona and used as a hydropower dam. No longer considered safe, the dam was removed for the safety of the community, and to benefit the fishing industry.

Imperial Dam, Saranac River, Plattsburgh, NY

According to a Press Republic newspaper article on October 20, 2019, The City of Plattsburgh supports the idea and concept of removal of the Imperial Dam. The following information is from that newspaper article.

“The Lake Champlain Chapter of Trout Unlimited wants Imperial Dam removed and the city is supporting the cause. representatives of the local chapter presented to the City of Plattsburgh Common Council, referring to the Saranac River spillway as a Class C, or high-hazard, dam. The Common Council recently approved a resolution that boosted that effort. "The City of Plattsburgh joins and supports the efforts of the Lake Champlain Chapter of Trout Unlimited to petition New York State to remove Imperial Dam," the resolution says. "So that these safety deficiencies with the high-hazard dam will be resolved, salmon will re-gain their historic spawning grounds and ice-jams in the future will be mitigated." With its Class C rating, Lee said, that means the dam could lead to serious damage in infrastructure and even loss of human life. Lee believes that Imperial Dam was part of the cause of a local disaster not so long ago.

In January 2018 he said, an ice jam there contributed to water spilling over an earthen berm, damaging more than 20 homes at Underwood Estates mobile-home park. Lee said the New York State Department of Environmental Conservation has suggested lowering the dam to get it away from its high-hazard rating. But, he told the Common Council, eliminating it would bring better results than just lowering it. "If that dam ever goes out, you would still lose property, maybe not lives, but I still think it's a hazard," he said. This hazard could be eliminated with removal of this dam structures.

These dam removal projects have many benefits from restoration of the river or stream channels, increase fish migration, and can impact floods along these waterways.

Additional dam removal projects may be warranted, each dam should be assessed as to the benefits of a removal of any dam.

Dam need to be inspected and maintained to ensure the continue to operate as designed while ensuring the general public a degree of safety. Dams should be repaired once deficiencies are known to ensure the safety of the general public.

Probability of Future Events:

Provided that adequate engineering and maintenance measures are in place, the future occurrence of dam failures in Clinton County can be considered a low probability, but possible.

- **Low probability (less than once every 50 years)**
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

The presence of structural integrity and inspection programs significantly reduces the potential for major dam failure events to occur.

4.4 DROUGHT:

Drought is defined as the following: “drought is a natural climatic condition which occurs in virtually all climates the consequence of natural reduction in the amount of precipitation experienced over a long period of time, usually a season or more in length. High temperatures, prolonged winds, and low relative humidity can exacerbate the severity of drought. This hazard is of particular concern due to the presence of farms as well as water-dependent industries. A prolonged drought could severely impact these sectors of the local economy, as well as residents who depend on wells for drinking water and personal uses.” (National Drought Mitigation Center, 2006)

Description:

Droughts are regional climactic events, and when these events occur in Clinton County the impacts can be felt across the County, as well as areas outside the County boundaries. The spatial extent for areas of impact can range from counties and areas in New York to the entire Mid-Atlantic region. Areas with extensive agricultural land use (farmland) are most vulnerable to an economic impact from drought. The vulnerability to drought is amplified in areas in which agriculture is the primary sector of employment. Farms and farming activities are scattered throughout the Clinton County. Additionally, areas that are heavily forested can be negatively impacted by drought. Droughts can also impact the water resources that are utilized for human activities. Droughts can impact natural systems and have effects on these natural systems.

The impacts of drought can include:

- **Hydrologic effects** – lower water levels in reservoirs, lakes, and ponds; reduced streamflow; loss of wetlands; estuarine impacts; groundwater depletion and land subsidence; effects on water quality such as increases in salt concentration and water temperature.
- **Damage to animal species** – lack of feed and drinking water; disease; loss of biodiversity; migration or concentration; and reduction and degradation of fish and wildlife habitat.

- **Damage to plant communities** – loss of biodiversity; loss of trees from urban landscapes and wooded conservation areas, increased number and severity of fires, reduced soil quality.
- **Air quality effects** – dust and pollutants, loss of quality in landscape.

Extent:

The magnitude of droughts can depend on many factors such as length or duration, intensity, geographic area or extent, and the demand on the water resources of the area.

The ability to monitor droughts can be accomplished using many methods. To quantify drought and monitor its development, many drought indices have been developed and applied. Among them, the Palmer Drought Severity Index (PDSI) is the most prominent index of meteorological drought used in the United States for drought monitoring and research, and its variants have been used to quantify long-term changes in aridity over land in the 20th and 21st century. The PDSI has also been widely used in tree-ring based reconstructions of past droughts in North America and other regions. This PDSI is best at monitoring drought conditions of 12 months or more but can underestimate the effects of short term droughts such as a drought during one single growing season.

The PSDI was developed in 1965 and indicates long term and abnormal moisture deficiency or excess. The following table lists the classifications used in the PDSI. Normal conditions are shown as zero, whereas drought conditions are indicated by negative numbers. The higher

PALMER DROUGHT SEVERITY INDEX (PSDI) CLASSIFICATIONS	
Severity Category	PSDI Value
Extremely wet	4.0 or more
Very wet	3.0 to 3.99
Moderately wet	2.0 to 2.99
Slightly wet	1.0 to 1.99
Incipient wet spell	0.5 to 0.99
Near normal	0.49 to -0.49
Incipient dry spell	-0.5 to -0.99
Mild drought	-1.0 to -1.99
Moderate drought	-2.0 to -2.99
Severe drought	-3.0 to -3.99
Extreme drought	-4.0 or less

(NDMC, 2009)

negative numbers represent more adverse drought conditions.

The New York State Department of Environmental Conservation also monitors drought conditions throughout the state. The New York State Drought Index compares four parameters to historic or "normal" values to evaluate drought conditions; these are stream flows, precipitation, lake and reservoir storage levels, and groundwater levels. New York's Drought Management Task Force uses those factors as well as water use, duration of the dry period, and season to assess drought in different parts of the state.

New York also uses the Palmer Drought Index, a measure of soil moisture calculated by the National Weather Service. The two indices show us different things about drought. The Palmer Index, with its emphasis on soil moisture, helps us understand agricultural impacts. The State Index helps assess the impact on human welfare and the regional economy.

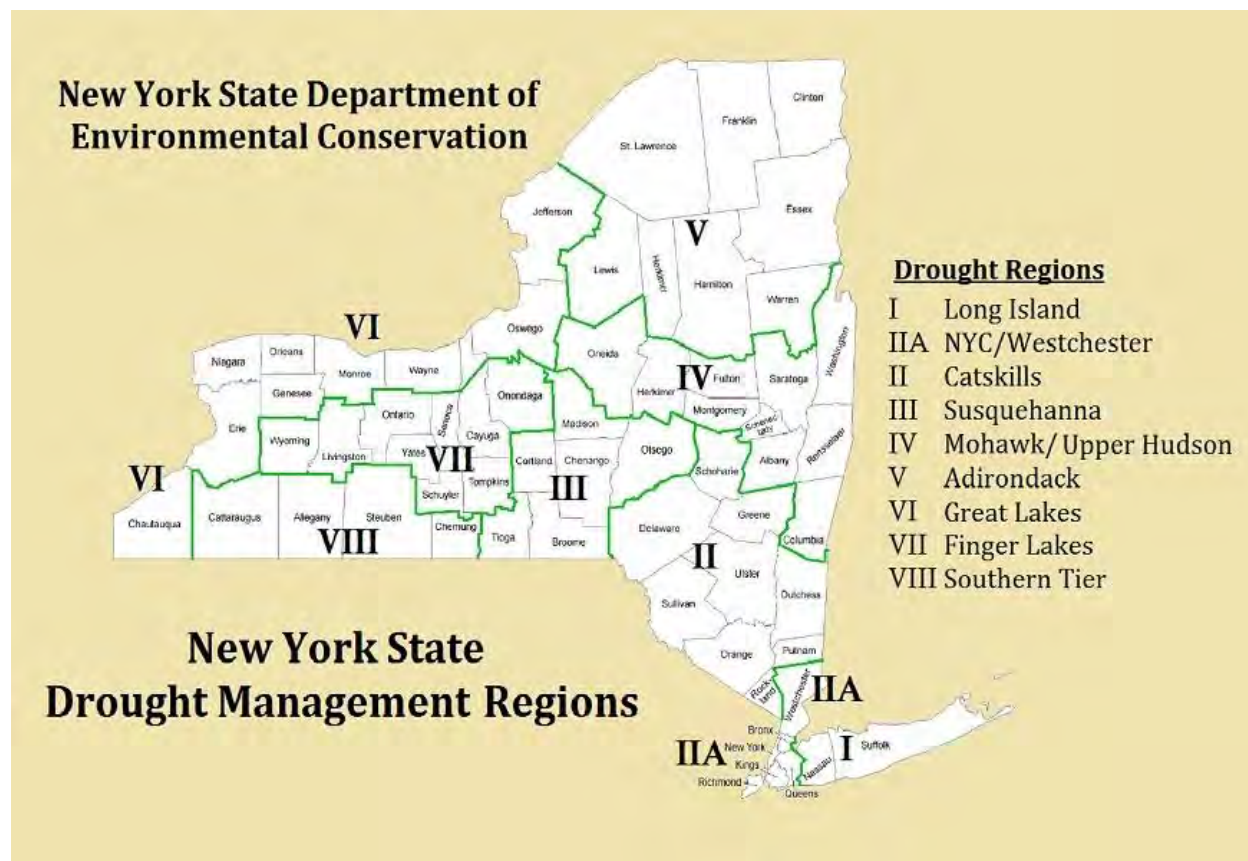
There are four stages of drought that can be declared in New York State. The Drought Plan describes the actions to be taken during each drought stage by water purveyors, towns and villages, water authorities, and other agencies with water supply responsibilities.

- **Drought Watch** - The least severe of the stages, a drought watch is declared when a drought is developing. Public water suppliers begin to conserve water and urge customers to reduce water use.
- **Drought Warning** - Voluntary water conservation is intensified. Public water suppliers and industries update and implement local drought contingency plans. Local agencies make plans in case of emergency declaration.
- **Drought Emergency** - The Governor may declare emergency. The Disaster Preparedness Commission coordinates response. Mandatory local/county water restrictions may be imposed. Communities may need to tap alternative water sources to avoid depleting water supplies, protect public health and provide for essential uses.
- **Drought Disaster** - Disaster plans are implemented. Water use is further restricted. The Governor may declare disaster and request federal disaster assistance. Emergency legislation may be enacted. The state provides equipment and technical assistance to communities.

Location:

New York is divided into nine drought management regions based roughly on drainage basin (watershed) and county lines. DEC monitors precipitation, lake and reservoir levels, stream flow, and groundwater level at least monthly in each region, and more frequently during periods of drought. DEC uses this data to assess the condition of each region, which can range from "normal" to "drought disaster".

Clinton County is located in area 5 of the NYS drought management areas. The entire county is located in this area. Droughts can impact Clinton County differently. The eastern part of the county along the Lake Champlain area can see more of the effects from droughts, when compared to the south western areas of the county. The south western part of the county is more mountainous and sees more rainfall based on the topography. As clouds laden with rain rise to clear these mountainous areas, the water vapor cools and is deposited as rain on the windward side of the mountains.



Previous Occurrences:

Clinton has never been declared as a presidential disaster for droughts nor does the National Center for Environmental Information (NCEI) have records of drought for the county. The following data on droughts was obtained from the US Drought Monitor website. The table below illustrates the drought categories and typical impacts observed at each level.

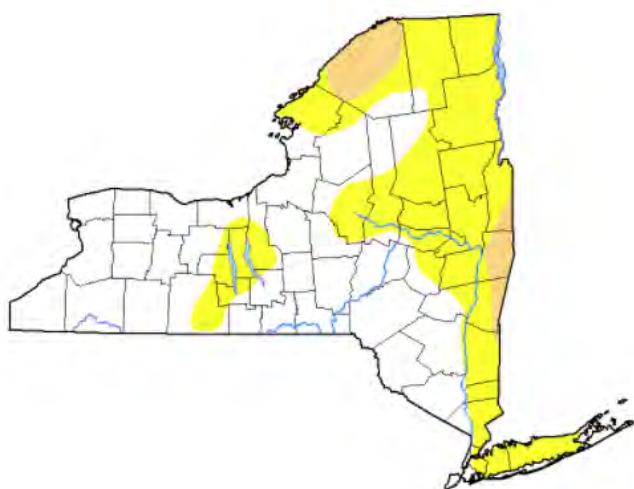
US DROUGHT MONITOR CATEGORIES AND IMPACTS	
Category	Impacts
D0	Crop growth stunted, planting delayed. Fire danger is elevated, spring fire season starts early. Lawns brown early, gardens begin to wilt. Surface water levels decline
D1	Irrigation use increases, hay and grain yields are lower than normal. Honey production declines. Wildfires and ground fires increase. Trees and landscaping are stressed; fish are stressed. Voluntary water conservation is requested; reservoir and lake levels are below normal capacity
D2	Specialty crops are impacted in both yield and fruit size. Produced begin feeding cattle; hay prices are high. Warnings are issue on outdoor burns; air quality is poor. Golf courses conserve water. Trees are brittle and susceptible to insects. Fish kills occur; wildlife move to farms for food. Water quality is poor; groundwater is declining; irrigation ponds are dry; outdoor water restrictions are implemented
D3	Crop loss is widespread; Christmas tree farms are stressed; dairy farmers are struggling financially. Well drillers and bulk water haulers see increased business. Water recreation and hunting are modified; wildlife disease outbreak is observed. Extremely reduced flow to ceased flow of water is observed; river temperatures are warm; wells are running dry; people are digging more and deeper wells.
D4	New York has had little or no experience in D4 so no impacts have been recorded at that level in the Drought Impact Reporter

*Table reproduced from droughtmonitor.unl.edu

Long term drought is tracked by the DEC. This data records the number of weeks in each of the five drought categories, D0 to D4, as well as recording the weeks of no drought occurring. This data provides a long term as well as short term analysis of drought conditions. Comparisons can be made on an annual to weekly basis to see drought conditions in Clinton County. The data

CLINTON COUNTY'S CONSECUTIVE WEEKS IN EACH DROUGHT CATEGORY (2000-2020)			
Drought Category	Start Date	End Date	Consecutive Weeks
D0	5/22/2001	5/29/2001	2
D0	7/31/2001	3/26/2002	35
D0	9/3/2002	9/24/2002	4
D0	3/18/2003	3/25/2003	2
D0	7/8/2003	7/15/2003	2
D0	9/16/2003	9/30/2003	3
D0	11/16/2004	11/23/2004	2
D0	5/31/2005	6/14/2005	3
D0	9/4/2007	10/2/2007	5
D0	5/25/2010	6/1/2010	2
D0	2/15/2011	3/1/2011	3
D0	12/20/2011	5/8/2012	21
D0	6/26/2012	9/4/2012	11
D0	11/20/2012	12/25/2012	6
D0	2/12/2013	5/21/2013	15
D0	10/1/2013	1/7/2014	15
D0	10/28/2014	12/9/2014	7
D0	3/24/2015	6/9/2015	12
D0	9/8/2015	1/5/2016	18
D0	5/24/2016	3/14/2017	43
D0	1/9/2018	2/6/2018	5
D0	7/3/2018	12/25/2018	26
D0	8/6/2019	10/1/2019	9
D0	5/19/2020	6/23/2020	6
D1	8/14/2001	8/28/2001	3
D1	9/10/2002	9/24/2002	3
D1	5/19/2015	5/26/2015	2
D1	8/30/2016	2/21/2017	26
D1	7/31/2018	11/6/2018	15
D2	10/4/2016	12/6/2016	10
D2	9/4/2018	10/23/2018	8

*Clinton County has no record of being in drought categories D3 or D4



**Map released: Thurs. June 25,
2020**

Data valid: June 23, 2020 at 8 a.m. EDT

Intensity:



Author(s):

Adam Hartman, NOAA/NWS/NCEP/CPC

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying [text summary](#) for forecast statements.

image source: <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NY>

provided are a summary of each year based on weeks of time in which any part of the county was in a particular drought category. The table on the previous pages shows the consecutive weeks in which Clinton County was in a particular category of drought since 2000, when the US Drought Monitor began collecting data.

Droughts can impact Clinton County, however no droughts have ranked above the D2 category. New York State experiences its longest drought in 2001, when it persisted in D0 for 47 weeks, in Clinton County 35 consecutive weeks were experienced. Droughts resulting in voluntary water restrictions happened in 2001, 2002, 2015, 2016 and 2018. Droughts resulting in restrictions to outdoor water use were witnessed in 2016, and 2018. While drought is infrequent in the county there is a history with low-level impacts on the region.

Potential Cascading Impacts:

Drought occurs relatively infrequently in Clinton County, but dry conditions often lead to related natural hazards, such as wildfires. In mid-July 2018, the wildfire in Altona that burned 545 acres within the Flat Rock State Forest occurred during a period of unnaturally low precipitation. Though it was not officially declared a drought until August 2018, this extended dry period made the area more susceptible to the quick spread of fires. Extended dry periods lead to the accumulation of dry underbrush which increases wildfire likelihood.

Potential loss:

The 2019 New York State plan reports there have been 3 drought events between 1996 and 2017, however no losses were reported by Clinton County.

Drought can impact Clinton county, but in the past, they have been minor events mainly impacting the agriculture sector of the county. These drought end quickly as normal rainfall patterns return.

Farmers should be encouraged to purchase crop insurance, Cities, towns and villages should consider secondary water sources (especially if their primary source is surface water). Farmers should also be encouraged to develop state wide networks of farmers who can assist each other in times of drought.

Probability of future events:

Clinton County will see additional minor droughts in the future, as it has in the past. The County has ranked drought as a low hazard. This may be due to the fact that droughts have a short time span of effect on Clinton County, and low impacts when they do occur. Drought generally ends due to a return to the normal precipitation levels, either through rainfall or snow fall. These drought events are considered to be likely in the future but will have minimal impact to Clinton County.

- **Low probability (less than once every 50 years)**
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

4.5 EARTHQUAKES:

An earthquake is defined as: “the motion or trembling of the ground produced by sudden displacement of rock usually within the upper 10-20 miles of the Earth’s crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of underground caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in the loss of life and injury to hundreds of thousands of persons, and disrupt social and economic functioning of the affected area. Most property damage and earthquake-related deaths are caused by the failure and collapse of structure due to ground shaking which is dependent upon an amplitude and duration of the earthquake (FEMA, 1997).”

Description:

The seismic waves caused by earthquakes can potentially destroy buildings, infrastructure, and cause loss of life. Aftershocks, which follow mainshocks, are normally smaller and can continue for a period of weeks, months, or years after the initial shock hits. In addition to creating ground acceleration, earthquakes can trigger surface faulting, volcanic activity, tsunamis, landslides, and liquefaction. Soil liquefaction occurs when a saturated or partially saturated soil substantially loses strength and stiffness in response to an applied stress such as shaking during an earthquake or other sudden change in stress condition, in which material that is ordinarily a solid behaves like a liquid. Environmental impacts of earthquakes can be numerous, widespread, and devastating, particularly if indirect impacts like economic impacts are considered.

RICHTER SCALE MAGNITUDES AND ASSOCIATED EARTHQUAKE SIZE EFFECTS	
Richter Magnitude	Earthquake Effects
Less than 3.5	Generally, not felt, but recorded.
3.5-5.4	Often felt, but rarely causes damage.
Under 6.0	At most, slight damage to well-designed buildings; can cause major damage to poorly constructed buildings over small regions.
6.1-6.9	Can be destructive in areas where people live up to about 100 kilometers across.
7.0-7.9	Major earthquake; can cause serious damage over large areas.
8.0 or greater	Great earthquake; can cause serious damage in areas several hundred kilometers across.

Extent:

The Richter Scale is the most commonly used scale to measure earthquakes (see table on previous page). This scale is based on a logarithmic scale. This means because of the logarithmic basis of the scale, each whole number increase in magnitude represents a tenfold increase in measured amplitude; as an estimate of energy, each whole number step in the magnitude scale corresponds to the release of about 31 times more energy than the amount associated with the preceding whole number value. This scale was developed in 1932. It has no upper limit for earthquakes. This scale does not address damages from earthquakes.

The modified Mercalli Scales is used to express the damage potential of earthquakes as well as how people experience the effects of the earthquake.

Although numerous intensity scales have been developed over the last several hundred years to evaluate the effects of earthquakes, the one currently used in the United States is the Modified

MODIFIED MERCALLI INTENSITY SCALE WITH ASSOCIATED IMPACTS.			
Scale	Intensity	Description of Effects	Corresponding Richter Scale Magnitudes
I	Instrumental	Detected only on seismographs	<4.2
II	Feeble	Some people feel it	<4.2
III	Slight	Felt by people resting; like a truck rumbling by	<4.2
IV	Moderate	Felt by people walking	<4.2
V	Slightly Strong	Sleepers awake; church bells ring	<4.8
VI	Strong	Trees sway; suspended objects swing; objects fall off shelves	<5.4
VII	Very Strong	Mild alarm, walls crack, plaster falls	<6.1
VIII	Destructive	Moving cars uncontrollable, masonry fractures, poorly constructed buildings damaged	<6.9
IX	Ruinous	Some houses collapse, ground cracks, pipes break open	<6.9
X	Disastrous	Ground cracks profusely, many buildings destroyed, liquefaction and landslides widespread	<7.3
XI	Very Disastrous	Most buildings and bridges collapse, roads, railways, pipes and cables destroyed, general triggering of other hazards	<8.1
XII	Catastrophic	Total destruction, trees fall, ground rises and falls in waves	>8.1

Mercalli (MM) Intensity Scale. This scale, composed of increasing levels of intensity that range

from imperceptible shaking to catastrophic destruction, is designated by Roman numerals. It does not have a mathematical basis; instead it is an arbitrary ranking based on observed effects.

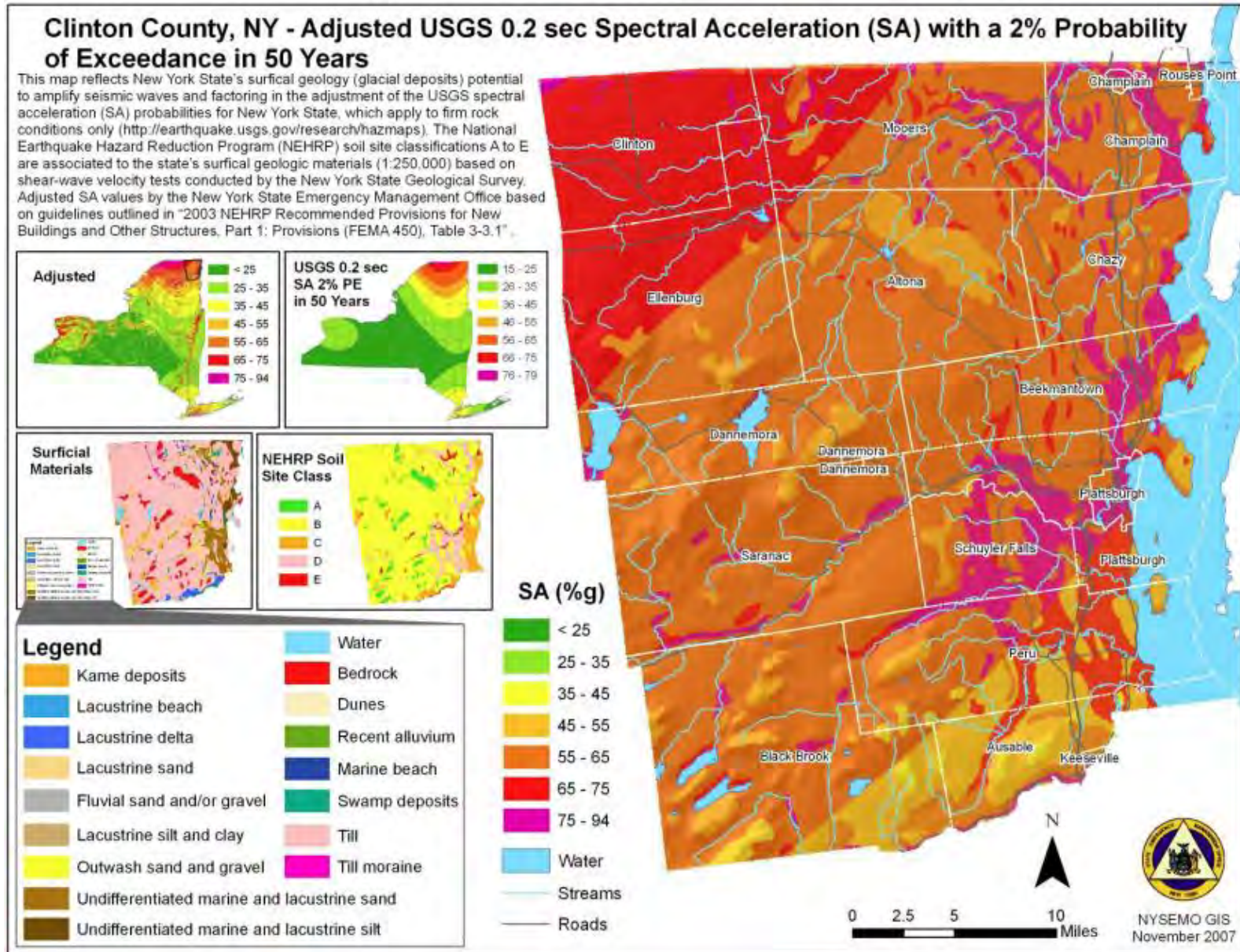
The Modified Mercalli Intensity value assigned to a specific site after an earthquake has a more meaningful indication of severity to the nonscientist than the magnitude, because intensity refers to the effects actually experienced at that place. The lower numbers of the intensity scale generally deal with the manner in which the earthquake is felt by people. The higher numbers of the scale are based on observed structural damage. Structural engineers usually contribute information for assigning intensity values of VIII or above.

Location:

Clinton County is underlaid by fault lines where earthquakes can occur.

Peak ground acceleration is one method of indicating the systemic hazard of an area. PGA is what is experienced by a particle on the ground. This PGA indicates three things, the geographic area affected, the probability of an earthquake and level of severity, and the strength of the ground movement. The map on the following page, from 2007, is still accurate because these hazards don't change frequently. The map illustrates the spectral acceleration of the surficial geology (glacial deposits) of Clinton County. Spectral acceleration (SA) is measured in %g which is the percentage of g-force that will be exerted upon structures in the event of an earthquake, it is considered to be a better indicator of potential damage to buildings and as a result a better indicator of earthquake hazard to a region based upon the local soil composition. The following map produced by the USGS indicates that Clinton County is within the higher risk area of New York State. The maps produced by the USGS are intended for use to model potential hazards throughout the state and are not intended to be utilized for building codes nor are they intended for use in structural engineering determinations.

There are numerous faults throughout New York State. A following map illustrates the faults relative to Clinton County (NYS Museum, 2012). These fault lines are where earthquakes can occur.



0 2.5 5 10 Miles

NYSEMO GIS
November 2007

Section 4

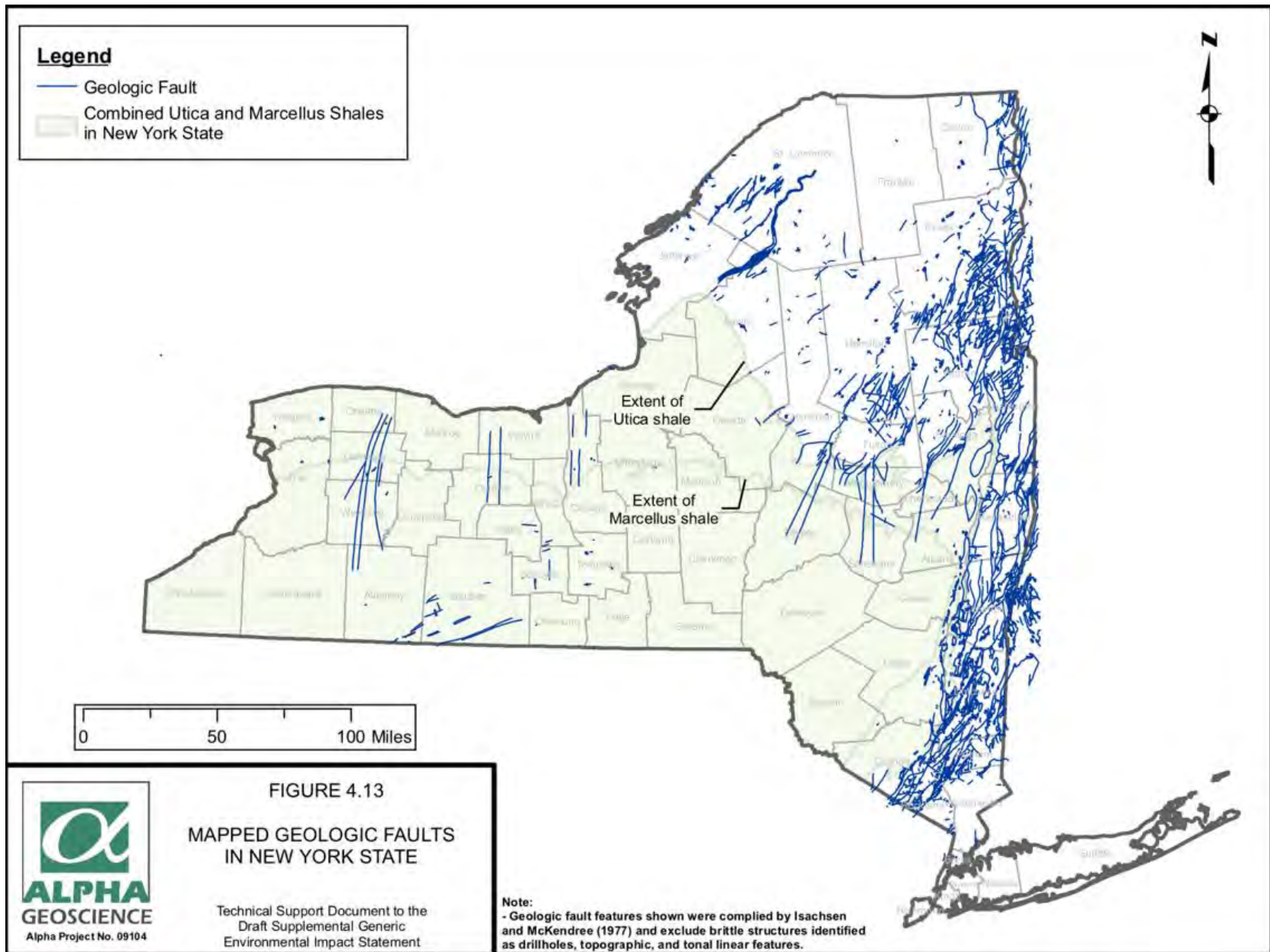


FIGURE 4.13

MAPPED GEOLOGIC FAULTS
IN NEW YORK STATE



Technical Support Document to the
Draft Supplemental Generic
Environmental Impact Statement

Note:
- Geologic fault features shown were compiled by Isachsen
and McKendree (1977) and exclude brittle structures identified
as drillholes, topographic, and tonal linear features.

Previous Occurrences:

EARTHQUAKE HISTORY THROUGHOUT NEW YORK STATE 1737-2005			
Date	Location	Size	Damage Estimates
November 4, 1877	Lyon Mountain	VII	Chimneys down, walls cracked, window damaged, crocks overturned
May 28, 1897	Dannemora	4.5	No reference and/or no damage reported
March 18, 1928	Saranac Lake	4.0	No reference and/or No damage reported
April 15, 1934	Dannemora	4.8	House shifted
June 9, 1975	Plattsburgh (Altona)	3.5	Chimneys and fireplaces cracked
October 7, 1983	Goodnow, Adirondack Mountains	5.1	Tombstones rotated, some cracked chimneys, windows broken, walls damaged
April 20, 2000	Newcomb	3.8	Aftershock of the 1983 event, no reported damage.
April 20, 2002	Au Sable Forks	5.1	Cracked walls, chimneys fell, road collapsed, power outages
May 24, 2002	Au Sable Forks	3.1	Aftershock of the April 20, 2002 event, no damage reported

The previous table provides information for the earthquakes that have occurred in Clinton County. Areas in and near Clinton have experienced earthquakes, and these minor quakes can be felt in Clinton County. Clinton has had one earthquake declared a presidential disaster.

NEW YORK STATE DECLARED EARTHQUAKE DISASTERS FROM 1950-2012	
Disaster # and Date	Counties Affected
FEMA: DR: 1415, 5/16/2002	Washington, Warren, Hamilton, Franklin, and Clinton

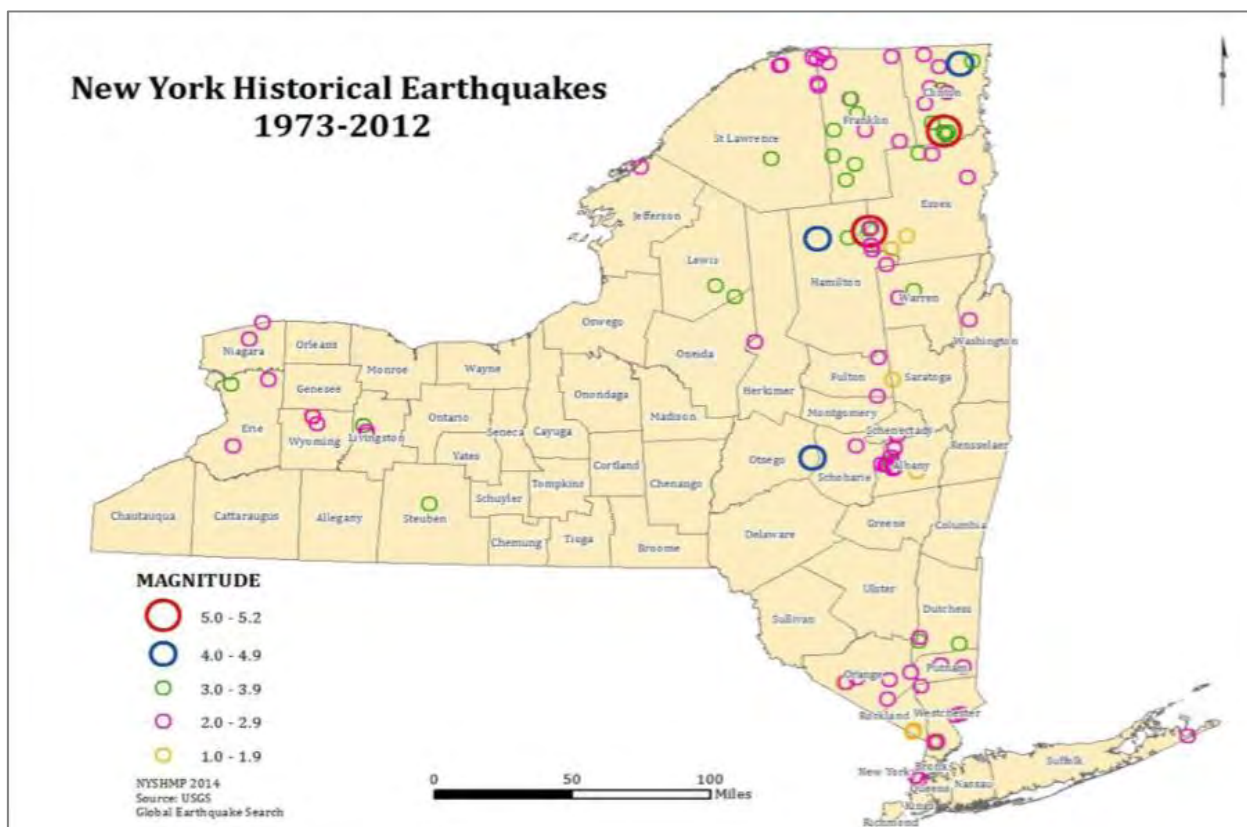
A 5.1 earthquake struck near Au Sable Forks in 2002. Many residents of New York State and the northeast United States awoke the morning of April 20, 2002 to the rumbling of an earthquake. According to the United States Geological Survey (USGS), the earthquake struck at 6:50 a.m. (EDT), approximately 15 miles southwest of Plattsburgh, New York. The USGS reported a preliminary magnitude of 5.1. Shaking was felt throughout New England, and as far west as

Cleveland, Ohio; as far south as Baltimore, Maryland; and as far north as Quebec, Canada. The earthquake epicenter was at 44 degrees 5 minutes north latitude and 73 degrees 7 minutes west longitude. It was measured at a shallow depth of five kilometers. There were reports of minor damage in the epicentral area. A bridge



Images shows a section of Route 9N that collapsed 12 miles south of Plattsburgh as a result of the 2002 earthquake.

was damaged in Jay, and road damage was reported in Keeseville. A chimney was reported damaged in Lake Placid, and a window and foundation were cracked in Au Sable Forks. The earthquake was similar in size to one which occurred approximately 80 miles to the southwest,



near Blue Mountain Lake, New York, in October of 1983. Recently there was a cluster of small earthquakes beginning on January 13, 2020 there was a 3.3 magnitude earthquake (intensity of I-II on the modified Mercalli Scales) centered near the town of Churubusco, NY located in Northwestern corner of the county with a magnitude 1.7 earthquake the following day, and another on the 17th, a magnitude 2.0. There were no damages reported, however the earthquake was felt throughout the region.

Potential Cascading Impacts:

Earthquakes of a magnitude significant enough to cause infrastructure damages are a rare occurrence in Clinton County. However, when these events do occur, they impact public and private infrastructure in the form of cracked foundations and masonry, road and bridge collapse, and power outages. If an earthquake of large enough magnitude were to occur in Clinton County there would be severe impacts, particularly as a result of the majority of the county's basal geography consisting of glacial till, resulting in a somewhat unstable foundation for the county. Due to the structure of the basal geography liquefaction of the ground is possible during a high magnitude earthquake, if one were to occur.

Potential loss:

According MitigateNY the 2019 New York State web-based hazard mitigation plan, Clinton County has no reported losses due to damage from earthquake between 1996 and 2017. Though there was an event in 2002 that had widespread impact on structures and infrastructure within the county, no property damage totals are reported for this earthquake.

Clinton County has a history of experiencing earthquakes, and there are many fault lines located within the county indicating the potential for these hazards to occur in the future. In the event of a large earthquake there is potential for considerable losses to the building stock of the county, as indicated by data provided by the NYSDHSES in the above table.

Clinton County implemented three projects from the earthquake event of 2002, see the table on the following page for specific information regarding these three projects.

CLINTON COUNTY NY MITIGATION PROJECTS FROM EARTHQUAKE EVENT						
Year	DISASTER #	PROGRAM AREA	PROJECT AMOUNT	FEDERAL SHARE OBLIGATED	PROJECT TYPE	NARRATIVE
2007	1415	HMGP	\$187K	\$141K	403.1: Stormwater Management - Culverts	LaValley Road Drainage Project
2013	1415	HMGP	\$30K	\$23K	91.1: Local Multihazard Mitigation Plan	Clinton County Countywide All-Hazard Mitigation Plan
2013	1415	HMGP	\$40K	\$30K	105.1: Applied Research and Development in the Building Sciences	GIS Response

Probability of future events:

Future earthquake events in Clinton county are considered to be low probability and are generally of a magnitude that has little impact to the built environment of Clinton County, however, there have been events with widespread damages.

- **Low probability (less than once every 50 years)**
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

4.6 EXTREME TEMPERATURES:

Extreme heat: Temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks are defined as extreme heat. Humid or muggy conditions can occur when a “dome” of high atmospheric pressure traps hazy, damp air near the ground. Drought occur when a long period passes without substantial rainfall and can result in dust storms and low visibility.

Extreme cold: No specific definition exists for this event, but the following are characteristics of such an event. Temperatures at or below zero for an extended period of time. Extreme cold events are typically part of a winter storm but can occur any time of the year. Unseasonable extreme cold events can have a significant impact on New York State Agriculture.

Location and Extent:

Extreme temperatures are a concern throughout Clinton County, although extreme cold occurs with greater frequency in the region. Both hazards have impacts upon public health and infrastructure. Due to its higher frequency, extreme cold is a hazard of greater concern. Extreme cold events have ruptured waterlines throughout the county, and municipalities have taken preventative measure to protect water and sewer districts. This is a particular concern in the higher elevations of Clinton County where low temperatures are more severe in the winter time. Both extreme heat and extreme cold are perceived to have a low impact upon the county.

Previous Occurrence:

EXTREME TEMPERATURE EVENTS IN CLINTON COUNTY				
Event Type	Area(s) Affected	Date of Onset	Anecdotal Information	Source
Extreme Cold Event	Clinton County	1/25/2007	An arctic cold front moved through the region causing temperatures from -10 to -25°F, overnight a secondary cold front caused windchill readings ranging from -25 to -35°F	NCDC
Extreme Cold Event	Clinton County	3/06/2007	An arctic cold front swept across northern New York delivering frigid temperatures and winds. Wind chills of -25 to -40°F were recorded. Morning lows on the 7 th in Clinton County included -22° in Chazy and -21° in Plattsburgh.	NCDC

Extreme Cold Event	Clinton County	3/09/2007	An arctic high pressure air mass settled across New England. Morning lows on the 9 th included -19° in Chazy, and -16° in Plattsburgh	NCDC
Extreme Cold Event	Clinton County	1/14/2009	An arctic cold front moved through New York causing temperatures to plummet 20 degrees within a few hours. Massena, NY saw a 20 degree temperature drop in an hour. Some minimum temps on the 15 th included -22°F in Ellenburg Depot, and on the 16 th a low of -25° recorded in Plattsburgh.	NCDC
Extreme Cold Event	Clinton County	1/07/2015	A combination of an arctic cold front and brisk winds resulted in wind chills ranging from -25 to -40°F during the afternoon. Morning temperatures ranged from -10 to -20°F, with observed windchills in mountainous areas ranging from -40 to -70°F	NCDC

Potential Cascading Impacts:

Although heat waves are unusual within Clinton County, there would be a variety of potential cascading impacts. The impacts upon public health being the most immediate impact, as those more vulnerable to heat related illness are impacted. A prolonged period of heat would result in potential drought situations and could therefore increase probability of wildfires.

Extreme cold is a much more common occurrence and most often impacts public infrastructure, particularly water infrastructure. Not every town within the county has a water district, but those that do are aware of the problem extreme cold can pose for pipes, as freezing water expands and causes pipes to break. There are also issues with extreme cold reducing the impact of salt on the roads, making it harder to treat icy surfaces making travel more difficult.

Potential Loss:

Extreme temperature events have a multitude of potential impacts. Extreme cold events often lead to broken pipes as freezing water expands and ruptures lines. Extreme cold also leads to dead batteries in vehicles.

Reported Loss for Clinton County 1996-2017						
Type of Event	Damage*	Annualized Damage*	Events	Annualized Events	Severe Events	Annualized Severe Events
Extreme Cold	\$100K	\$4,348	26	0	0	0
Extreme Heat	0	0	0	0	0	0

Probability of Future Events:

Extreme cold is highly likely to occur in the future while the probability of extreme heat is low. However, with proper preventative measures put into place the impacts of extreme temperature events can be limited. The county, towns, villages and city have taken measures (where appropriate) to mitigate the impacts of extreme temperatures on infrastructure and consider these hazards to have low impacts.

Extreme Heat:

- **Low probability (less than once every 50 years)**
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

Extreme Cold:

- Low probability (less than once every 50 years)
- Medium probability (once every 8-50 years)
- **High probability (once every 1-7 years)**

4.7 FLOODS:

Flooding is defined as: “the temporary condition of partial or complete inundation on normally dry land and it is the most frequent and costly of all hazards in New York. Flooding events are generally the result of excessive precipitation. The severity of a flood event is dependent upon a combination of stream and river basin topography and physiography, hydrology, precipitation and weather patterns, present soil moisture conditions, the degree of vegetative clearing as well as the presence of impervious surfaces in and around flood-prone areas. All forms of flooding can damage infrastructure.” (NOAA, 2009; US Army Corps of Engineers, 2007)

Description:

Four types of floods are common in Clinton County:

1. **Riverine Floods**- typically experienced when precipitation occurs over a given river basin for an extended period of time. This can occur as inundation flooding where standing water will build up in structures in the floodplain.
2. **Flash Floods**- usually a result of heavy localized precipitation falling in a short time period over a given location, often along mountain streams and in urban areas where much of the ground is covered by impervious surfaces. The high velocity of water in a flash flood will cause heavy damages to structures and infrastructure due to erosion as well as impacts from debris in the water.
3. **Ice Jams**- can occur when warm temperatures and heavy rain cause snow to melt rapidly. Snow melt combined with heavy rains can cause frozen rivers to swell, which breaks the ice layer on top of the river. The ice layers often break into small chunks, which float downstream, piling up in narrow passages and near other obstructions such as bridges and dams. The movement of the ice chunks can damage structures and infrastructure.
4. **Seiche Floods**- occurs when strong winds push water along the length of the lake causing water levels to drop at one end and rise at the other. When the wind stops the water rebounds to the other side of the lake. The water will continue back and forth for hours or even days. The damage from seiche waves is similar to tsunami and storm surge.

The following are terms that describe these flood events and are used in public services announcements issued to the public.

- **Flood Watch**- Flooding is possible. Residents should listen to local radio or television weather stations.
- **Flash Flood Watch**- Flash flooding is possible. Residents should be prepared to move to higher ground, continue to listen to local radio or television radio stations.



Image of an ice jam that caused mild flooding in MacDonough park in the city of Plattsburgh March 2009. (source: <https://www.adirondackbasecamp.com/2009/03/ice-jam-saranac-river-plattsburgh/>)

- **Flood Warning-** Flooding is occurring or will occur soon; if advised to seek higher ground, residents should do so immediately.
- **Flash Flood Warning-** A flash flood is occurring; residents should seek higher ground on foot immediately.

These warnings are issues to inform the general public of the severity of floods and are also used to motivate residents of frequently flooded areas to act to preserve their property and/or their lives.

Location and Extent:

Flooding is the main hazard of concern for the county, due to its high probability and the damages that past floods have incurred. Clinton County is vulnerable to riverine floods, flash floods, floods as a result of ice jams, and floods resulting from seiche movement in Lake Champlain. Due to the many sources of flooding, it is a year-round concern for structures and infrastructure located within floodplains.

Floodplains are lowlands adjacent to rivers, streams, creeks, and lakes that are subject to recurring floods. The size of the floodplain is described in the recurrence interval of a given flood. Flood recurrence intervals are explained in more detail later in this section. Maps of flood vulnerable areas are located in the Town and Village section of this plan.

There are 5 main watersheds in Clinton County, NY. Four of the five watersheds drain Lake Champlain (Great Chazy, Saranac, Salmon and the AuSable). The Chateaugay-English watershed drains Northwest to the St. Lawrence River.



Simple map displaying the 5 main watersheds in Clinton County.

National Flood Insurance Program:

The National Flood Insurance Program (NFIP) is the nation’s oldest mitigation of hazard program. It was established by Congress in 1968 to help control the growing cost of federal disaster relief. The National Flood Insurance Program is administered by the Federal Emergency Management Agency (FEMA), part of the U.S. Department of Homeland Security. The National Flood Insurance Program offers federally-backed flood insurance in municipalities that adopt and enforce effective floodplain management ordinances to reduce future flood losses.



Images shows sandbags along Lake Champlain's shoreline in Plattsburgh, NY. (image credit: Brian Mann via ncpr.org)

Floodplain managers say that the NFIP is like a three-legged stool. The legs of the NFIP consist of maps, flood insurance policies and local floodplain ordinances. These legs must be working together to support the overall program.

Flood insurance rate maps (FIRM) are produced by FEMA and are the regulatory floodplain maps. These maps indicate vulnerable flood areas known as the 1% and .02% floodplain. In the past these areas were commonly called the 100- and 500-year floodplain. The FIRM are used by commercial lenders to determine who must purchase flood insurance. Flood insurance must be purchased if their property is located in a flood zone and the mortgage is backed by the federal

RECURRENCE INTERVALS AND ASSOCIATED PROBABILITIES OF OCCURRENCE	
Recurrence Interval	Chance of Occurrence in Any Given Year
10 year	10%
50 year	2%
100 year	1%
500 year	.2%



The January 2018 flooding of the Saranac River caused the evacuation of almost 70 families from Underwood Estates in Plattsburgh, NY. (ncpr.org)

government. These maps are also used by planners and code enforcement officers to determine if proposed new development (structures) are constructed compliant with local floodplain ordinances.

Flood insurance is available to all structures in towns, villages, and cities that are participating members of the NFIP. Insurance can be obtained for the actual structure, and a separate policy can be purchased for the contents of the structure. The maximum amount of a structure policy is \$250,000. A policy that insures a structure includes the mechanical components of the structure; items such as furnace, heaters, water softeners, or air conditioning units would be covered under the structure policy. The content policy covers up to \$100,000. This policy would cover losses to the personal property in the structure.

Floodplain ordinances are required if the jurisdiction participates in the NFIP. These ordinances include provisions for new construction, and substantial improvements to structures located in the

FLOOD INSURANCE CLAIMS CLINTON COUNTY			
Town or Village	Number of Policies	Number of Claims Since 1978	Total Amount of Claims Since 1978
Altona	7	4	\$ 60,732
AuSable	7	16	\$ 402,499
Beekmantown	18	12	\$ 174,912
Black Brook	7	22	\$ 539,678
Champlain, Town of	23	36	\$ 316,036
Champlain, Village of	2	33	\$ 131,527
Chazy	28	17	\$ 321,190
Clinton	0	1	\$ 22,733
Dannemora, Town of	N/A	N/A	N/A
Dannemora, Village of	N/A	N/A	N/A
Ellenburg	10	8	\$ 192,053
Mooers	4	8	\$ 27,099
Peru	8	23	\$424,454
Plattsburgh, City of	36	27	\$1,309,895
Plattsburgh, Town of	38	41	\$ 536,098
Rouses Point	1	1	\$19,410
Saranac	9	8	\$ 45,832
Schuyler Falls	12	26	\$ 242,020
TOTAL	86	283	\$ 4,766,168

special flood hazard areas (SFHA). At a minimum, new structures must be constructed at or above the flood height of the 1% flood height. New York State has a model floodplain ordinance that includes 2 feet of freeboard. This freeboard mandates that new construction is 2 feet above the height of the 1% flood height. This gives an additional level of protection above the 1% flood height.

Each jurisdiction must have a floodplain administrator designated for the town or village. This person is responsible for enforcing the provisions of the local floodplain ordinance. Commonly in

New York and in Clinton County towns, villages the code enforcement officer is designated as the floodplain administrator. In the City of Plattsburgh, the Building Inspector fills this position. This person inspects all construction inside and outside of the SFHA to ensure that local provisions are adhered to when new structures are built in the town or village.

Common provisions of a town or village floodplain ordinances can include:

- Review and permitting of all development in the special flood hazard areas
- Elevate new and substantially improved residential structures above the Base Flood Elevation
- Elevate or dry floodproof new and substantially improved non-residential structures
- Limit development in floodways
- Locate or construct all public utilities and facilities so as to minimize or eliminate flood damage; and
- Anchor foundations or structures to resist floatation, collapse, or lateral movement.

If the local floodplain ordinance is enforced by the local government, structures will be less vulnerable to flood damages.

The table on the previous page indicates the number of flood insurance policies for each town, village, and city in Clinton County. Claims that have been paid on these policies indicate where most of the damage has occurred from floods.

Repetitive loss properties are defined as a property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least \$1000 each have been paid within any 10-year period since 1978.

These structures are the most historically vulnerable, and multiple claims have been paid for damages from floods. These structures are a priority to mitigate and reduce damages to these structures. These structures historically been an economic drain on the NFIP. FEMA has specific grant funds to mitigate these structures.

The severe repetitive loss properties consist of any NFIP-insured residential property that has met at least 1 of the following paid flood loss criteria since 1978, regardless of ownership: 4 or more separate claim payments of more than \$5,000 each (including building and contents payments); or 2 or more separate claim payments (building payments only) where the total of the payments exceeds the current value of the property. These claims must be in ten years period.

FEMA has specific grant funds to mitigate these structures.

REPETITIVE LOSS PROPERTIES CLINTON COUNTY			
Jurisdiction	# of Repetitive Loss Properties	Jurisdiction	# of Repetitive Loss Properties
Altona	0	Ellenburg	4
Ausable	2	Mooers	2
Beekmantown	0	Peru	8
Black Brook	8	Plattsburgh, City	5
Champlain, Town	14	Plattsburgh, Town	2
Champlain, Village	8	Rouses Point	0
Chazy	2	Saranac	3
Clinton	0	Schuyler Falls	1
Clinton County Total Repetitive Loss Properties			59

Previous Occurrences:

Presidential disaster declarations have been declared for flood events in Clinton County. Tropical Storm Irene was a substantial event in the recent past that incurred dramatic costs. The following is a partial list of events that have impacted Clinton County. Descriptions of the flood events that have occurred since 2011 are presented after the table in narrative form.

FLOOD EVENTS IN CLINTON COUNTY 1996-2018					
Event Type	Area(s) Affected	Date of Onset	Property Damage	Anecdotal Information	Source
Flood/ Ice Jams	Champlain (Great Chazy River)	1/19/1996	\$4,000,000	Above normal temperatures, strong winds caused flooding due to snow melt, rainfall and ice jams. Numerous power outages.	NCDC, USGS, NYTimes
Flood	Eastern Clinton County	5/02/1996	\$10,000	Rainfall and snow melt resulted in Lake Champlain exceeding 100'	NCDC
Flood	Eastern Clinton County	5/12/1996	\$10,000	Runoff into Lake Champlain resulted in minor lakeshore flooding, highest level was 100.9'	NCDC
Event Type	Area(s) Affected	Date of Onset	Property Damage	Anecdotal Information	Source

Flood	Dannemora, Altona	7/03/1996	\$25,000	Between 1.5" -3.5" of rain fell causing road washouts	NCDC
Flash Flood	Plattsburgh, Chazy	7/23/1996	\$10,000	Thunderstorms resulted in flash flooding along Lake Shore Dr and Route 9. Pea sized hail, and downed trees were also reported.	NCDC, NOAA Storm Data
Flash Flood	Countywide	11/09/1996	\$23,000,000	Periods of heavy rain resulted in several rivers exceeding record levels. Many roads and bridges were damaged or washed out.	NCDC
Flash Flood	Countywide	1/08/1998	\$5,000	Flooding along the AuSable and Saranac Rivers. No structures were flooded.	NCDC
Flash Flood	Countywide	3/28/1998	\$250,000	Unseasonably warm weather caused rapid snowmelt, in addition shower and thunderstorms contributed to flooding in the Saranac and Great Chazy Rivers	NCDC
Flash Flood	Countywide	4/01/1998	\$10,000	Spring flooding caused high waters in Great Chazy and Saranac Rivers. Road closures due to washouts.	NCDC
Flash Flood	Altona	6/18/1998	\$50,000	Torrential rain fell in and around Altona washing out several roads. Great Chazy flooded areas along its path.	NCDC
Flash Flood	Beekmantown, Dannemora	6/25/1998	\$20,000	Torrential rain resulted in several roads being washed out. No structures were flooded.	NCDC
Flash Flood	Countywide	6/27/1998	\$7,000,000	State of Emergency was declared due to numerous bridge and road wash outs. Portions of I-87 closed.	NCDC, Press Republican
Flash Flood	Countywide	7/01/1998	\$2,500,000	Wet soil conditions lead to rapid rise in rivers and streams. Numerous roads were flooded and washed out.	NCDC
Flash Flood	Altona, Harkness, Moers, Peru	7/16/1998	\$100,000	Thunderstorms and torrential downpours lead to numerous roads being flooded and several washouts.	NCDC
Flash Flood	Countywide	1/24/1999	\$10,000	Mild weather and melting snow resulted in many rivers exceeding their banks.	NCDC
Event Type	Area(s) Affected	Date of Onset	Property Damage	Anecdotal Information	Source

Flash Flood/ Ice Jam	Countywide	2/27/2000	\$75,000	Mild weather resulted in high snowmelt and runoff. Ice Jams formed on several rivers.	NCDC
Flood	Saranac	4/09/2000	\$5,000	Minor river flooding over Bowen Road due to rise in Saranac River.	NCDC
Flood	Champlain	12/18/2000	\$5,000	Minor flooding occurred in the Great Chazy River in Perry Mills.	NCDC
Ice Jam	Champlain	4/09/2001	\$15,000	An ice jam formed on the Great Chazy River. Some roads blocked by water. Water in the basement of a few residences.	NCDC
Flood	Eastern Clinton County	4/23/2001	\$10,000	Snowmelt and runoff resulted in flooding along the shores of Lake Champlain. Lake levels reached 100.99' and remained above flood stage (100') until May 9 th .	NCDC
Flood	Countywide	6/12/2002	\$20,000	Heavy rainfall fell on the area due a stalled frontal boundary. 2"- 4" of rain fell on the region, a few roads were closed	NCDC
Flood/ Ice Jams	Morrisonville	3/21/2003	\$1,000	Rainfall coupled with mild weather resulted in ice jams and swollen rivers.	NCDC
Ice Jams	Champlain	3/26/2003	\$1,000	Ice jams on the Great Chazy River resulted in flooding of low-lying fields.	NCDC
Flash Flood	Peru	8/05/2003	\$5,000	Thunderstorms and torrential downpours resulted in flooding of local roads.	NCDC
Flood	Champlain	12/25/2003	\$1,000	Rain and mild temperatures resulted in minor flooding.	NCDC
Flood/ Ice Jams	Champlain	3/07/2004	\$20,000	Rainfall and mild temperatures created ice jams along the Great Chazy River. Low land and road flooding, with a few home evacuations.	NCDC
Flood/ Ice Jam	Champlain	4/01/2005	\$5,000	An ice jam on the Great Chazy River resulted in the flooding of low-lying areas.	NCDC
Event Type	Area(s) Affected	Date of Onset	Property Damage	Anecdotal Information	Source

Flood	Champlain	4/24/2005	\$1,000	Rainfall caused rivers to swell, minor flooding along the Great Chazy River.	NCDC
Flash Flood	Peru, Keeseville	6/16/2005	\$135,000	Thunderstorms with very heavy rainfall moved slowly south to north through Clinton County. Numerous road closures.	NCDC
Flood/ Ice Jams	Champlain	1/19/2006	\$5,000	Above average temperatures coupled with a heavy rainfall increased waterflows in area rivers. Ice jams formed on the Great Chazy River.	NCDC
Flood/ Ice Jams	Champlain	3/16/2007	\$25,000	Warm temperatures caused snowmelt which combined with rainfall to create ice jams along the Great Chazy River. Some evacuations of residents.	NCDC
Flash Flood	Dannemora, Mooers	7/28/2007	\$75,000	Thunderstorms resulted in washed out roads and flooding in some basements. Low lying areas in floodplain were flooded.	NCDC
Flood/ Flash Flood	Altona, Harrigan Corners, Ellenburg	8/04/2010	\$750,000	Two rounds of heavy rainfall resulted in over 5" of rain to fall over a two-day period. Flooding occurred in the north slopes of the Adirondacks and the Great Chazy basin.	NCDC
Flood	Cadyville	10/15/2010	\$150,000	High winds and heavy rainfall caused power outages, as well as the temporary closure of the NY/VT ferries. 25' section of Delisle Road was washed out.	NCDC
Flood/ Ice Jam	Champlain	3/18/2011	\$10,000	Rainfall coupled with snowmelt caused ice jams to form along the Great Chazy River. Low lying areas were flooded.	NCDC
Flood	Churubusco	4/11/2011	\$15,000	Combination of rainfall and snowmelt resulted in the flooding and closure of several roads. A portion of Route 190, the Military Turnpike had flowing water over the road.	NCDC
Event Type	Area(s) Affected	Date of Onset	Property Damage	Anecdotal Information	Source

Flood/ Seiche Flood	Eastern Clinton County	4/13/2011	\$4,500,000	Record flooding occurred along the shores of Lake Champlain from mid-April to mid-June.	NCDC
Flood/ Flash Flood	West Plattsburgh	4/27/2011	\$10,000	Snowmelt from an above normal snowpack and daytime high temps in the 50s and 60s combined with rainfall resulted in flash flooding along the Saranac River.	NCDC
Flash Flood	Peru	5/27/2011	\$300,000	Heavy rain from thunderstorms caused flash flooding resulting in road washouts and high water entering some homes.	NCDC
Flash Flood	Countywide	8/28/2011	\$9,500,000 (another \$1M in crop damages)	Tropical Storm Irene deposited 3” - 6” of rain to Clinton county. Significant flash floods occurred in the Saranac, AuSable, and Great Chazy Rivers. Numerous roads, bridges, homes and businesses were washed out. Two deaths resulted from flood. (For further description see “detailed narrative” section)	NCDC
Flood	Saranac, Dannemora	6/11/2013	\$1,800,000	Rainfall in excess of 3” on saturated soils resulted in elevated river levels. Closure of over a dozen roads.	NCDC
Flash Flood	Ledger Corners	6/25/2013	\$250,000	Flash Flooding washed out portions of roads. Route 374 was closed between Plan Road and Hugh Herron Road.	NCDC
Flood	Altona, Beekmantown	6/29/2013	\$175,000	Heavy rainfall in the higher terrain of central Clinton county caused flooding of Route 190, the Military Turnpike, closing it from Duley Road to Seymour Road. Flooding also occurred on General Leroy Manor Road, Route 734, and roads in Rand Hill.	NCDC
Flash Flood	Beekmantown, Peru	7/04/2013	\$125,000	Rainfall rates of 2” per hour caused flash floods that damaged roads throughout Beekmantown and Peru including Route 22.	NCDC
Flood/ Ice Jam	Champlain	4/08/2014	\$1,000	Ice jams caused flooding along the Great Chazy River. River street closed, water approached roads and property, but no structures flooded.	NCDC
Event Type	Area(s) Affected	Date of Onset	Property Damage	Anecdotal Information	Source

Flood	Champlain, Saranac	4/15/2014	\$250,000	Heavy rainfall and snowmelt combined to produce flooding in the Saranac and Great Chazy Rivers. Local roads were flooded along both of the rivers.	NCDC
Flash Flood	Black Brook, Lyon Mountain, Peru	6/29/2017	\$20,000	Thunderstorms resulting in rainfall amounts of 2"-3" caused flash flooding. Sunset Road in Lyon Mountain was washed out, and Route 9 in Peru was inundated. Low lying areas were flooded, River Road, and Bowen Road were inundated by Saranac River flood waters.	NCDC
Flood/ Ice Jam	Plattsburgh	01/12/2018	\$7,000,000 (not included in total)	Warm temperatures coupled with rainfall, resulted in the creation of ice jams along the Saranac River. The subsequent flooding resulted in evacuations which displaced approximately 70 families.	Wcax.org, ncpr.org,
Total Damages from 1996-2017*				\$55,460,000	NCDC

* the \$7,000,000 from the January 2018 was not included in the total because damages from 2018 have not been calculated by the NCDC database as of 3/01/2020

Champlain 1/19/1996 Flash Flood. Warm temperatures (temperatures started at 20°F and rose to 75°F) coupled with high amounts of rainfall caused devastating flash floods throughout the county, a State of Emergency was declared. Gov. Pataki declared Clinton county a disaster area following this flood event. Hundreds of miles of roads were unnavigable, and some were completely isolated. Approximately 7" of rain fell in 12 hours devastating infrastructure throughout the region. No injuries or deaths were reported and an approximate \$4,000,000 in property damages were incurred during this event.

Peru 06/27/1998 Flash Flood. An area of low pressure across New York and New England caused extensive flooding in the eastern half of Clinton County. Many rivers flooded including the Saranac, AuSable, Little AuSable, Great Chazy, and Salmon Rivers. There were numerous roads and bridges washed out that resulted in the declaration of a State of Emergency. A dam burst in the Peru area around 3AM which added to the extreme flood conditions already occurring in the area. The Little AuSable resulted in massive flooding that required the evacuation of an apartment complex, Hayworth Village. The first floor of the apartment complex structures in Hayworth Village in Peru, NY were inundated with flood waters. No injuries or deaths were reported, the flood resulted in an estimated \$7,000,000 in property damages.



Ausable Point Campground located in the Southeastern corner of Clinton County suffered a shortened season during 2011 as a result from the extremely high level of Lake Champlain, the photo shows a campsite still completely underwater in June of that year. The campground was able to open in mid-July. (photo credit: S.Thayer)

Champlain, Village of 02/27/2000 Flash Flood/Ice Jams. Mild weather resulted in high snowmelt with runoff into area rivers. Ice Jams formed especially on the Great Chazy River in and around Perry Mills and Champlain. In addition, a cold front stalled across New England on Monday with an area of low pressure moving along the front with steady rain. The river gage for the Great Chazy River at Perry Mills was around 3' above flood stage. Extensive flooding was reported in the Village of Champlain with water in houses and over roads. Route 9 was closed. No injuries or deaths were reported, the flood caused an estimated \$75,000 worth of property damage.

Dannemora 7/28/2007 Flash Flood. A weak upper low-pressure system drifted across a warm, moist and unstable airmass across northern New York during the early afternoon on the 28th. Several slow moving, heavy rain producing thunderstorms traveled south to north across some of the same areas affected by heavy rainfall on the 17th. Localized rainfall amounts exceeded 3" which produced flash floods which washed out roads and flooded basements. A small brook overflowed

onto Cook Street with flooded road, lawns, and basements. There were no injuries or deaths reported, an estimated \$45,000 in property damage occurred.

Altona & Ellenburg 8/04/2010 Flood/Flash Flood. Two-day rainfalls in excess of 5” fell over steep terrain in the northern Adirondacks (Ellenburg Mountain and Spruce Hill). Numerous roads were covered by rushing water and were impassable. There was widespread damage to road surfaces in both towns. One home flooded as a result of debris catching on a small bridge created a dam that diverted flow. A motel, general store, and two seasonal RV parks were flooded. In one RV park near Ellenburg 3 people were trapped in flood waters and required rescue. No injuries or deaths were reported, approximately \$750,000 in property damages.

Plattsburgh 1/12/2018 Flood/ Ice Jam. Warm temperatures in the region coupled with rainfall caused substantial runoff which lead to the formation of ice jams on major rivers in the county. An ice jam formed near SUNY Plattsburgh on the Saranac River causing the flooding of Underwood Estates, a mobile home park located along the river. Water was 3’-4’ deep in areas throughout the park after the water topped a berm that typically protects the park from the waters of the river. 50 homes and were evacuated, and forced evacuations remained in place for several days. Temperatures dropped after the flood event resulting in cars and other items to be frozen in place. The American Legion on Quarry Road was used as a temporary shelter for those displaced by the flood event. No injuries or deaths were reported, approximately \$7,000,000 in aid was provided by the governor to assist with the purchasing of homes to replace those lost and damaged in the flood.

Detailed Narratives of Major Flood Events:

Lake Champlain 4/13/2011-6/18/2011 Flood/Seiche Flood. Record flooding occurred along the shores of Lake Champlain from mid-April to mid-June. Flood stages for the USGS gauges on Lake Champlain begin at 100’ and were surpassed on April 13th and did not recede until June 18th. The lake exceeded its previous flood record of 102.1’ on April 28th and crested on May 6th at 103.26’.

In addition, strong south to southeast winds of 25 to 35 mph caused extensive damage due to 3’ to 5’ wave action as well as .5’ to 1’ seiches on the windward facing shores. These episodes occurred on April 23rd, May 2nd, May 22nd-23rd, and June 1st. North to northeast winds of 20 to 30 mph caused extensive damage due to 2 to 4-foot waves and seiches around .5’ on windward shorelines on May 9th-10th, and June 1st-2nd. These record lake levels were due to a combination of 125-150 percent of normal winter snowfall, subsequent melting of that snowpack, and an abnormally wet meteorological spring within the Lake Champlain basin (normal precipitation is 8.5”-10” observed was 16”-26”).



Photo shows the high level of the lake in 2011, the Lakeside Apartments buildings were inundated and later had to be demolished as a result of flood damages (image source: wamc.org)

There was serious and extensive flooding to dozens of lakeshore roads, 500-1000 residences, and dozens of businesses. There was a periodic closing of the Lake Champlain ferry from Cumberland Head to Grand Isle, VT as well as a delay in the opening of two other crossings. There were no reported injuries or deaths. There was an estimated \$4.5 million in property damages.

Tropical Storm Irene 8/28/2011 Flood. Tropical Storm Irene produced 3”-6” of torrential rains that lead to flash flood conditions in rivers throughout the region. Most notably flash flooding happened on the Ausable, Saranac, and Great Chazy.

In the early hours of August 28th Tropical Storm Irene moved across southeast New York, causing damaging winds and torrential rain throughout Clinton County. Winds were observed in excess of 60 mph and it was estimated 2”-4” of rain were deposited in the Champlain Valley, while 4” to over 7” of rain were estimated to have fallen on the Adirondacks in southern Clinton County. Winds downed trees and impacted some powerlines in the afternoon hours of the storm.

The heavy rainfall led to flooding in agricultural fields which impacted harvesting. It is estimated that there was approximately \$1,000,000 in crop damages in Clinton County as a result of this storm.

In the town of Altona, two deaths occurred as a result of a flash flood on the Great Chazy River. The gauge at Perry Mills recorded a crest of 9.5' on the Great Chazy River, flood stage begins at 9'. A 23-year-old male, and a 24-year-old female were trapped in their car attempting to cross a washed-out bridge on Devil's Den Road, the car fell into the river and unfortunately, they were unable to be rescued. Many other evacuations and rescues happened all over the county as emergency responders were called to assist individuals in flooded homes.

The Ausable River, which partially forms the southern border of Clinton County had a record setting crest of 18.43'. The previous record for that river was set in November 1996 at 15.22', the flood stage occurs at 7.0'. The flash flooding along that river led to portions of 9N being impassable or completely eroded away. Some of the most impressive damages happened to General Leroy Manor Road which runs from Dannemora to Beekmantown. The road was undermined on both ends by brooks that run underneath the road, on the eastern end the hole was about 75' deep and between 500'-600' across. The road remained closed for over a month as road crews installed 10' diameter pipe and repaired the road.

Tropical Storm Irene was a hallmark event that caused widespread flash flooding throughout the region. There were damages to roads and homes throughout the county with total property damages estimated to be \$9,500,000. There were another \$1,000,000 in crop damages reported for the county. There were no injuries reported, however there were 2 deaths that were a direct result of the flash floods caused by this storm.

Potential Cascading Impacts:

Floods have a variety of cascading impacts upon the infrastructure and structures within the town. In the short term, roads and bridges can be washed out limiting mobility or isolating areas with limited road access. This can in turn impact the ability of emergency response vehicles to reach individuals in danger of being inundated. Utilities can be impacted as power and water lines are severed leaving people without access to power or clean water. Flooding can impact sewage treatment in a variety of ways, from the impacts on continuity of pipelines, to the ability of wastewater treatment plants to function. In a severe precipitation event, often wastewater treatment plants are overwhelmed with an excess inflow of water that cannot be processed by their system. Septic systems that are submerged can no longer treat sewage being produced by residential buildings and can become problematic during the flood event.

Long-term there are many public health considerations associated with flooding. Structures that have been flooded need proper cleaning in order to be habitable once they have experienced flooding. Individuals in flood events can have negative impacts upon their health. Floods that result

in standing water remaining for several days can increase the potential for vector-borne illness as insects and other pests thrive in such conditions.

Floods also have the potential to weaken dams and cause collapse. This is a particular concern during severe precipitation events where the flow of water causes erosion around the banks of the river potentially causing the dam to be undermined.

Potential Loss:

The town and village section has data on the potential loss determined for each individual jurisdiction in the county. Please see the town, village, and city information later in this document. Reported losses for Clinton County were reported in the 2019 New York State Hazard Mitigation Plan.

REPORTED LOSS FOR CLINTON COUNTY 1996-2017					
Damage*	Annualized Damage*	Events	Annualized Events	Severe Events	Annualized Severe Events
\$39,500	\$1,720	46	1	4	0

*value in thousands of dollars

There are a total of 586 structures in the floodplain in the various jurisdictions in Clinton County. Below is a table that breaks down the structure by property class code and reports the total assessed value of those structures.

The structures fall within a variety of class codes, here is a list of the general categories for reference:

- 100 Agriculture
- 200 Residential
- 300 Vacant Lands
- 400 Commercial
- 500 Recreation/ Entertainment
- 600 Community Services
- 700 Industrial
- 800 Public Service
- 900 Forest, Conservation Lands, and Parks

One important thing to keep in mind when viewing the structures in each municipality is that apartments and mobile home parks are categorized as “400- Commercial” and therefore those structures may actually be occupied housing units. Jurisdictions that do not have housing in their “400” structures are Altona, Chazy, Ellenburg, Town of Plattsburgh and Rouses Point.

Structures within the Floodplain in Clinton County by Jurisdiction and Class Code				Structures within the Floodplain in Clinton County by Jurisdiction and Class Code			
Town	Class Code of Structures	Number of Structures in Floodplain	Structure, Total Assessed Value	Town	Class Code of Structures	Number of Structures in Floodplain	Structure, Total Assessed Value
Altona				Moovers			
	200	6	\$419,500		200	10	\$585,600
	400	2	\$2,458,000		300	2	\$2,400
	Total	8	\$2,877,500		Total	12	\$588,000
AuSable				Peru			
	200	38	\$3,390,300		200	3	\$206,800
	300	5	\$48,600		300	1	\$65,400
	400	13	\$3,202,200		600	1	\$480,000
	800	1	\$975,000		Total	5	\$752,200
	Total	57	\$7,616,100	Plattsburgh, City			
Beekmantown					200	18	\$1,781,800
	200	39	\$3,468,900		400	73	\$105,987,700
	400	11	\$4,440,800		500	2	\$1,512,200
	500	4	\$1,040,200		600	1	\$123,600
	Total	54	\$8,949,900		700	13	\$3,250,000
Black Brook					800	7	\$143,687,300
	200	24	\$1,760,400		900	4	\$12,615,000
	300	1	\$1,500		Total	118	\$268,957,600
	400	9	\$1,213,400	Plattsburgh, Town of			
	800	1	\$980,000		200	12	\$1,363,400
	Total	35	\$3,955,300		400	1	\$119,200
Champlain , Town of					500	17	\$1,951,600
	200	52	\$3,703,300		700	1	\$855,700
	300	6	\$2,200		800	4	\$7,689,800
	500	2	\$220,800		Total	35	\$11,979,700
	Total	60	\$3,926,300	Rouses Point			
Champlain, Village of					200	2	\$27,700
	200	13	\$375,700		Total	2	\$27,700
	300	1	\$4,000	Saranac			
	400	27	\$1,886,000		100	1	\$10,200
	Total	41	\$2,265,700		200	9	\$441,200
Chazy					300	1	\$10,000
	200	50	\$7,029,600		400	1	\$34,900
	300	1	\$17,700		800	1	\$21,961,000
	400	1	\$102,700		Total	13	\$22,457,300
	500	1	\$20,100	Schuyler Falls			
	800	1	\$28,600		200	25	\$1,839,400
	Total	54	\$7,198,700		900	1	\$1,600
Dannemora, Town of					Total	26	\$1,841,000
	200	3	\$524,000	Clinton County Total			
	Total	3	\$524,000			586	\$349,473,800
Ellenburg							
	200	57	\$4,815,500				
	300	2	\$21,600				
	400	3	\$427,800				
	500	1	\$291,900				
	Total	63	\$5,556,800				

Probability of Future Events:

Flooding is the primary hazard of concern for Clinton County and will continue to occur on a frequent basis. The county has the potential to experience flooding any time of the year due to the multiple sources of flooding common within the region. Flooding in both the rivers and along the shore of Lake Champlain are of concern for the jurisdictions within Clinton County. The frequency of flooding is likely to increase as weather patterns change and result in increased snow pack, temperature fluctuations, and severe rain events.

The FIRMs have determined the probability of future occurrences. The 1% chance flood has the probability of occurring once every year. Previously, people used the term “100-year flood,” this was misleading, in that it implied the flood would occur only once every 100 years.

A better way to explain the statistic is as follows. If you put 99 white stones (that represent time without a 100-year flood) and 1 black stone (that represent a time with a 100-year flood) into a bag and remove one each day, the chances that the stone you draw is black (1 out of 100) is the change of the flood occurring. But the next day you reset the draw, and again start with 99 white stones and 1 black stone, so the odds are the same every day. Because the odds of a flood for a given timeframe do not depend on the results of a previous time frame, it becomes impossible to state that since a region had a 100-year flood last year, it won’t have one next year. This is an easy method to illustrate the chance of a 1% probability flood.

The FIRM have determined the probability of occurrence for floods. A 100-year flood should be called a 1% chance flood, and the 500-year flood a .02% chance flood. Floods in Clinton County have a high probability of occurring.

- Low probability (less than once every 50 years)
- Medium probability (once every 8-50 years)
- **High probability (once every 1-7 years)**

4.8 HAIL EVENTS:

Hail – A showery precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud.

Hail Index – An indication of whether the thunderstorm structure of each storm identified is conducive to the production of hail.

Hail Size – Typically refers to the diameter of the hailstones. Warnings and reports may report hail size through comparisons with real-world objects that correspond to certain diameters.

Description:

Hailstorm events can occur anywhere within New York State independent of, or during, a tornado, thunder or lightning storm event. All of Clinton County has the potential to be impacted by a hail event.

Hailstorm occurrences are typically localized in scale, and while past occurrences have resulted in loss of life, the severity is not considered likely to cause a life safety threat to large populations. In addition, there is not a cost-effective method to mitigate future property and crop damage caused

HAIL DIAMETER DESCRIPTION	
Description	Diameter (inches)
Pea	0.25
Marble or Mothball	0.50
Penny or Dime	0.75
Nickel	0.88
Quarter	1.00
Half Dollar	1.25
Walnut or Ping Pong Ball	1.50
Golf Ball	1.75
Hen's Egg	2.00
Tennis Ball	2.50
Baseball	2.75
Tea Cup	3.00
Grapefruit	4.00
Softball	4.50

Source: NOAA

by hailstorms. Impacts to structures, and automobiles can be severe. Damage to agricultural crops can be the largest impact from a hail event.

Location and Extent:

The following information was obtained from the New York State Hazard Mitigation Plan of 2019. There are two schools of thought about hail formation. In the past, the prevailing thought was that hailstones form by colliding with supercooled water drops. Supercooled water will freeze on contact with ice crystals, frozen rain drops, dust or some other nuclei. Thunderstorms that have a strong updraft that lifts hailstones to the top of the cloud where they encounter more supercooled water and continue to grow. The hail falls when the thunderstorm's updraft can no longer support

the weight of the ice or when the updraft weakens. The stronger the updraft the larger the hailstone can grow.

Recent studies suggest that supercooled water may accumulate on frozen particles near the back-side of the storm as they are pushed forward, across, and above the updraft by the prevailing winds near the top of the storm. Eventually, the hailstones encounter downdrafts and fall to the ground.

Hailstones grow two ways: by wet growth or dry growth processes. In wet growth, a tiny piece of ice is in an area where the air temperature is below freezing, but not super cold. When the tiny piece of ice collides with a supercooled drop, the water does not freeze on the ice immediately; instead, liquid water spreads across tumbling hailstones and slowly freezes. Since the process is slow, air bubbles can escape, resulting in a layer of clear ice.

Dry growth hailstones grow when the air temperature is well below freezing and the water droplet freezes immediately as it collides with the ice particle. The air bubbles are "frozen" in place, leaving cloudy ice.

HAIL EVENTS IN CLINTON COUNTY 1996- 2017					
Area(s) Affected	Date of Onset	Property Damage	Hail Size (inches)	Anecdotal Information	Source
Churubusco	8/22/1997	\$10,000	1.75	Unstable air mass over the Great Lake produced multiple thunderstorms	NCDC
Saranac	5/14/2004	\$1,000	0.75	A low-pressure system moving in from north produced several thunderstorms.	NCDC
Dannemora/ Plattsburgh	5/28/2005	\$2,000	0.25	Cold upper level trough produced pea-sized hail.	NCDC
Schuyler Falls/ Peru	7/22/2005	\$5,000	0.75	A cold front moving southwest through New York triggered thunderstorms. Power outages were reported in Peru.	NCDC
Chazy	8/07/2006	(\$400,000 in crop damages)	1.50	A supercell developed over Clinton County resulting in 700 acres of Chazy Orchards being damaged.	
Countywide	8/16/2007	\$70,000	1.75	Numerous reports of hail ranging from quarter to golf ball size. Damages to cars, boats, and houses. Estimated winds of 60mph.	NCDC
Peasleeville	7/4/2012	\$50,000	2.25	Numerous large hail accompanied by damaging winds. Significant damage to houses, vehicles, and other property.	NCDC
Total Property Damages from 1996- 2017				\$138,000	
Total Crop Damages from 1996- 2017				\$400,000	



Apples damaged in the 2016 hail event in Peru, NY. Over 800 acres of apple crops were damaged in Peru's various orchards doing millions of dollars of damages to the crops (no exact amount of crop damages available as of 2020). (photo source: press-republican.com)

Hailstones can have layers like an onion if they travel up and down in an updraft, or they can have few or no layers if they are "balanced" in an updraft. Scientists can tell how many times a hailstone traveled to the top of the storm by counting the layers. Hailstones can begin to melt and then re-freeze together- forming large and very irregularly shaped hail. (NOAA/NSSL)

Previous Occurrences:

Clinton County has been experienced 44 hail events since 1996 however a majority of these events have not any property or crop damage reported by the NCEI database. The events that have caused property and crop damages are listed in the previous table. One particularly severe hail event is described in a short narrative.

Clinton County 8/16/2007. Scattered thunderstorms developed in a moderately unstable airmass across the Champlain Valley in the afternoon. One thunderstorm developed high wind shear which

intensified it into a supercell. The supercell moved across the county causing significant straight-line wind damage from uprooted trees to roof damage on homes. Hail ranging from nickel sized to golf ball sized was reported throughout the region. There were damages to cars including dents and several broken windshields, and a few house windows were broken. In Plattsburgh there were several damaged boats and docks in the local marina. There were no deaths or injuries reported, and approximately \$70,000 worth of property was damaged.

Peru 6/28/2016. A cold front moved across an unstable air mass during the afternoon developing severe thunderstorms that resulted in strong damaging wind gusts and one inch diameter hail (and .75" to 1.25" diameter hail reported in surrounding areas). There was also flash flooding as part of this incident. The hail caused significant damages to apple crops in Peru, NY and resulted in the crop only being suitable to sell for juice. 225 acres at one Peru orchard were considered a complete loss. Millions of dollars of crop damages are estimated by the town officials, though no specific number has been released by the NCEI database as of yet.

Peru 6/27/2017. Unseasonably cold air, as well as an unstable atmosphere resulted in the development of rain and thunderstorms in the Champlain Valley. The cold air mass resulted in the production of hail up to 1" in diameter hail which damaged crops throughout the town, particularly in Valcour. Millions of dollars of crop damages are estimated by the town officials, though no specific number has been released by the NCEI database as of yet.

Potential Loss:

It is estimated that damage from hail approaches \$1,000,000,000 in the U.S. annually. U.S. Agriculture is typically the most affected by such hailstorms, because it causes severe crop damage, and even a minor storm with relatively small size hailstones can have a devastating effect. Vehicles, roofs (residential/commercial), and landscaping are the other things most commonly damaged by hail. It is recommended that jurisdictions that have agricultural markets and industries take into account the vulnerability of the jurisdiction in regard to the effects of hail. Hail has also been known to cause injuries and occasionally has been fatal. The deadliest hailstorm on record occurred in India on April 30, 1988, and it killed 246 people and 1600 domesticated animals. Hail has been a minor hazard to Clinton County.

Data in the following table was obtained from the 2019 New York State Hazard Mitigation Plan website.

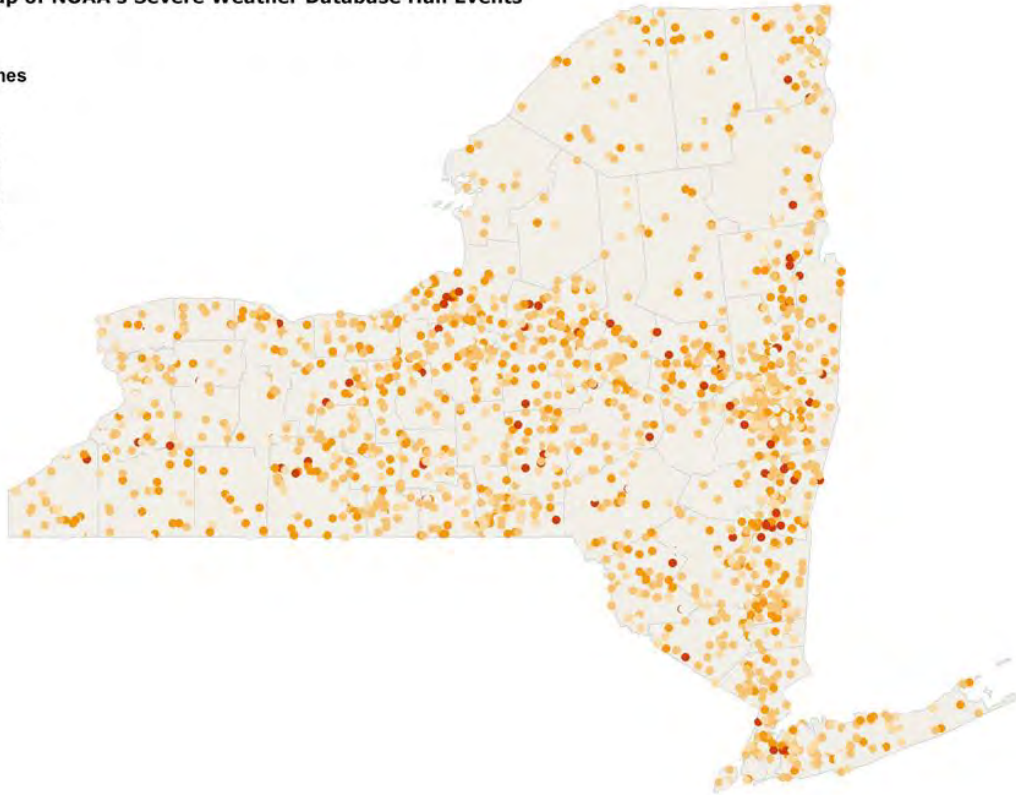
REPORTED LOSS FOR CLINTON COUNTY 1996-2017					
Damage*	Annualized Damage*	Events	Annualized Events	Severe Events	Annualized Severe Events
\$538	\$23	74	2	0	0

*value in thousands of dollars

**Statewide Map of NOAA's Severe Weather Database Hail Events
1955-2017**

Hail size in inches

- ≤ 0.75
- 0.76 - 0.95
- 0.96 - 1.00
- 1.01 - 1.75
- 1.76 - 4.00



Hail will continue to impact residents, structures and the agriculture industry. Obtaining adequate insurance from crop to auto to homeowner, will ensure funds are available to mitigate damages from hail events.

Probability of future events:

Clinton County considers the probability of future hail events to be low.

- **Low probability** (less than once every 50 years)
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

4.9 HURRICANES, TROPICAL STORMS, AND NOR'EASTERS:

Hurricanes, Tropical Storms, and Nor'easters are defined as: "cyclones and are any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise (in the Northern Hemisphere) and whose diameter averages 10-30 miles across. While most of New York is not directly affected by the devastating impacts cyclonic systems can have on coastal regions, many areas in the state are subject to the primary damaging forces associate with these storms including high-level sustained winds, heavy precipitation, and tornadoes. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season (June through November)." (FEMA, 1997)

Description:

Clinton County is most often affected by the rains from hurricanes events and is less impacted by the winds from these tropical events.

The following terms are used to describe hurricanes and other tropical events.

- **Nor'easter** - An intense storm that can cause heavy rain and snow, strong winds, and coastal flooding. Nor'easters have cold, low barometric cores.
- **Tropical Storm** - An organized system of strong thunderstorms with a defined surface circulation and maximum sustained winds of 39-73mph.
- **Tropical Cyclone** - An organized, rotating, low-pressure weather system of clouds and thunderstorms that develops in the tropics.
- **Tropical Depression** - A tropical cyclone with sustained winds of 38 mph or less.
- **Hurricane** - Tropical cyclones, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74mph or more and blow in a large spiral around a relatively calm center or "eye". Circulation is counterclockwise in the Northern Hemisphere.
- **Storm Watch** - A warning issued by the National Weather Service indicating that a Hurricane or Tropical Storm is possible in the specified area, usually within 36 hours.
- **Storm Warning** - A warning issued by the National Weather Service indicating that Hurricane or Tropical Storm conditions are expected in the specified area, usually within 24 hours.

Location:

Clinton County does not have any open-ocean coastline. However, the impacts of coastal storm systems such as hurricanes, tropical storms, and nor'easters can extend well inland. Tropical storm systems (i.e. hurricanes, tropical storms, tropical depressions) impacting Clinton County and the rest of New York develop in tropical or sub-tropical waters of the Atlantic Ocean, Gulf of Mexico, or Caribbean Sea. Nor'easters are extra-tropical storms which typically develop from low-pressure centers off the Atlantic Coast of North Carolina during the winter months. Extra-tropical is a term used to describe a hurricane or tropical storm whose cyclone has lost its 'tropical' characteristics. While an extra-tropical storm denotes a change in weather pattern and how the storm is gathering energy, it may still have winds that are tropical storm or hurricane force.

In some cases, the center of circulation for these storm systems, where wind and precipitation effects are often most intense, can track inland and move directly through New York and Clinton County. Clinton County can be affected by these events even when the circulation centers pass at a distance of several hundred miles, due to the size of these events. In either case, these storms are regional events that can impact very large areas, hundreds to thousands of miles across over the life of the storm. In general, coastal storm systems affect Essex.

Extent:

SAFFIR-SIMPSON SCALE CATEGORIES WITH ASSOCIATED WIND SPEEDS AND DAMAGES (NHC, 2009).		
Storm Category	Wind Speed (mph)	Description of Damages
1	74-95	<i>MINIMAL</i> : Damage is limited primarily to shrubbery and trees, unanchored mobile homes and signs. No significant structural damage.
2	96-110	<i>MODERATE</i> : Some trees are toppled; some roof coverings are damaged and major damage occurs to mobile homes. Some roofing material, door and window damage.
3	111-130	<i>EXTENSIVE</i> : Some structural damage to small residences and utility buildings, with a minor amount of curtain wall failures. Mobile homes are destroyed. Large trees are toppled. Terrain may be flooded well inland.
4	131-155	<i>EXTREME</i> : Extensive damage to roofs, windows and doors; roof systems on small buildings completely fail. More extensive curtain wall failures. Terrain may be flooded well inland.
5	>155	<i>CATASTROPHIC</i> : Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Massive evacuation of residential areas may be required.

Intense precipitation and wind resulting in flood and wind damage are the most common impacts associated with coastal storm systems in Clinton County. Nor'easters develop as extra-tropical cyclonic weather systems over the Atlantic Ocean and are capable of producing winds equivalent to hurricane or tropical storm force; precipitation from these storms may also come in the form of heavy snow or ice.

The impact tropical storm or hurricane events have on an area is typically measured in terms of wind speed. Expected damage from hurricane force winds is measured using the Saffir- Simpson Scale. The Saffir-Simpson Scale categorizes hurricane intensity linearly based upon maximum sustained winds, barometric pressure and storm surge potential, which are combined to estimate potential damage. The following table lists Saffir-Simpson Scale categories with associated wind speeds and expected damages. Categories 3, 4 and 5 are classified as “major” hurricanes. While major hurricanes comprise only 20% of all tropical cyclones making landfall, they account for over 70% of the damage in the United States. While Clinton County usually is not impacted by the extreme winds from a hurricane or tropical storm, Clinton can be impacted minimally by these winds in that trees can be knocked down and utility lines can be impacted by trees being compromised by these winds.

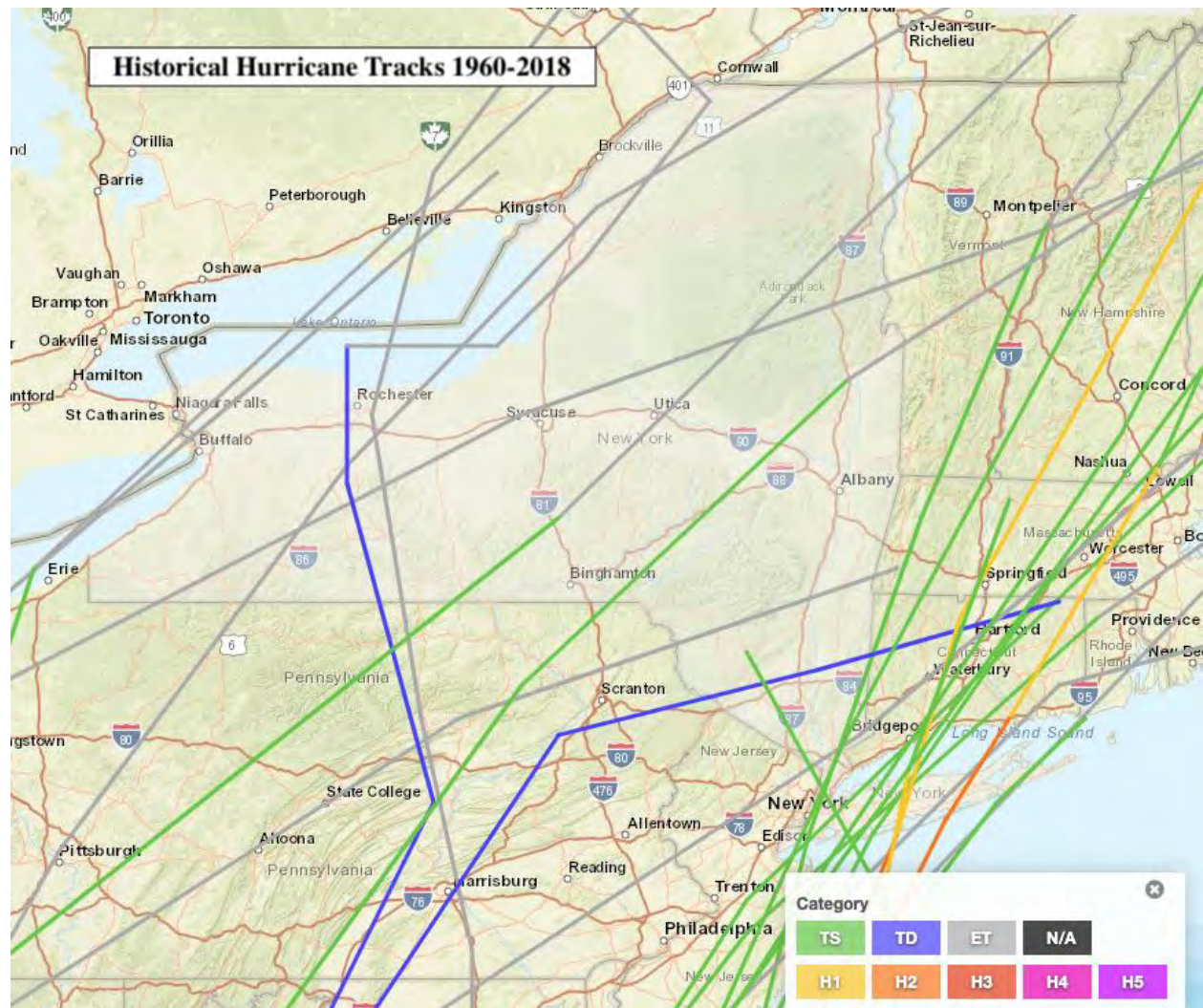
Previous Occurrence:

The following map, created with NOAA’s Historical Hurricane Tracks webtool, visualizes the tracks of tropical storms and hurricanes across New York State.

Clinton County has had two hurricane events that received a presidential disaster declaration.

The effects of Hurricane Irene in New York were the worst from a hurricane since Hurricane Agnes in 1972. Hurricane Irene formed from a tropical wave on August 21, 2011 in the Atlantic Ocean. It moved west-northwestward within an environment of light wind shear and warm waters. Shortly before becoming a hurricane, Irene struck Puerto Rico as a tropical storm. Thereafter, it steadily strengthened to reach peak winds of 120 mph (195 km/h) on August 24. Irene then gradually weakened and made landfall on the Outer Banks of North Carolina with winds of 85 mph (140 km/h) on August 27. It slowly weakened over land and re-emerged into the Atlantic on the following day. On August 28, Irene was downgraded to a tropical storm and made two additional landfalls, one in New Jersey and another in New York. The storm quickly began to lose tropical characteristics and became extratropical in Vermont.

Irene produced heavy damage over much of New York, totaling to \$296 million (2011 USD). The storm is ranked as one of the costliest in the history of New York, after Hurricane Agnes in 1972. Much of the damage occurred due to flooding, both from heavy rainfall in inland areas and storm surge in New York City and on Long Island. Tropical storm force winds left at least 3 million



residents without electricity in New York and Connecticut. Ten fatalities are directly attributed to the hurricane.

In the towns of Jay and Black Brook, Hurricane Irene destroyed a water line that served 650 homes. With a \$1 million HELP loan, a new water line – encased in concrete and buried six feet below the Ausable River – was constructed in January 2012, according to Town of Jay Supervisor. “The HELP loan was desperately needed,” Douglas said, noting that town residents had been relying on a fire hose to deliver water to homes and businesses.

Potential Loss:

The New York State Plan of 2014 indicates losses from hurricane/tropical events. HAZUS is a computer-based program that can determine potential loss to counties for hurricanes. This program uses census data to predict the damages. The first table estimates the damage to physical structures for Clinton County. The table above the map indicates other losses associated with tropical events in Clinton County.

The map shows total annualized losses by county for New York from a HAZUS-MH 2.1@MH probabilistic hurricane hazard run. The annualized loss total is the sum of direct building losses from capital stock and income losses.

HAZUS-MH 2.1 was also used to provide hurricane building and transportation loss estimates for the State of New York. The following table provides building inventory value for the Essex County. The loss estimates results use this default data to generate loss estimates; values are in millions of dollars. The table lists direct economic building losses for a probabilistic 100- year hurricane event; values are represented in thousands of dollars.

Building Inventory Value (millions of dollars)

Residential	Non-Residential	Total
\$2,512	\$659	\$3,171

The 2019 New York State plan also listed annualized loss from a hurricane.

REPORTED LOSS FOR CLINTON COUNTY 1996-2017					
Damage*	Annualized Damage*	Events	Annualized Events	Severe Events	Annualized Severe Events
\$10,500	\$457	2	0	1	0

*value in thousands of dollars

Clinton County has been impacted by hurricanes in the past. These events will continue to occur and impact Clinton County. Floods are the main impact of concern associated with hurricanes and tropical storms.

Potential Cascading Impacts:

The winds and precipitation associated with Hurricanes, Tropical Storms, and Nor'Easters can have a variety of cascading impacts. Flooding events can be associated due to the large amounts of precipitation, and extreme example of this was the flooding in August 2011 that resulted from Tropical Storm Irene. The large amount of precipitation associated with TS Irene results in flash floods in many rives in northeastern New York. These flash floods damaged roads and bridges, as well as private infrastructure. Winds can result in power outages as downed trees and limbs damaged powerlines. Downed trees also have the potential to block roadways and result in traffic impediments.

Probability of future events:

ANNUAL PROBABILITY OF TROPICAL STORM AND HURRICANE STRENGTH WIND SPEEDS FOR CLINTON COUNTY (FEMA, 2000).		
Wind Speed (mph)	Corresponding Saffir-Simpson Hurricane Categories	Annual Probability of Occurrence (%)
45-77	Tropical Storms and Category 1 Hurricanes	91.59
78-118	Category 1 to 2 Hurricanes	8.32
119-138	Category 3 to 4 Hurricanes	0.0766
139-163	Category 4 to 5 Hurricanes	0.0086
164-194	Category 5 Hurricanes	0.00054
195+	Category 5 Hurricanes	0.00001

Although hurricanes and tropical storms can cause flood events consistent with 1 percent and 2 percent level frequency, **their probability of occurrence is measured relative to wind speed.** The previous table shows the probability of winds reaching the strength of tropical storms and hurricane conditions in Clinton County and surrounding areas, based on a statistical sample region of more than 30,000 square miles over a period of 46 years. The county considers this event to be low probability.

- **Low probability (less than once every 50 years)**
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

Clinton County can anticipate being impacted by low level winds from tropical events in the future. The probability of extreme negative impacts from the winds of tropical storms is considered highly unlikely.

4.10 ICE STORMS:

An ice storm is when accumulation of ice is expected during freezing rain conditions. Significant ice can impact trees and utility lines, and result in loss of power and communications. Ice can impact road surfaces and make travel difficult to impossible due to the accumulation of ice. Businesses can be impacted by loss of power and restricted travel.

Sleet is defined as ice pellets comprised of water droplets or refrozen partially melted snowflakes. Sleet generally bounces upon impact with hard surface.

Freezing rain is rain that falls as a liquid then freezes upon contact with ground surface. Both sleet and freezing rain can cause significant impacts to a community.

Extent:

Ice storms can result in the following effects: closing of major or secondary roads, particularly in rural locations, strand motorists, transportation accidents, loss of utility services, and depletion of oil heating supplies. Environmental impacts often include damage to shrubbery and trees due to heavy ice build-up which can break limbs or even bring down large trees. Gradual melting of ice provides excellent groundwater recharge. However, high temperatures following an ice storm can cause rapid surface water runoff and severe flooding.

Location:

The entire area of Clinton County is vulnerable to ice storms.

Previous occurrences:

The National Center for Environmental Information (NCEI) center reported two ice storm events. The following is provided to describe the impact of those two ice storm events.

Northern New York, Vermont, New Hampshire and Canada experience an ice storm of epic proportions on **January 6, 1998**. North Country Public Radio published a 20-year retrospective of the 1998 ice storm in 2018. The following information was obtained from that publication. North Country Public Television also had a thirty-minute show that can be accessed on their website.

The largest ice storm to impact the Clinton County occurred in January of 1998. Five days of freezing rain, which led to: ten thousand utility poles down in the north country of New York State. All power distribution lines disabled. Travel bans were declared and roads impassable. Trees snapped with a sound like gunfire. Five counties in northern New York were almost brought to a standstill. But not quite. Overnight, volunteer shelters took in thousands of people whose homes were cold and dark. The National Guard lent a hand to fire departments, schools, churches and innumerable organizations mounting local relief efforts. Neighbors helped neighbors in a remarkable spontaneous generation of survival strategies, sharing food, fuel and comfort.

Niagara Mohawk technician Dave Seymour said he'd never seen anything like it. Treetops came down in an agonizing succession of sounds: first the break, like a rifle shot, then a shattering as the ice fell, then the percussive thump. Utility poles snapped like pencils. Tangles of branches and wires blocked highways. Plows couldn't get through and roads quickly disappeared under deep, icy ruts. On Thursday, January 8th, 1998, approximately 100,000 Niagara Mohawk customers were without electricity. The utility predicted it would take five or six days to restore power. But it was more than three weeks before the last 100 homes had lights again. Jefferson, St. Lawrence,



(image source: Press-Republican)

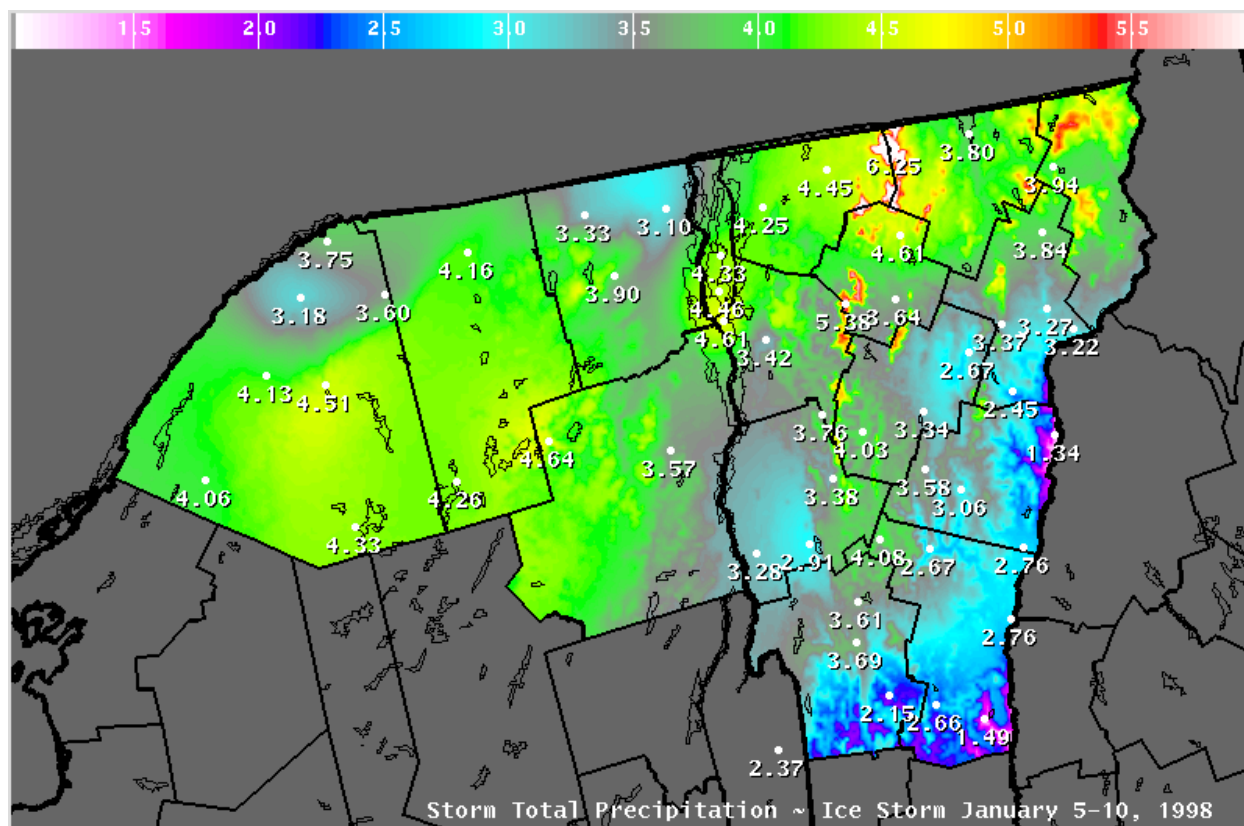
northern Lewis, Franklin, Essex and Clinton counties were affected. States of emergency were declared at all levels of government.

The National Center for Climatic Information (NCEI) database had the following information on the **January 6, 1998** ice storm. A storm system moved from the Tennessee Valley on Wednesday, January 7, and Thursday, January 8, into New England. A cold front across New England and New York associated with an Arctic High-Pressure system across Canada resulted in a flow of low-level cold air into northern New York. Warm moist air riding over this cold air resulted in a major ice storm across northern New York. During Friday afternoon, January 9, a few thunderstorms with gusty winds and small hail moved across the Champlain Valley of northern New York.

ECONOMIC IMPACT OF ICE STORM IN NORTHERN COUNTIES OF NEW YORK STATE				
Disaster	Mitigation	Individual assistance	Public Assistance	Total
January 1998 Ice Storm # 1196	\$622,517.00	\$522,898.00	Federal \$1,965,952.00 State \$314,651.00	\$3,426,018.00

Ice accumulations during this event were generally between 1 and 3 inches with the greatest amounts along the New York and Canadian border regions. The impact on the region was dramatic. The ice accumulations resulted in damage to tens of thousands of trees. Trees and power lines snapped due to the weight of the ice, with 100 thousand reported without power for several days. Damage to the utility companies ran in the millions. The economic impact ranged from stores closed for several days, and banks closed with ATMs not working due to lack of power to the agricultural community being unable to milk cows with loss of income and damage to cows. Automobile and air travel were dramatically impacted with Massena International Airport closed for a period. Many roads and bridges were closed due to ice and fallen trees. There were numerous traffic accidents. Several radio stations were knocked off the air with no power.

There were five indirect deaths due to carbon monoxide poisoning while improperly using generators. One direct death occurred when an individual slipped on accumulated ice and received



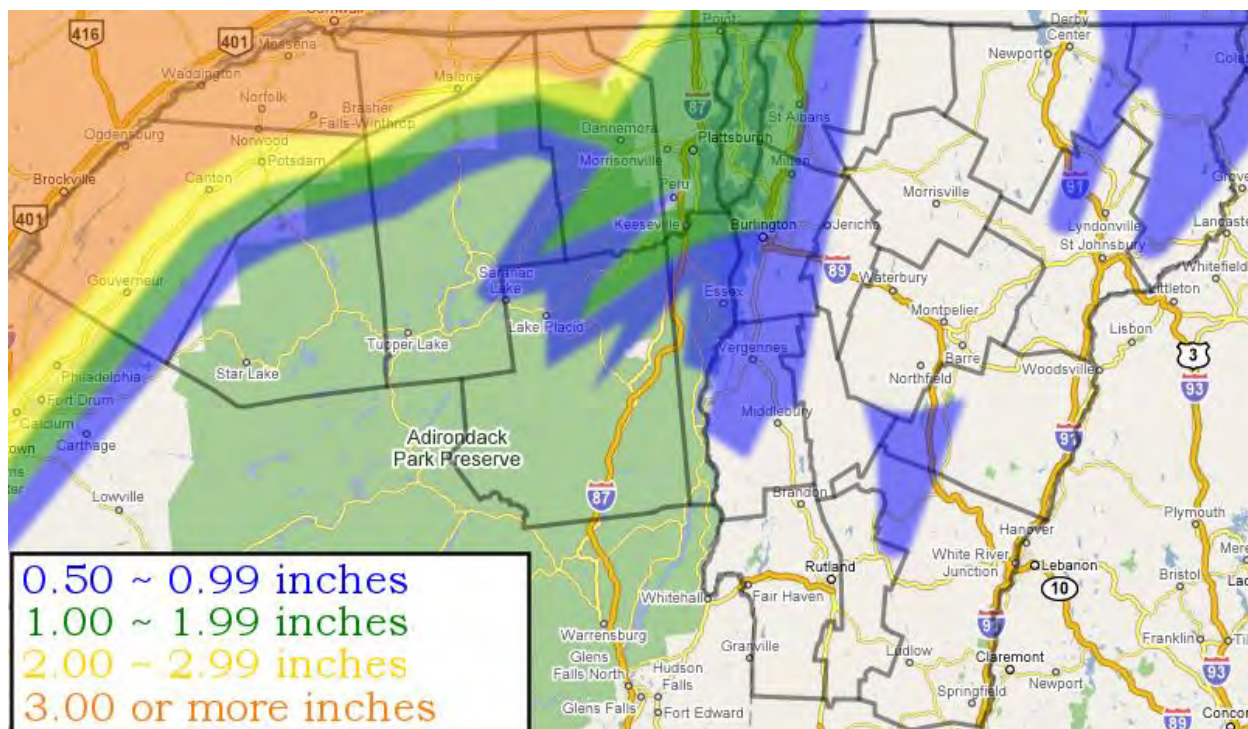
Map showing the precipitation totals for the 1998 ice storm. (image source: weather.gov)

head injuries. The National Guard assisted with cleanup operations after the storm. Falling tree limbs and other debris was a significant hazard during and following the storm.

Damages from the 1998 event were impacted in all areas of the storm. The previous table lists the damages according to FEMA. The National Center of Environmental Information (NCEI) reported \$5,000,000 worth of property damages in Clinton County from the 1998 ice storm.

The **December 20, 2013** ice storm was described in the NCEI database as follows. A stationary collision of air fronts across the Adirondacks of New York and portions of central and northern New England from December 20th through 22nd, with several storms delivering precipitation. A battle between mild and warm moist air south of the boundary, with temperatures in the 50s, overriding a very cold, dense shallow air mass with temperatures in the teens and 20s in New York, but single digits just north across the border into Canada.

The first round of wintry precipitation fell across northern New York, primarily along the Canadian border during Friday afternoon (December 20th). Most of the precipitation fell as freezing rain,



Map showing the total ice accumulation for the 1998 storm. (image source: weather.gov)

approximately 1/4 to 1/3 inches of ice accumulation, along with some sleet. The second round began during the late morning and early afternoon hours of December 21st and peaked during the evening and overnight hours. An additional 1/2 to 1 inch of ice accumulation as well as 1 to 2 inches of sleet occurred in portions of northern New York.

The greatest impact was along the Canadian border, especially the St. Lawrence River Valley, with widespread tree and utility line damage as well as numerous vehicle accidents. Scores of customers were without power from hours or days across the region. This event had a similar area as the Ice Storm of January 1998, but not the severity, as precipitation and ice accumulation was half of the 1998 storm.

Ice jams also developed during this time period as runoff from melting snow and rainfall swelled area rivers. River rises were enough to break up and move ice cover, resulting in scattered ice jams.

Freezing rain accumulated between 1/2 to 3/4 inch, along with some minor accumulations of sleet across eastern Clinton county causing numerous vehicle accidents, tree and utility line damage.

The NCEI reported damages of \$750,000 from this 2013 ice event.

Potential loss:

Based on the information available and past experiences, all municipalities in Clinton County are essentially equally vulnerable to the direct impacts of ice storms. Residents of the mountainous areas of the County may be more susceptible to negative effects, especially when emergency medical assistance is required. In addition, some very rural areas of the County are susceptible to isolation caused by ice storms. Ice storms can cause road closings in the county, especially I-87, along with the county and town roads that become virtually impassable.

Ice storms in the county may cause business losses to stores and factories. There could be property losses and roof damages as a result of ice loading, and from falling tree limbs. During ice storms, Clinton County households become vulnerable to interruptions in utility services for heat and electricity. In the ice storm of 1998, some homes were without electricity for 30 days until electric companies could put the lines back up.

Many residents purchased generators after the ice storm of 1998. This has provided temporary power during ice storms and other events such as the power outage of May 2018. A large percent of county residents have auxiliary heat sources that do not rely on electric power, such as woodstoves. This will provide a heating source in residential homes during ice storms.

While potential loss from ice storm events was not calculated, the past indicates that ice storms that have an economic impact to Clinton County are rare but can negatively impact Clinton County.

REPORTED LOSS FOR CLINTON COUNTY 1996-2017					
Damage*	Annualized Damage*	Events	Annualized Events	Severe Events	Annualized Severe Events
\$265	\$12	2	0	0	0

*value in thousands of dollars

Ice storms will continue to be an issue in Clinton County. Extreme damage from these events can be considered rare or unlikely. Preparedness is often the best method for addressing issues associated with ice storm events.

Potential Cascading Impacts:

Ice Storms have the potential to cause widespread power outages as a result of ice accumulations breaking trees and limbs and damaging powerlines. Travel can be impeded as icy roads conditions present a hazard. During the 1998 ice storm there were also issues with carbon monoxide poisoning as individuals using generators were exposed to exhausted through improper ventilation.

Probability of future events:

Ice storms are a regular occurrence in Clinton County and should be considered likely.

- Low probability (less than once every 50 years)
- Medium probability (once every 8-50 years)
- **High probability (once every 1-7 years)**

Damages similar to the ice storm event of 1998 are highly unlikely to occur on an annual basis, but we can anticipate devastating ice storms sometime in the future. The last ice storms that caused extreme damage and weeks of power loss was in 1998, 21 years ago.

4.11 LAND SUBSIDENCE:

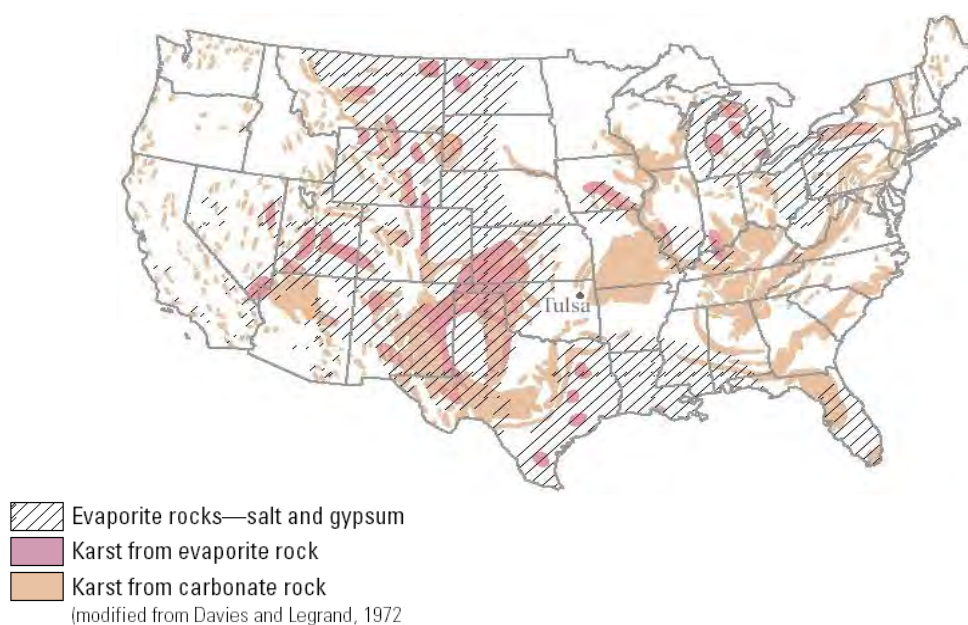
Subsidence is a natural geographic process that commonly occurs in areas with underlying limestone bedrock and other rock types that are soluble in water. Water passing through naturally occurring fractures dissolves these materials leaving underground voids. Eventually, overburden on top of the voids causes collapse which can damage structures with low strain tolerances. This collapse can take place slowly over time or quickly in a single day. Karst topography describes a landscape that contains characteristic structures such as sinkholes, linear depressions, and caves. In addition to natural processes, human activity such as mining, water, natural gas, and oil extraction can cause subsidence and sinkhole formations. (FEMA, 1997)

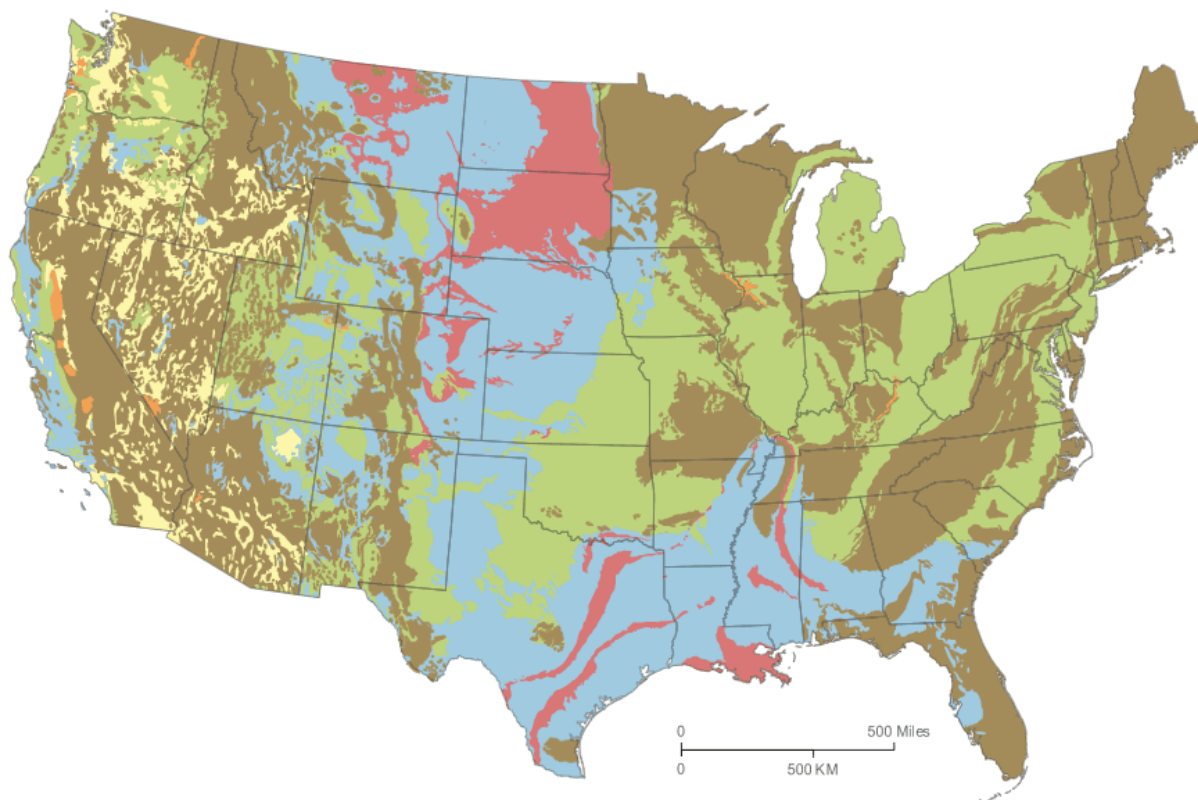
Description:

Subsidence and sinkhole events may occur gradually or abruptly, and events could result in a range of impacts from minor elevation changes to deep or gaping holes in the ground surface. These kinds of events can cause severe damage in populated areas, though gradual events can be addressed before large-scale damage occurs. Subsidence and sinkhole events that are not immediately addressed may cause fractures or the complete collapse of building foundations and roadways.

Location:

The following map is located in the New York State Hazard Mitigation Plan of 2014 and indicates the areas in New York that





© Geology.com

	Over 50 percent of these areas are underlain by soils with abundant clays of high swelling potential.
	Less than 50 percent of these areas are underlain by soils with clays of high swelling potential.
	Over 50 percent of these areas are underlain by soils with abundant clays of slight to moderate swelling potential.
	Less than 50 percent of these areas are underlain by soils with abundant clays of slight to moderate swelling potential.
	These areas are underlain by soils with little to no clays with swelling potential.
	Data insufficient to indicate the clay content or the swelling potential of soils.

are vulnerable to subsidence due to the underlying rock forms that are prone to subsidence incidences.

Clinton County lacks any of the three types of rock formations that lead to subsidence. This type of land subsidence will not be profiled.

Shrinking and swelling soils can also be considered a hazard in certain areas. The following map was located in the 2014 New York State Hazard Mitigation Plan. **The previous map indicates that Clinton County lacks the clay soils that lead to shrinking and swelling of soils. This hazard will not be addressed in this updated plan, due to the fact that there is little potential for shrinking and swelling of soils.**

Mine subsidence:

Clinton County has a rich history in the mining operations industry. The town of Dannemora particularly Lyon Mountain was the site of an extensive mining operation. Lyon Mountain was mined extensively for iron particularly in the 1800s and early 1900s.

Subsidence induced by mine collapse is a different story. Mine collapse and resulting subsidence can be sudden and unpredictable.

Potential loss:

Land subsidence events are considered to be highly unlikely in the future in Clinton County.

Probability of future events:

No documented mine collapses have been found, however the history of mining in the county indicate it could be a potential concern. Issues may occur in the future, but this hazard is considered a low hazard in the updated hazard mitigation plan.

- **Low probability** (less than once every 50 years)
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

4.12 LANDSLIDES:

A landslide is the downward and outward movement of slope-forming soil, rock, and vegetation reacting to the force of gravity. Landslides may be triggered by both natural and human-caused changes in the environment, including heavy rain, rapid snow melt, steepening of slopes due to construction or erosion, earthquakes, and changes in groundwater levels. Mudflows, mudslides, rockfalls, rockslides, and rock topples are all forms of a landslide. Areas that are generally prone to landslide hazards include previous landslide areas, the bases of steep slopes, the bases of drainage channels, developed hillsides, and areas recently burned by forest and brush fires. (Delano & Wilshusen, 2001).

Description:

Landslides are due to both the geology of the land and human-induced factors. Rockfalls, rockslides, debris slide, earth flow, mud flow, and other slope failures usually occur in areas of Clinton County with moderate to steep slopes and high precipitation rates.

The following definitions were obtained from the NYS Hazard Mitigation Plan 2014.

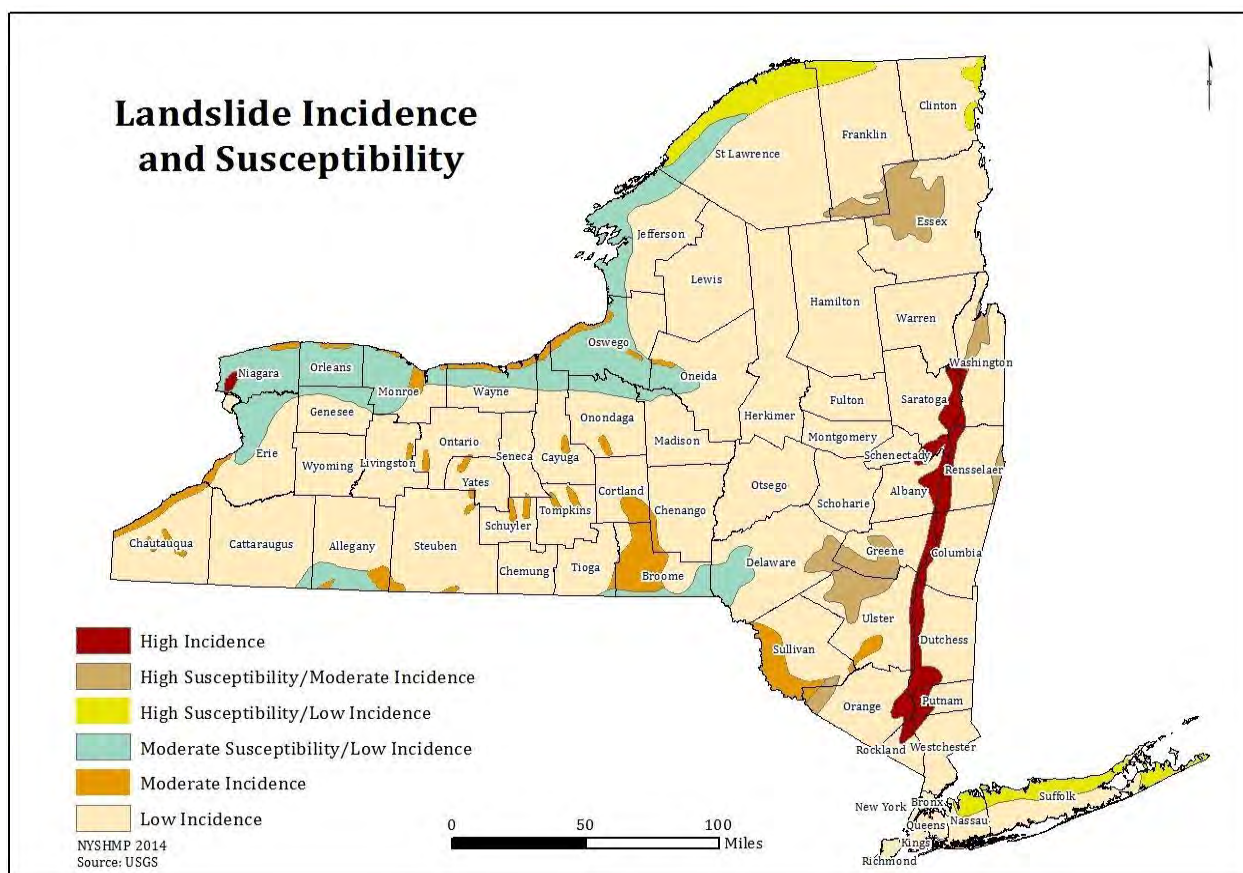
- **Rockfalls** - Blocks of rocks fall away from a bedrock unit without a rotational component.
- **Rock topple** - Blocks of rock fall away from a bedrock unit with a rotational component
- **Rotational slump** - blocks of fine-grained sediment rotate and move down a slope.
- **Translational slide** - sediments move along a flat surface without a rotational component.
- **Earth flow** - fine grained sediments flow downhill and typically form a fan structure.
- **Creep** - Slow moving landslide often only noticed through crooked trees and disturbed structures.
- **Block slide** - A block of rock slides along a slip plane as a unit down the slope.
- **Debris avalanche** - Predominately gravel, cobble, boulder sediments and trees move quickly down the slope.

- **Debris flow** - Coarse sediment flow downhill and spread out over relatively flat areas.

In New York, many slope failures are associated with precipitation events – periods of sustained above-average precipitation, specific rainstorms, or snowmelt events. Areas experiencing erosion, decline in vegetative cover, and earthquakes are also susceptible to landslides. Human activities that may induce slope failure include altering the natural slope gradient, increasing soil water content, and removing vegetation from steep slopes.

Location:

The US Geologic Survey (USGS) has identified and defined the overall landslide susceptibility of all areas in Clinton County. As seen in the Figure below, the majority of Clinton County falls into high susceptibility low incidence to landslides. This map shows the overall susceptibility to this hazard based on climate factors, whereas areas of higher slopes that have a higher susceptibility



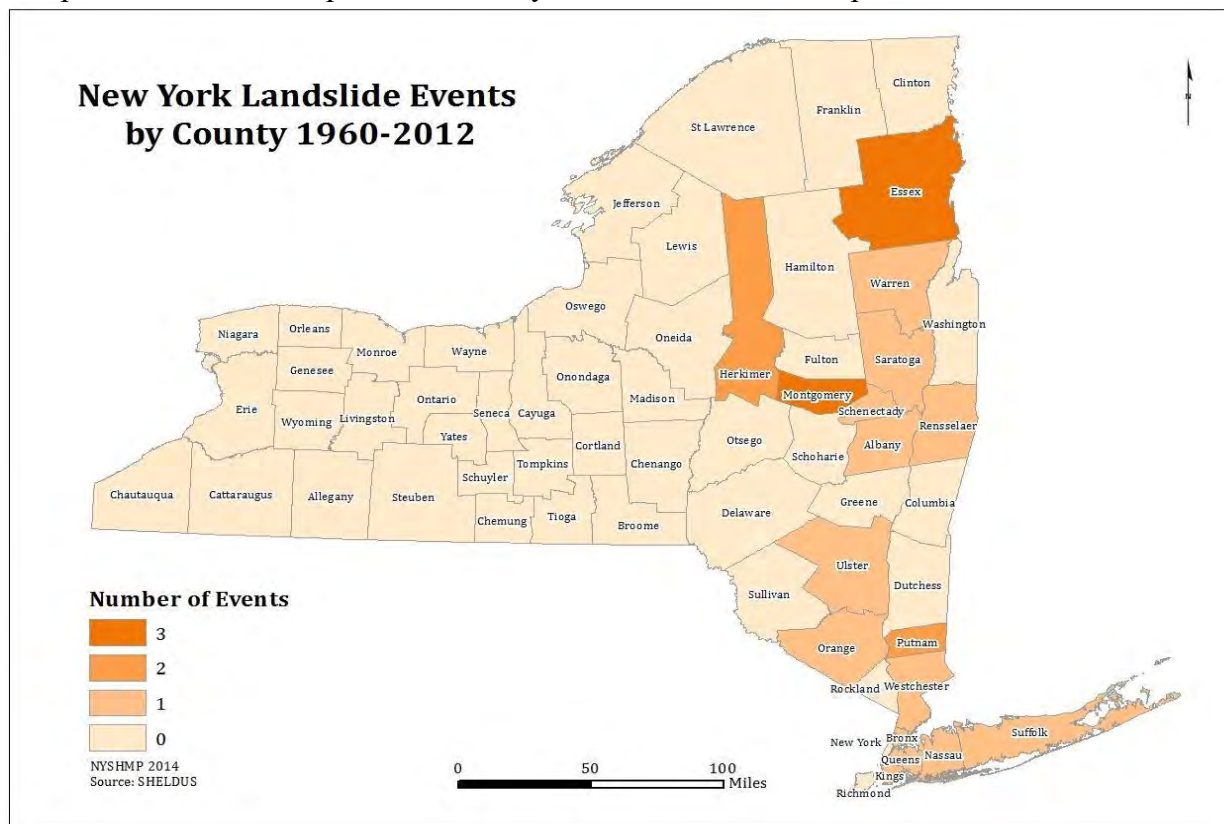
are highly localized and are not shown on this scale map. This area is along the shoreline of Lake Champlain where slides occur.

Previous occurrences:

Clinton County has a high susceptibility and low incidence for landslides. This means that landslides can and do occur, but are relatively minor to impacting property in the county.

Clinton county has experienced landslides. North Hudson has an area along the Schroon River that is susceptible to earth flows or landslides. There have been several meetings with the Army Corp of Engineers and DEC staff to discuss mitigation for this slide area. The concern is that a total failure of the steep fine-grained sand bank would deposit a large amount of sediment in the river, potential blocking or altering the river channel.

Roads are also susceptible to rock falls and slope failures. Auger Lake Road in Chesterfield is protected by gabion baskets filled with stones. These protective measures are continually being compromised as the slope above slowly erodes. Keene has experienced a landslide that has



compromised one residential structure. Wilmington had one mud flow event in 2004 due to heavy rains.

Additional areas of the County will be exposed to landslides due to steep slopes, and a variety of soil types that lead to slope failure.

Potential Loss:

According to MitigateNY the 2019 New York State Hazard Mitigation website, there have been no losses reported for Clinton County between 1996 and 2017. Clinton County has seen minor historic impact from previous events, mainly due to the most vulnerable areas in Clinton having few if any structures.

Probability of future events:

Clinton County considered future landslide events to be likely, but the areas where they occur are in the back-country areas that have no structures. Roads that can be prone to failure due to slides are protected to reduce the chance of slides impacting these roads.

- **Low probability (less than once every 50 years)**
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

4.13 SEVERE WINTER STORMS:

Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. A winter storm can range from a moderate snowfall or ice event over a period of a few hours, to blizzard conditions with wind-driven snow that lasts for several days. Many winter storms are accompanied by low temperatures and heavy and/or blowing snow, which can severely impair visibility and disrupt transportation.

Blizzards are characterized by low temperatures, sustained wind gusts of 35 mph, falling or blowing snow that reduces visibility to less than ¼ miles for an extended time of three or more hours. (NWS, 2009).

Description:

Winter storms consist of cold temperatures, heavy snow or ice, and sometimes strong winds. They begin as low-pressure systems that move through New York either following the jet stream or developing as extra-tropical cyclonic weather systems over the Atlantic Ocean called nor'easters. Due to their regular occurrence, these storms are considered hazards only when they result in damage to specific structures or cause disruption to traffic, communications, electric power, or other utilities. A winter storm can adversely affect roadways, utilities, business activities, and can cause frostbite or loss of life.

Extent:

Severe winter storms can result in the closing of major or secondary roads, particularly in rural locations, stranded motorists, transportation accidents, loss of utility services, and depletion of oil heating supplies. Environmental impacts often include damage to shrubbery and trees due to heavy snow loading, ice build-up



A front-end loader being used after a blizzard in March 2017 completely blocked a road in the Town of Champlain. (image source: Press Republican)

NORTHEAST SNOWFALL IMPACT SCALE			
Category	Description	NESIS Range	Definition
1	Notable	1.0 – 2.49	These storms are notable for their large areas of 4-inch accumulations and small areas of 10-inch snowfall.
2	Significant	2.5 – 3.99	Includes storms that produce significant areas of greater than 10-inch snows while some include small areas of 20-inch snowfalls. A few cases may even include relatively small areas of very heavy snowfall accumulations (greater than 20 inches).
3	Major	4.0 – 5.99	This category encompasses the typical major Northeast snowstorm, with large areas of 10-inch snows (generally between 50 and 150 × 103 mi ² – roughly one to three times the size of New York State with significant areas of 20-
4	Crippling	6.0 – 9.99	These storms consist of some of the most widespread, heavy snows of the sample and can be best described as crippling to the northeast U.S, with the impact to transportation and the economy felt throughout the United States. These storms encompass huge areas of 10-inch snowfalls, and each case is marked by large areas of 20-
5	Extreme	10+	The storms represent those with the most extreme snowfall distributions, blanketing large areas and populations with snowfalls greater than 10, 20, and 30 inches. These are the only storms in which the 10-inch accumulations exceed 200 × 103 mi ² and affect more than 60 million people.

Source: Kocin and Uccellini, 2004

and/or high winds which can break limbs or even bring down large trees. Gradual melting of snow and ice provides excellent groundwater recharge. However, high temperatures following a heavy snowfall can cause rapid surface water runoff and severe flooding.

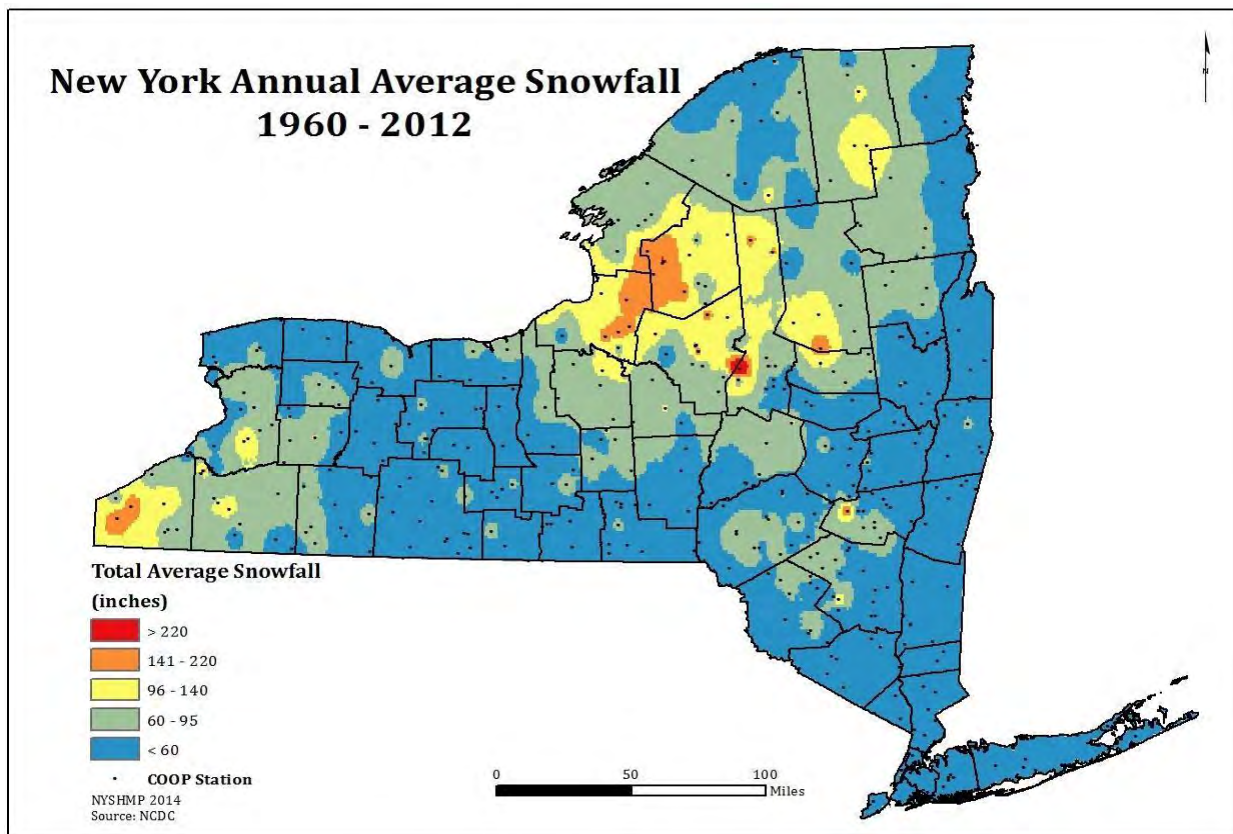
The Northeast Snowfall Impact Scale describes snow events in the northeast and provides a descriptive range regarding the snow totals.

Location:

The entire area of Clinton County is vulnerable to severe winter storms. Areas of the southwestern part of the county such as Dannemora, Lyon Mountain and Black Brook have a higher degree of vulnerability due to the topography of the mountain areas. The eastern parts of the county have a lower vulnerability due to lower



Winter driving conditions often cause cars to slide off the road. Plattsburgh Municipal Lighting Department personnel removing a struck light pole in the middle of a snow event in March 2014. (Press Republican)



source: 2014 New York State Hazard Mitigation Plan.

elevation and effect of Lake Champlin tempering the climate near the lake. Ice storms are addressed in a separate hazard section.

Previous occurrences:

The National Center of Environmental Information was used to obtain historic number of winter storm events. This database had numerous categories of winter events and all categories have been displayed in the following table. Between 1996 and 2017 there were 227 days with winter events that caused a total of \$3.342M of property damage and \$125,000 of crop damage. Though there are reports of emergency calls to houses for potential carbon monoxide poisoning in some of the reports, no injuries or deaths were reported in the NCEI database during this timeframe. Ice storms are reported in the hazard section dedicated to them.

NCEI DATA ON WINTER EVENTS IN CLINTON COUNTY (1960-2020)	
Event Type	Number of Days with Event
Blizzard	2
Cold/ Wind Chill	12
Extreme Cold/ Wind Chill	5
Frost/ Freeze	5
Heavy Snow	7
Lake-Effect Snow	1
Winter Storm	98
Winter Weather	121

The following major winter events impacted Clinton County.

Blizzard 3/14/ 2017 A major Nor'easter developed off the North Carolina/Virginia coast during the early morning hours of March 14th and intensified as it moved north-northeast across southeast New England during the night into central Main by the morning of March 15th.

Snow developed across northern New York by mid-morning on the 14th and intensified to at least 1 to 3 inches per hour for several hours during the late afternoon and early overnight hours before gradually diminishing on the 15th. There were numerous sites that witnessed 4 to 5 inches per hour

snowfall rates for more than one hour. In addition, blizzard to near blizzard conditions developed around the time of the heaviest snowfall and lasted for 3-4 hours.

Total snowfall across northern New York was 15 to 40 inches with Clinton, Essex and Franklin counties witnessing a few reports of greater than 3 feet. Specific amounts include: 39 inches in Altona, 30 inches in Chazy, 26 inches in Plattsburgh, 23 inches in Peru, and 20 inches in Morrisonville.

States of Emergency were declared for all four northern counties with schools, businesses, and local government offices closed. The storm was estimated to have caused \$50,000 in property damages in Clinton County. No injuries or deaths were reported in connection with this event.

Winter Storm 2/06/2020 A cold front straddled across NY and VT during February 6th and 7th. A weak system moved across the north country during the early morning hours of February 6th with a snowfall of 1-3". During the day and evening hours intermittent snow and freezing rain showers still allowed for some slick travel ahead of the more vigorous system.

During the late evening and overnight hours of the 6th into the 7th, steadier snowfall arrived across the St. Lawrence Valley eventually moving into the rest of Northern NY. Precipitation in the Adirondacks and Champlain Valley was freezing rain and sleet early before changing to heavy snowfall by mid-morning on the 7th. Snowfall rates were of 1-2" + per hour through the early afternoon, with a total of 8- 18" across the region. Two day snowfall totals for this storm were 10-20" with icing under ¼" across the Champlain Valley.

Potential loss:

The New York State Hazard Mitigation Plan of 2019 reports the losses for Clinton County between 1996 and 2017, these figures are listed in the table below. Losses would be minor to structures as building codes consider snow loads on structures. A large economic impact is the man hours needed to clear and plow roads, and the placement of salt and or sand on roadways.

REPORTED LOSS FOR CLINTON COUNTY 1996-2017					
Damage*	Annualized Damage*	Events	Annualized Events	Severe Events	Annualized Severe Events
\$15,500	\$675	172	6	2	0

*value in thousands of dollars

Clinton County will continue to be impacted by severe winter events such as blizzards and other snow events. Residents have assisted each other in the past when these events occur. We can anticipate that in the future, residents will continue this tradition of assisting others during extreme winter events.

Potential Cascading Impacts:

Severe winter storms have a variety of impacts on public and private infrastructure. The most common impact upon structures are roof damages. Severe winter storms lead to conditions that severely limit or prevent travel on roadways, requiring routine plowing to allow for safe passage. Trees also have the potential to be weighed down by large amounts of snow and can break resulting in power outages obstructed roadways or damages to buildings. However, with proper maintenance of trees and limbs, as well as the routine use of equipment the impacts of severe winter storms can be minimized.

Probability of future events:

Clinton County is located in the northeastern corner of New York State. The county is routinely and will continue to be impacted by severe winter storm events. Clinton County considers these events to have high probability of occurring in the future. The high probability is due to the high northern latitude, previous occurrences and the fact that snow events can and do occur in a majority of the year. The possibility of a snow event begins in October and lasts until April, sometimes stretching into May. The most common months for severe events are December-March.

- Low probability (less than once every 50 years)
- Medium probability (once every 8-50 years)
- **High probability** (once every 1-7 years)

The Towns, Villages and City in Clinton County consider winter storms as a normal predicted event and have the equipment and manpower to manage these snow events.

4.14 TRANSPORTATION- RAIL ACCIDENTS:

Rail accidents can result from human cause or mechanical equipment failure. It is unlikely that small accidents would significantly impact the larger county area but can impact the town where the event occurred. However, certain accidents could have secondary county or regional impacts such as hazardous material release or disruption in critical supply/access routes, especially if vital transportation corridors or junctions are present (USDOT, 2009). This hazard should be carefully evaluated during emergency planning since it is a key factor in timely disaster or hazard response, especially in areas with high population density.

Extent:

A report titled *Danger on the Tracks: Oil by Rail's Threat to Lake Champlain and the Adirondack Region* was referenced for most of the information in this section.

Significant rail accidents can result in death or serious injury, as well as extensive property loss or damage. Railway accidents have the potential to result in hazardous materials release also, if the accident involves a vehicle carrying hazardous materials. A worst-case scenario for transportation accidents in Clinton County would be a rail accident involving trains carrying oil from Canada.

The oil being shipped by rail through the region is Bakken crude oil, a light unrefined oil extracted by hydraulic fracturing in the North Dakota region. Bakken crude is an exceptionally volatile substance more prone to explosion than other types of crude oil. At the recent peak of oil-by-rail shipments in 2014, millions of gallons of Bakken crude oil were being transported along Lake Champlain. Low oil prices have recently made such levels of shipment uneconomical for the moment, but as gas prices creep back up, the region could see increased levels of traffic again, but even current levels of shipping present a risk. The rail infrastructure used in shipping is aging in several places. The tracks run through dozens of New York communities and along Lake Champlain for nearly 100 miles, within feet of the shoreline in many areas. Bridges that cross ravines and rivers that flow into the lake are exceptionally old, with most of the retrofits occurring in the early 1900s.

The extreme threat posed from oil-by-rail to communities in the region is embodied by the Lac-Mégantic tragedy. On July 6, 2013, an unsecured train in Lac-Mégantic, Quebec rolled down a grade, derailed, and released 1.6 million gallons of Bakken crude from its cars. The Bakken crude,

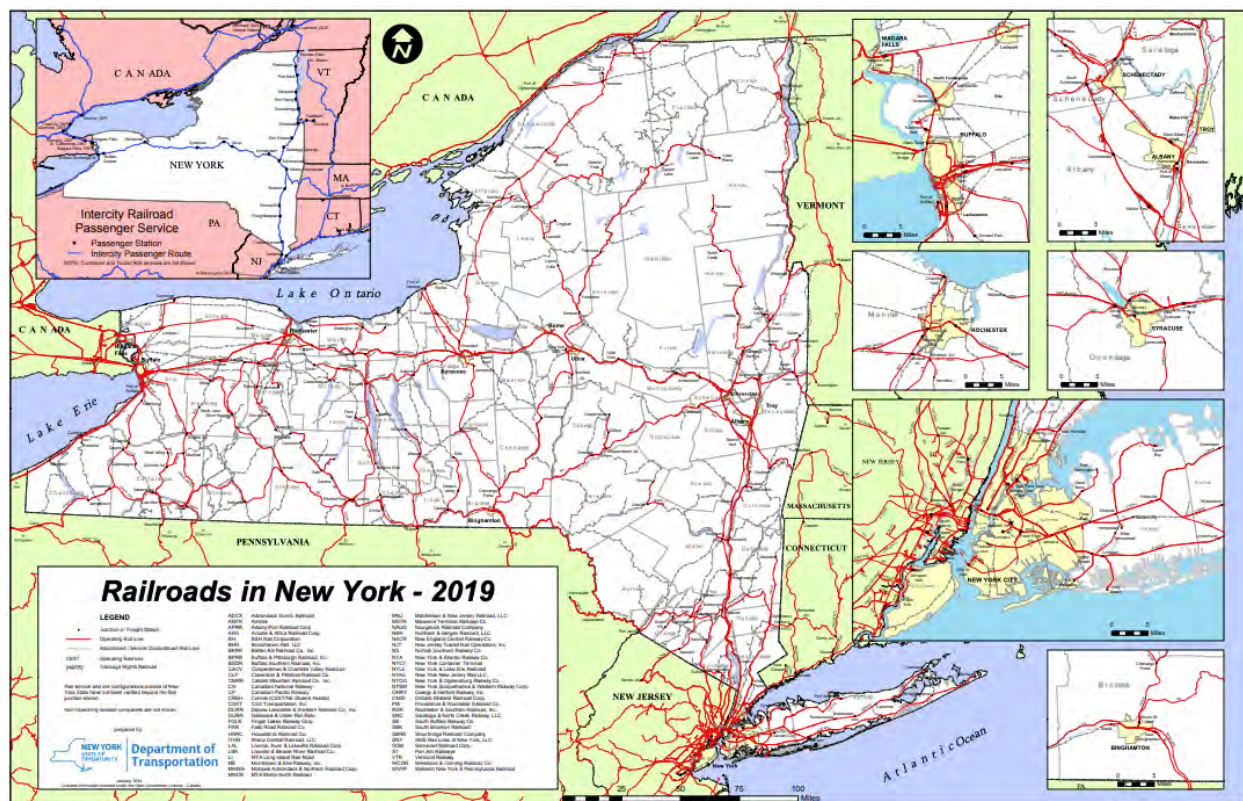
much more volatile than conventional crude oil, caught fire and fueled explosions that left 47 dead, destroyed a substantial part of the town, and contaminated a portion of the nearby lake and river.

In April 2016, the National Wildlife Federation, the Lake Champlain Committee, and the Adirondack Council announced the delivery of a letter to the New York and Vermont Congressional delegations calling for a “federal legislatively imposed ban on the transport of oil along Lake Champlain and the Hudson River.” The letter had signers from more than 80 New York and Vermont environmental, business, recreational, and other organizations, in addition to former members of state agencies, current and former state legislators, and both the Plattsburgh and Burlington City Councils. Town and city resolutions have also been passed in key communities calling for varying levels of action to protect communities against the risks of oil-by-rail, including the Towns of Plattsburgh, Champlain, and Saranac, as well as Clinton, Essex, and Ulster Counties.

In an attempt to put the cost of an oil spill on the polluter, the New York state legislature has, since 2014, proposed the New York Surety Bill 19. The bill would require that major facilities, vessels, and railroad companies demonstrate that they have the financial security to cover the cost of an oil spill. This bill has consistently passed the Assembly but has never passed the Senate. It is important that this bill pass in order to put the financial risk of an oil spill on those responsible for the spill.

Rail shipments from Canada to the East Coast have ranged from the peak of 3,128,000 barrels in May 2014, to a low of 22,000 thousand barrels in July 2017; subsequently an uptick started in August 2017 that jumped to 1,963,000 barrels in December 2017 before declining back to 881,000 thousand barrels in March 2018

The New York Department of Transportation, along with the Federal Railroad Administration, have been conducting inspections of New York track, including CSX mainline track, and crude oil tank cars since late 2014. There have been at least twelve inspections conducted since this time. Each inspection includes the number of critical defects that must be addressed immediately, and non-critical defects that must be fixed within 30 days found on the different sections of track. The inspections focus on track, track hardware, and tank car mechanical safety equipment, including wheels, brakes, and couplers. A recent track inspection, conducted in February 2017, found four



dot.ny.gov/divisions/operating/opdm/passenger-rail/passenger-rail-repository/2019%20NYS%20Rail%20Map.pdf

critical defects and forty-two non-critical defects. While track inspections are important, the number of defects being found highlights the poor condition of state’s railways.

Location:

Six towns and villages, as well as one city in Clinton County are vulnerable to rail accidents, due to the Amtrak line being in these towns. The seven jurisdictions are as follows: The Village of Rouses Point; The Towns of Chazy, West Chazy, Beekmantown, Peru, and Plattsburgh; the City of Plattsburgh. The rail line runs mainly near Lake Champlain. This transportation network brings visitors into the region.

Previous occurrences:

According to the Pipeline and Hazardous Materials Safety Administration (PHMSA) database, there have been 11 incidents nationwide involving a tank rail car carrying petroleum between January 2016 and October 2017.

An incident is defined by PHMSA as the unintentional release of hazardous material; structural damage to cargo tank; or when a person is killed or injured, the public is evacuated for over an hour, or a major transportation artery or facility is shut down for more than an hour during transportation (including loading, unloading and temporary storage). Of these 11 incidents, nine resulted in a spill. In addition, two of these incidents resulted in fire, and what PHMSA deems environmental damage. One resulted in a public evacuation. The total response cost for the incidents was \$867,300 and the remediation cost for the incidents totaled \$7,800,000.

There are two historic and one recent derailment in Clinton County.

In 1903 in the town of Dannemora a 13-car train derailed spilling fuel oil along the train tracks.

In August of 1903 in the Town of Champlain a train crossing a partially opened drawbridge spanning the Great Chazy River plunged into the river. Eight of the twelve cars were filled with livestock most of which died as a result. The train's engineer was seriously injured, and the fireman died.

Recently, on March 24, 2006 a passenger train derailed shortly after departing the Rouses Point station. There were no injuries reported however, passengers were bussed to their destination, Albany, NY.

Training:

Intentions to develop New York geographic response plans were announced by the governor in 2015. These geographic response plans, in which DEC would be the lead agency, would be location-specific guides to oil spill response for the 21 counties affected by crude oil transport. These are not easily accessible to the public and it is unclear if they have been implemented. While there have been some efforts to prepare towns for an oil train disaster, like an oil spill response training session in Plattsburgh in 2016, and the several emergency response trailers dispatched along the oil-by-rail corridor by the state, these actions do not remove the threat of oil-by-rail, though they can better prepare a community to respond to it.

Ironically, this protective action could have long-term consequences for water-quality in the communities along the railroad tracks inside the Adirondack Park. Among other emergency response items inside these trailers is a supply of firefighting foam. This foam can be spread on

the ground to suppress explosions during railroad accidents, by covering pools of oil that gather on the ground around the accident site. Local officials agreed that distribution of the foam would boost public safety in the event of a spill and fire. However, this foam also contains a class of chemicals called Per- and Polyfluoroalkyl Substances (PFAS) that are known to the U.S. EPA to be a health hazard at very low levels when found in drinking water. Those health hazards include cancer. The EPA is developing a national action plan for the identification and remediation of PFAS contamination.

Rail accidents will continue to be a hazard in the future. Preparedness and response actions will reduce the effects of this hazards. State and Federal agencies must continue to regulate the rail industry to ensure the safety of residents and property in Clinton County.

Potential loss:

Potential loss was not determined due to a lack of information concerning number of structures near the rail lines that may be impacted by a rail accident.

Probability of future events:

Rail events are considered by Clinton County to be an event that is highly unlikely to occur but would have the potential to significantly impact life and property if one should occur in the wrong location. There is a rail line that runs through the eastern part of the county along Lake Champlain that carries both passenger and freight trains on a regular basis through the county.

- **Low probability** (less than once every 50 years)
- **Medium probability** (once every 8-50 years)
- **High probability** (once every 1-7 years)

4.15 WILDFIRES:

A wildfire is a raging, uncontrolled fire that spreads rapidly through vegetative fuels exposing and possibly consuming structures. Wildfires often being unnoticed and can occur at any time of year, but most occur during long, dry hot spells. Any small fire in a wooded area, if not quickly detected and suppressed can get out of control. Most wildfires are caused by human carelessness, negligence, and ignorance. However, some are precipitated by lightning strikes and in rare instances spontaneous combustion. Wildfires in New York can occur in fields, grass, brush, and forests. 98% of wildfires in New York are a direct result of people. (DEC, 2016)

Description:

The DEC uses the following terms to describe wildfires and related events:

- **Wildfires** are unplanned or unwanted fires burning vegetation in areas where development is minimal or non-existent. They may also be referred to as forest fires, brush fires, grass fires, range fires, ground fires or crown fires.
- **Wildland Fires** include wildfires and those fires intentionally set or allowed to burn according to a recognized land management plan and are commonly referred to as prescribed fires or controlled burns.
- **Wildland-Urban Interface Fires** are wildfires that burn or threaten to burn buildings and other structures.
- **Wildfire Mitigation** is activity designed to reduce or eliminate risks of wildfire to people or property by reducing the actual or potential effects, or consequences of a wildfire.
- **Wildland Fire Management** is activity related to wildfire mitigation and the use of prescribed fire to accomplish ecological goals.

Extent:

Wildfires take place in less developed or completely undeveloped areas, spreading rapidly through vegetative fuels. They can occur any time of the year, but mostly occur during long, dry, hot spells. Wildfires in New York and Clinton County can occur in open fields, grass, dense brush, and forests.

Location:

New York State is 30.9 million acres in size with 18.9 million acres of non-federal forested lands. Many areas in New York, particularly those that are heavily forested or contain large tracts of



A state forest ranger fights the Altona Flat Rock State Forest wildfire in July 2018. (source: Press-Republican)

brush and shrubs, are prone to fires. Several towns have large areas of land in the Adirondack preserve and are owned and managed by the State of New York.

A majority of Clinton County land cover is forested, and State owned, the potential geographic extent of wildfires is quite large. Under dry conditions or droughts, wildfires have the potential to burn forests. The greatest potential for wildfires is in the spring months of March, April, and May, and the autumn months of October and November; 83% of all wildfires occur in these two time periods. In the spring, bare trees allow sunlight to reach the forest floor, drying fallen leaves and other ground debris. In the fall, dried leaves are also fuel for fires.

Previous Occurrences:

Altona Fire of 2018:

Clinton County experienced a large wildfire in the summer of 2018. A wildfire raged over 328 acres in Altona Flat Rock, with a massive effort underway to stem its tide. The blaze was still miles

away from any structure on Friday, and no evacuations were in the works, said Eric Day, director of Clinton County Emergency Services. At least 20 fire departments are involved in the continuing efforts to control the blaze, which started out as a 60-acre fire when it was first reported to Clinton

County Dispatch at about 1 p.m. Thursday. About 120 people are fighting the fire from multiple

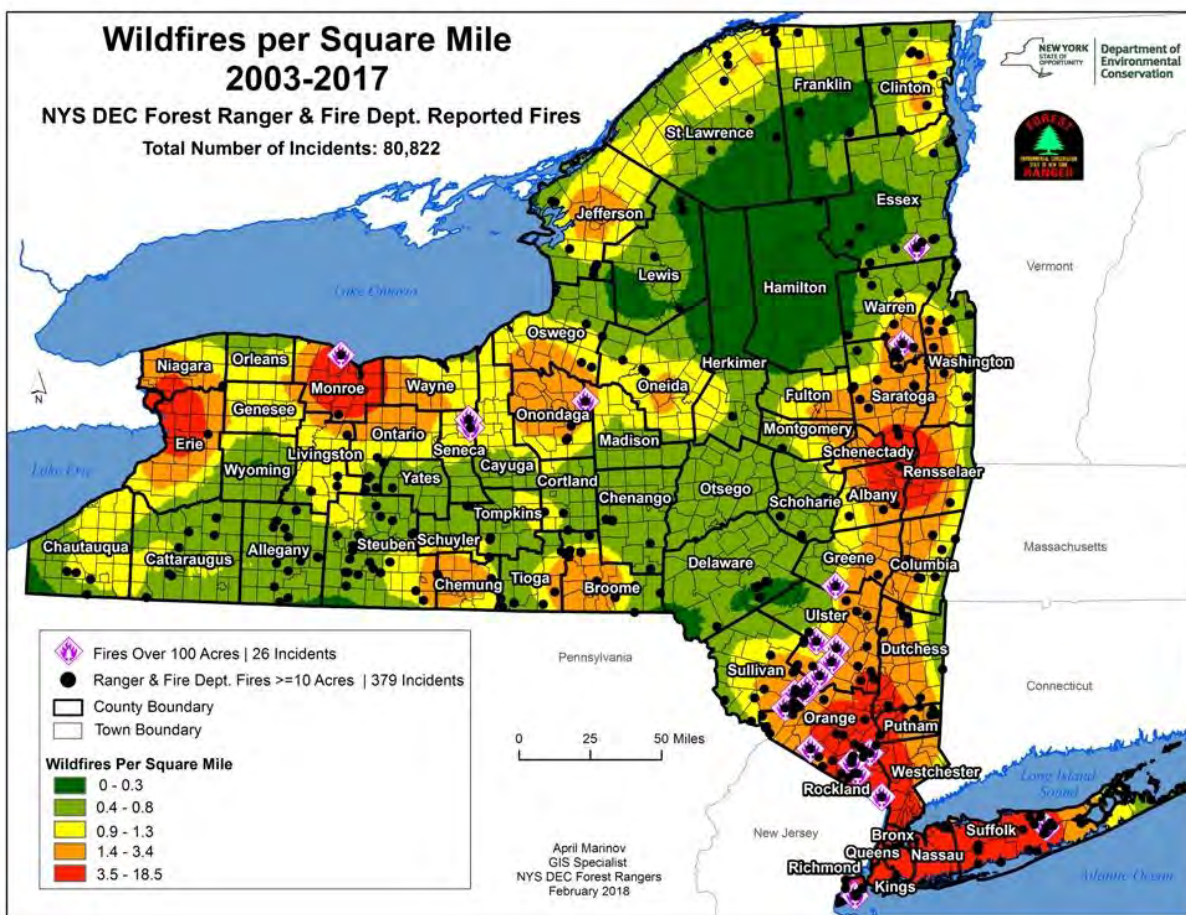
directions, including the Altona Fire Department and 18 other departments from Clinton County, northern Vermont and southern Quebec. Three other fire departments are covering the Altona Fire Station. About 10 State Police officers, 25 Department of Environmental Conservation forest rangers and inmate and town crews are also pitching in, along with two Huey helicopters equipped with 300-gallon buckets to drop water on the blaze. Gov. Andrew Cuomo sent eight National Guard soldiers and two UH-60 Blackhawk helicopters, which are on standby, each equipped with a 660-gallon Bambi bucket. "Fire department crews, working in lockstep with forest rangers, worked fire lines with hand tools and chainsaws and also with brush trucks hauling water into the woods to wet the fire line," Day said. Bulldozers from the towns of Altona and Mooers and Todd Deyo Construction contributed to the effort. Inmate hand crews were also what Day described as "a full-court press to work the fire. "Water was being brought in from nearby Dead Sea and Miner Lake. The Salvation Army was delivering snacks and water to the crews

WILDLAND FIRES & ACRES BURNED IN NEW YORK STATE			
Year	Wildland Fires	Acres Burned	Average Acres Burned Per Fire
1996	79	211	2.7
1997	309	1,218	3.9
1998	346	2,569	7.4
1999	629	5,557	9.3
2000	134	451	3.4
2001	460	4,545	9.9
2002	324	2,062	6.4
2003	106	594	5.6
2004	73	431	5.9
2005	208	669	3.2
2006	231	2,323	10.1
2007	211	855	4.1
2008	157	3,634	23.1
2009	150	1,313	8.8
2010	155	1,413	9.1
2011	47	232	4.9
2012	177	146	12.1
2013	133	1,059	8
2014	131	836	6.4
2015	175	3,924	22.4
2016	185	4,191	22.7
2017	55	191	3.5
2018	105	845	8
TOTALS	4,580	39,269	8.73

Source: dec.ny.gov/lands/42438.html

Saranac 05/21/2020. Several local fire crews were utilized the evening of the 21st to fight a widespread wildfire in Saranac. Crews from Peru, AuSable Forks, Plattsburgh, Morrisonville and Cadyville responded, as well as others with a total of approximately 50 firefighters involved in trying to contain the blaze. The firefighters were unable to contain the blaze, and instead established a perimeter around the area, and returned in the morning to fight the blaze. The dry conditions have been stated to contribute to the risk of fires despite the burn ban being lifted in the region.

The Forest Rangers division of the DEC is the state’s lead agency for the control and prevention of wildfires. In 2017, Forest Rangers reported 55 wildfires, which burned a total of 191 acres, the lowest total acres in Ranger history. During the last 25 years, Rangers responded to an average of 209 wildfires per year, which burned an average of 2,001 acres per year. More than 1,700 volunteer and career fire departments are the primary first responders to wildfires throughout the state. Combined, fire departments and Rangers responded to 1,401 wildfires that burned a total of 474



acres in 2017. The DEC reports from 1996-2018 is there were 4,580 fires, burning a total of 39,269 acres, with an average of 8.73 acres burned per fire, reports for each year in the table above.

New York State is a “home-rule” state where local emergency services have primary authority for any and all emergencies. In the case of wildfire, the local fire department has the primary responsibility (incident command) for the control and containment of wildfires in their jurisdiction.

The Forest Ranger Division has a statutory requirement to provide a forest fire protection system for 657 of the 932 townships throughout New York. This area excludes cities and villages and covers 23.5 million acres of land including state-owned lands outside the 657 towns.

Historically, local fire companies have mutual aid agreements to assist other jurisdictions in the suppression of wildland fires. DEC staff also provide invaluable resources for fire suppression in the Adirondacks and Essex County.

Potential Cascading Impacts:

Related hazards to wildfires often include damages to ecosystems and detriments to nearby residents with breathing complications. The frequency of wildfire in Clinton County does not often lead to a multitude of impacts on local communities as they often occur in areas that are remote and not heavily populated.

Potential Loss:

The potential for wildfires to affect structures is minimal due to the most vulnerable areas being forest areas with no structures. According to the New York State Hazard Mitigation website, MitigateNY there were no reported losses in Clinton County between 1996 and 2017. Areas near these resources may see limited impact to structures, but fire response would diminish the vulnerability due to their ability to extinguish wildland fires.

Probability of future events:

Wildfires will continue to occur in Clinton County as large areas of land are forest resources, as well as particularly vulnerable areas such as the Altona Flat Rock Pine Barrens. These fires will be extinguished by local fire departments with assistance from the State through the DEC. These

resources will continue to respond to wildland fires in Clinton County and elsewhere in the Adirondack Park.

- **Low probability (less than once every 50 years)**
- Medium probability (once every 8-50 years)
- High probability (once every 1-7 years)

These wildfire events have a medium probability of occurring in Clinton County, but will have minor impacts to the built environment of Clinton County.

4.16 WIND AND HIGH WIND EVENTS

A wind storm can occur during severe thunderstorms, winter storms, coastal storms, or tornadoes. Straight-line winds, such as downburst, have the potential to cause wind gusts that exceed 100 mph. A tornado is a violent windstorm characterized by a twisting, funnel shaped cloud extending to the ground. Waterspouts are weak tornadoes that form over warm water and are relatively uncommon in New York. Each year, an average of over 800 tornadoes are reported nationwide, resulting in an average of 80 deaths and 1,500 injuries. (NOAA, 2002)

Description:

Wind, in general, is caused by the interaction of different temperatures of air masses. Thunderstorms, for example, are caused by the interaction of a cold front colliding with a warm front, with the cold air sinking under the warm mass of air. This explains the winds and cooling off of temperatures commonly seen immediately prior to a thunderstorm.

Tornadoes are most often generated by thunderstorm activity (but sometimes result from hurricanes or tropical storms) when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The damage caused by a tornado is a result of high wind velocities and wind-blown debris. According to the National Weather Service, tornado wind speeds can range between 30 to more than 300 miles per hour. They are more likely to occur during the spring and early summer months of March through June and are most likely to form in the late afternoon and early evening. Most tornadoes are a few dozen yards wide and touchdown briefly, but even small, short-lived tornadoes can inflict tremendous damage. Destruction ranges from minor to catastrophic depending on the intensity, size, and duration of the storm. Structures made of light materials such as mobile homes are most susceptible to damage.

The following information is provided to further define and describe wind events.

- Tornado- local atmospheric storm, generally of short duration, formed by winds rotating at very high speeds, usually in counterclockwise direction.
 - **Straight-line Winds**- wind that comes out of a thunderstorm but is not associated with rotation like a tornado wind.
 - **Downdraft**-is a small-scale column of air that rapidly sinks toward the ground.

- **Downburst**– strong downdraft with horizontal dimensions larger than 4 km (2.5 mi) resulting in an outward burst or damaging winds on or near the ground.
- **Microburst**– small, short lived, concentrated downburst that produces an outward burst of damaging winds at the surface.
- **Gust Front**– a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm. Sometimes the winds push up air above them, forming a shelf cloud or detached roll cloud.
- **Derecho**– widespread wind storm that is associated with a band of rapidly moving showers or thunderstorms, it consists of numerous microbursts, downbursts, and downburst clusters.
- **Haboob**– wall of dust that is punched out along the ground from a thunderstorm downdraft at high speeds.

Extent:

Tornadoes and wind storms can occur throughout Clinton County, though events are usually localized. Severe thunderstorms may result in conditions favorable to the formation of numerous or long-lived tornadoes. General wind events are included in this hazard section due to the fact that thunderstorms generally have favorable conditions that can develop into tornadoes. Tornadoes can occur at any time during the day or night but are most frequent during late afternoon into early evening, the warmest hours of the day, and most likely to occur during the spring and early summer months of March through June.

Tornado movement is characterized in two ways: direction and speed of spinning winds, and forward movement of the tornado, also known as the storm track. The forward motion of the tornado path can be a few hundred yards or several hundred miles in length. The width of tornadoes can vary greatly, but generally range in size from less than 100 feet to over a mile in width. Some tornadoes never touch the ground and are short-lived, while others may touch the ground several times.

Straight-line winds and windstorms are experienced on a more region-wide scale. While such winds usually accompany tornadoes, straight-line winds are caused by the movement of air from areas of higher pressure to areas of lower pressure. Stronger winds are the result of greater

differences in pressure. Windstorms are generally defined with sustained wind speeds of 40 mph or greater lasting for one hour or longer, or winds of 58 mph or greater for any duration.

Damages and deaths can be especially significant when tornadoes move through populated or developed areas. The destruction caused by tornadoes ranges from light to extreme, depending on the intensity, size and duration of the storm. Typically, tornadoes cause the greatest damages to structures of light construction such as mobile homes. The Enhanced Fujita Scale, also known as the “EF-Scale,” measures tornado strength and associated damages. The EF-Scale is an update to the earlier Fujita Scale, also known as the “F-Scale,” that was published in 1971. It classifies United States tornadoes into six intensity categories, as shown in the Table below, based upon the estimated maximum winds occurring within the wind vortex. Since its implementation by the National Weather Service in 2007, the EF-Scale has become the definitive metric for estimating wind speeds within tornadoes based upon damage to buildings and structures. F-Scale categories with corresponding EF-Scale wind speeds are provided in Table below since the magnitude of previous tornado occurrences is based on the F-Scale.

ENHANCED FUJITA SCALE (EF-SCALE) CATEGORIES WITH ASSOCIATED WIND SPEEDS AND DESCRIPTION OF DAMAGES.			
EF-Scale Number	Wind Speed (mph)	F-Scale Number	Type of Damage Possible
EF0	65–85	F0-F1	Minor damage: Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over. Confirmed tornadoes with no reported damage (i.e., those that remain in open fields) are always rated EF0.
EF1	86-110	F1	Moderate damage: Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF2	111–135	F1-F2	Considerable damage: Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF3	136–165	F2-F3	Severe damage: Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF4	166–200	F3	Devastating damage: Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
EF5	>200	F3-F6	Extreme damage: Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (300 ft); steel reinforced concrete structure badly damaged; high-rise buildings have significant structural deformation.



Location:

The National Weather Service has determined wind zones for the United States. The following map indicated that Clinton County is located in the Zone 2 which can experience winds up to 160 miles per hour.

Previous occurrences:

The National Center of Environmental Information (NCEI) was used to obtain information on wind events that have impacted Clinton County. The table above lists the events in each category. A few descriptions of notable wind events follow.

WIND EVENTS IN CLINTON COUNTY BETWEEN 1996- 2018		
Type of Event	Number of Events	Amount of Property Damage
High Winds	26	\$1,700,000
Strong Winds	27	\$511,000
Thunderstorm Winds	70	\$3,728,000
Tornado	1	\$30,000

Plattsburgh 9/17/1999 High Winds. In Plattsburgh, NY remnants of Tropical Storm Floyd moved through southern New England strong winds combined with saturated soils from heavy rain resulted in many trees and powerlines being blown down. There was an estimated 2,000 without power. A cable TV tower was blown on the top of another building. Several boats were damaged along the shore of Lake Champlain. A radio station measured a peak gust of 53 knots (61 mph). There was an estimated \$500,000 in property damage, with no death or injuries reported.

Mooers 7/08/2004 Tornado. An area of low pressure moved through Québec, Canada with an associated cold front in the afternoon of the 8th. The town of Mooers, NY in Clinton County experienced a brief F0 tornado. There was structural damage to a house and surrounding property totaling an estimated \$300,000 in damages. There were no deaths or injuries reported.

Countywide 8/16/2007 Thunderstorm Wind. Scattered thunderstorms developed in an unstable airmass which intensified into a supercell thunderstorm. Significant straight-line wind damage (estimated to be between 60 to 80 mph) in the form of snapped, uprooted, and downed trees, downed power lines, structural damages such as trees on houses as well as roof shingles blown off. Several boats and docks were damaged in the Plattsburgh marina. In Altona, there were numerous downed trees. Dannemora had a pickup truck crushed under a tree. Several trees were downed in Beekmantown, and a tractor trailer was blown over near mile marker 159 on I-87. The storm caused an estimated \$925,000 in property damage with no deaths or injuries reported.

Peru 7/12/2010 Thunderstorm Wind. Surface instability and a weak mid-atmospheric disturbance triggered some widely scattered showers and thunderstorm in the Chaplain Valley. In Peru, particularly near the Plattsburgh Airport there were several pulses of strong to damaging winds.

There were structural damages to a few hangars and an old DC-3 aircraft was pushed by the wind through a chain link fence. There were trees and wires down in Peru along Lakeshore Drive. The storm caused an estimated \$1,500,000 in property damage, and no injuries or deaths were reported.

Potential Loss:

The 2019 New York State Hazard Mitigation Plan reports the losses to Clinton County, amounts are reported in the table below.

REPORTED LOSS FOR CLINTON COUNTY 1996-2017					
Damage*	Annualized Damage*	Events	Annualized Events	Severe Events	Annualized Severe Events
\$8,480	\$396	194	5	1	0

*value in thousands of dollars

Damage from wind events to residential homes or businesses would be covered under a home owner or commercial insurance policies. Electric power providers cover the cost of reestablishment of the power grid.

Probability of future events:

Clinton County has been impacted by wind events in the past. These wind events will continue into the future. Residents can expect yearly events and the impact from these events in the future. The wind events have a likely probability of occurring in Clinton County.

- Low probability (less than once every 50 years)
- Medium probability (once every 8-50 years)
- **High probability** (once every 1-7 years)

These wind events can impact electric power, but most residents and local officials possess generators and heat sources other than electric to manage times without power.

SECTION 5: CAPABILITY ASSESSMENT

Introduction:

Clinton County is a mostly rural county where the county agencies provide assistance to the 14 towns, 3 villages and 1 city with a variety of services and grants. This has worked well, as many of the towns and villages lack the staff capacity or the expertise to accomplish these tasks. Several county agencies are profiled within this document and programs and projects that mitigate hazards.

A number of resources can be utilized to implement hazard mitigation initiatives including emergency response measures, fiscal capabilities, and participation in local, regional, state, and federal programs. The presence of these resources enables municipal resiliency through actions taken before, during, and after a hazard event.

Capability looks at the resources available to local municipalities to reduce disaster risks. These resources can be placed into five categories:

1. **Human Resources:** local police, fire and ambulance, emergency management, utility providers, medical assistance personnel, teachers, clergy, social workers, etc.
2. **Physical Resources:** equipment, vehicles, public lands, facilities and buildings, etc.
3. **Technological Resources:** Early warning systems, weather alert radios, stream-level monitoring, etc. Using the Geographic Information Systems (GIS) can produce sophisticated map images. When coupled with other information databases, GIS provides a wealth of visual and factual information for disaster planning, response, and recovery. The Internet is home to hundreds of web pages and home sites related to all types of disaster, emergency management and hazard mitigation.
4. **Informational Resources and Public Awareness and Education Efforts:**
 - i. National Weather Service
 - ii. American Red Cross-Disaster Education
 - iii. Salvation Army
 - iv. Business groups
 - v. Existing public outreach of Emergency Management Agency
 - vi. Local Emergency Planning Committee's
 - vii. Regional Groups
 - viii. School District Plans
 - ix. Brochures on hazards to be distributed to various locations throughout the county.
5. **Financial Resources:** "Where will we get the money for hazard mitigation in our municipality?" Current federal and state sources of funding include:
 - a. Hazard Mitigation Grant Program (FEMA)
 - b. Pre-Disaster Mitigation Program (FEMA)
 - c. Flood Mitigation Assistance Program (FEMA)

- d. Flood Mitigation Assistance Planning Grant (FEMA)
- e. USACE Water Resource Development Block Grant
- f. Local Waterfront Revitalization Program (NYSDOS)
- g. Small Business Administration Loan Program
- h. DOT (Transportation Enhancement Program)
- i. DEC (Dam safety program, Stormwater Management Program)
- j. Community Development Block Grants (CDBG)
- k. Department of Agriculture

The following Clinton County agencies conduct mitigation of hazards as part of their daily operations.

Clinton County Department of Health:



The Clinton County Health Department provides substantial support to the towns and villages in the county through a variety of public health and environmental health projects and programs. The Environmental Health and Safety (EHS) Division of the Clinton County Health Department is the most involved with hazard mitigation projects, and projects involved with water quality issues. According to the 2018 Clinton County Health Department Annual Report the EHS Division

“uses science, risk management, education and enforcement to monitor and control environmental factors that may cause disease and injury in Clinton County.” Placing this department in a position to be most involved with the environmental hazards present in Clinton County as they provide direct programmatic support to the residents of the county through their various programs.

The programs that the EHS division offer that are most related to hazard mitigation are (information taken from annual reports released by the Department of Health):

1. **Public Water Program:** Includes the monitoring and oversight of community and non-community public water systems in the county.
 - Perform water system inspections, including water sampling and facility regulations (see table on next page)
 - Support towns, villages, and city with grant funding applications for water quality related projects such as upgrade to salt storage sheds to protect groundwater.

EHS PUBLIC WATER PROGRAM SYSTEM INSPECTIONS				
Inspection Type	2015-16	2016-17	2017-18	2018-19
Municipal (City, Town, Village)	19	17	25	17
Community (MHPs, Apartments)	23	17	35	27
Non-Community (FSE, Schools, Campgrounds)	89	85	81	89

*table recreated from the 2018 Clinton County Health Department, EHS Division 2018 Annual Report

- Will be working with the City of Plattsburgh to upgrade their reservoir infrastructure and investigate the potential to move from surface water sources to underground wells.
 - Monitor private water wells that have been contaminated with road salt.
 - Provide free bacteriological sampling to individual well owners.
- 2. **Mobile Home Park Program (MHP) and Temporary Residents (TR) Programs:** Regular inspection of MHPs are performed by the EHS Division staff to check the facility's water system, sewage disposal system, garbage disposal, and fire safety. They also work with Temporary Residence (TR) facility owners to ensure facilities are constructed upgraded to the applicable Building and Fire Codes required at the time the facility was built.
- 3. **Healthy Neighborhoods Program:** Since 1985 this program as been working to enhance the health, safety, and environmental living conditions for Clinton County residents. Focused on asthma, lead poisoning, fire safety, indoor air quality, and injury prevention. This program enables the EHS Division to provide individuals safety products for the home.
 - In 2018 distributed the following safety products to residents: smoke detectors, carbon monoxide detectors, fire extinguishers, batteries, nightlights, first aid kits, water bottles, non-slip bath treads, flashlights, child safety products, radon kits, mold/mildew sealant, and asthma safety materials.
- 4. **Public Health Emergency/ Incident Response and Investigations:** The EHS Division partners with several agencies to provide response to public health emergencies. These agencies include: CCHD Administration, CCHD Health Care Services Division, CCHD Medical Reserve Corps, County Emergency Services, NYSDOH, UVM: Champlain Valley Physicians Hospital, Clinton County Department of Social Services, NYS Police, Clinton County Sheriff, City of Plattsburgh Fire Department, the American Red Cross, and local volunteer fire departments.
 - Underwood Mobile Home Park Flooding: January 15, 2018 the Underwood Mobile Home Park was evacuated, and 72 homes were flooded and destroyed. With assistance from the New York State Governor's Office the MHP was restored, including new mobile homes, new electrical services, and berm/levee improvements.

- The EHS Division as well as the Health Care Services Division staff provided a presence at the Community Resource Center to provide assistance to Underwood Residents through February 2018.
- Road Salt impacted private wells (Beekmantown and Saranac): EHS Division involvement with salt contaminated groundwater in the towns of Beekmantown and Saranac as the result of storage of salt/sand mixtures in highway garages. EHS Division outlines the options to provide safe drinking water to impacted homes and continues to monitor the projects.
 - In 2018 the Town of Champlain Salt Storage shed was completed.

The EHS Division is also heavily involved with education and outreach and is looking to increase their efforts in Clinton County. The EHS Division is planning on coordinating Health Department/ Code Officer Meetings to discuss various items, increase coordination, and provide opportunities for education and collaboration. The EHS Division has also prepared a Water Quality Strategy for Clinton County with 4 Goals:

- Goal 1: Identify, Document and Prioritize Water Quality Issues in Clinton County on an Ongoing Basis
- Goal 2: Develop and Implement Strategies to Address Identified Water Quality Issues
- Goal 3: Increase Public Awareness of Water Quality Concerns
- Goal 4: Maintain an Active and Viable Committee and Network of Organizations to Address Water Quality Issues on an Ongoing Basis.

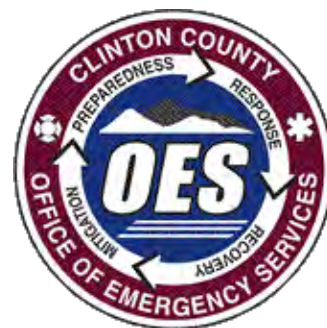
The Water Quality Strategy has a list of action items, which list the various known problems in the county. Addressing these issues will have the co-benefit of addressing issues related to flooding through their intent to address problems relating to:

- Stormwater, municipal, and field runoff
- Stream-bank erosion
- Undersized natural stream culverts

The EHS Division of Clinton County Public Health’s daily activities greatly support the hazard mitigation activities throughout the county.

Clinton County Office of Emergency Services:

The Clinton County Office of Emergency Services (OES) is highly involved in programs and projects throughout the county that have increased the hazard resilience of the region. The OES mission is “to provide the residents and visitors of Clinton County with assistance services necessary for Preparedness, Response, Recovery, and



Mitigation from natural and man made disasters.” The OES offers programs to support their mission including:

- Emergency Scene Coordination (Fire, EMS, HAZMAT, Cause & Origin)
- Hazardous Materials/ WMD Response Team Operation
- Operation of the County Emergency Operations Center
- Operation and Maintenance of the County Wide Public Safety Radio System
- Development and Maintenance of Emergency Mutual Aid Agreements
- 911 System Coordination, Public Safety Answering and Radio Dispatch
- Emergency Services Training Programs:
 - Fire prevention and suppression
 - Emergency Medical Service (EMS)
 - HAZMAT/WMD Response
 - Incident Command and Management Training

The Clinton County OES website also serves as a portal for people to access educational materials about various emergency topics (i.e. severe weather, flooding, winter weather, power outages). They also actively coordinate with the Clinton County Health Department to provide education and outreach through social media and various county agency websites. Continuous trainings are provided to emergency responders as well as local fire departments.

OES is looking to develop debris management plans with local municipalities as well as a county debris management plan. They are also providing equipment upgrades to local governments in Clinton County to allow for greater communication during times of emergency.

OES provides coordination not only within the county but with adjacent counties in times of large regional emergencies. During Tropical Storm Irene in 2011 the OES staff provided coordination with Essex and Franklin County for equipment and materials needed to help control flood waters and protect Clinton County residents. The OES also cooperates with Essex County to provide emergency radio services, as the radio tower where the equipment is installed is owned by Essex County and the access road is maintained by Clinton County.

The Clinton County OES is also responsible for the development and distribution of the Comprehensive Emergency Management Plan (CEMP) document, which was recently updated in April 2020, and includes guidelines for local and county emergency response personnel. The CEMP is a document that guides emergency response for the towns and villages within Clinton County and has information regarding emergency notification, evacuation routes, activation of the Emergency Operation Center, and various other topics of import regarding emergency situations.

Within the CEMP are 29 of natural and human-made hazards assessed for their risk specific to Clinton County, they are ranked based upon their likelihood and their consequence and given a risk score. The document also details the hierarchy of the Incident Command System and details the activation of the multi-agency response system. It designates the OES Director as the default

Incident Commander and outlines the ways to determine the other supporting roles needed in times of emergency. There is a detailed outline of the critical facilities within the county such as hospitals, schools, emergency shelters, and locations of vulnerable populations (i.e. nursing homes).

The CEMP also outlines the activation of the Emergency Operations Center (EOC) and outlines the response levels and which staff and support organizations will be activated. It also details the methods of evacuation, as well as the notification systems to be used in the event of an evacuation. Evacuation routes will be determined as needed, as the various hazards will impact the available routes differently. Individuals with special needs, and service animals will be given special consideration and assistance in the event of an evacuation. Law enforcement and traffic control officers (TCO) will be used to control the movement of traffic in the event of evacuation and this will be primarily coordinated with the local governments. There are no hazards that threaten Clinton County that would require a county-wide evacuation, and therefore there is no need for the designation of a county-wide evacuation route (i.e. there are no nuclear power plants).

Notification systems available for Clinton County to use for public warning in the event of an emergency event:

- NY Alert
- Emergency Alert System (EAS)
- Federal Emergency Management Agency National Warning System (NAWAS)
- National Oceanic Atmospheric Administration National Weather Radio (NWR)
- Emergency Service Vehicles with Siren and Public Address Capabilities
- School Emergency Notification System
 - Managed by Champlain Valley Educational Services (CVES)
- Variable Messaging System (VMS) (electronic traffic signs)
- Door-to-door Warning

The CEMP also outlines the procedure for the declaration of a State of Emergency (SOE), as well as the criteria for proclamation. This section also outlines the various actions that can be taken through local emergency orders.

The CEMP is updated annually, as well as in the event of any major organizational or procedural changes have occurred. There is a full update of the CEMP every 2 years, that is then distributed to the local and county officials that need access to this document as part of their job.

Clinton County Soil and Water Conservation District:

Established on December 1, 1949 by the Clinton County Board of Supervisors it is a legal subdivision of state government, formed as a special district. Each county in New York State has a soil and water conservation district. The Clinton County Soil and Water (CCS&W) mission is to “protect and improve the lakes, rivers, streams, soils and other natural resources of Clinton County through locally-led conservation projects and programs.” Many of their projects have the co-benefit of managing issues related to flooding.

CCS&W maintains equipment that can be used for various conservation projects and they are available to individuals in the county. The equipment they offer includes a hydroseeder, a 3PTH tree planter, Wheatheart post pounder, no-till drill, Aerway aerator, and a vac truck. These various pieces of equipment can be used for projects involving erosion control and stormwater drain maintenance.

CCS&W is also responsible for performing routine inspections of culverts located on county roads to ensure compliance with DEC standards. While these standards are aimed at preserving habitat continuity for fish species in the county, there is a co-benefit of allowing the free movement of water, preventing inundation flooding. Further, the CCS&W replaces culverts when need is demonstrated, in compliance with DEC standards.

The CCS&W also provides grant funding for projects in the county that are related to conservation, examples of projects (from the CCS&W website) include:

- Removal of exotic and invasive species
- Educational signage, species identification in parks or along trails
- Installation of a pollinator garden
- Purchase of equipment, materials, and plants to maintain and improve hiking trails
- Purchase of rain barrels and compost bins
- Funding for environmental education conference
- Purchase of and training on highway road maintenance equipment
- Water quality testing equipment

The Soil and Water District is also involved in a variety of programs and projects that directly relate to public health and environmental conservation. The annual tire round up, intends to prevent chemicals leaching from improperly disposed of tires and reducing mosquito breeding grounds. They also monitor invasive species such as the Emerald Ash Borer, which will contribute substantially to tree and limb collapse if the insect establishes a presence in Clinton County. Overall this department provides technical support, educational outreach as well as supplies and



equipment to the municipalities and residents of Clinton County intended to increase conservation and therefore resulting in better soil and water health.

Clinton County Planning Department:

The Clinton County Planning Department (CCPD) offers needed planning, Geographic Information Systems (GIS) and grant writing supports to the various jurisdictions within Clinton County. The mission of the CCPD is “to improve the quality of life within Clinton County by promoting the wide use of natural and man-based resources. Issues and needs that are commonly addressed by the department include land use planning and zoning, economic and community development, agriculture, environmental impact assessment, disaster recovery, recreation, housing and public transportation.”

Many of the municipal governments in the county have either a part-time planner or do not employ a planner at all, putting them at a disadvantage when mitigation projects are needed. They offer the following services (according to their webpage)

- Technical assistance on planning and zoning issues to local municipalities and the public
- Administration of the Clinton County Public Transit System (CCPT)
- Administration of the State directed Agricultural District Program
- Land development information, including wetlands, floodplains, and aerial photos
- Staff to Clinton County Planning Board
- Census and other vital statistics
- Geographic Information Systems (GIS) Mapping and Analysis. On their website they provide the following maps:
 - Broadband expansion map
 - County GIS Map (includes parcel data, as well as wetlands and floodplains)

The CCPD is also involved in floodplain management and the buyout of housing units in the floodplain. County-wide projects are coordinated through the CCPD such as the investigation of the provision of dry-hydrants to increase preparedness for wildfires. The department will also

CLINTON COUNTY PLANNING DOCUMENTS		
Document Title	Year Adopted	Notes
Agricultural and Farmland Protection Plan	2002	This document is referenced by many of the local jurisdictions to help guide the regulation of agricultural lands
Clinton County Housing Needs Assessment	2004	
Lake Champlain Trail Masterplan	1996	
Clinton County Land Use Plan	1978	

provide trainings to local code enforcement officers regarding the updated FEMA FIRM maps, to ensure compliance with floodplain regulations in the jurisdictions of Clinton County.

There is limited need in Clinton County for county-level planning documents, as zoning regulations are handled at the local level. As such there are a limited number of county planning documents and they are predominantly used for reference in obtaining funding for specific projects that emerge at either the local or county level.

Clinton County Highway Department:

The mission (found on their website) of the Clinton County Highway Department (CCHWD) is “to provide the travelling public with a safe and reliable transportation system through effective and efficient highway and bridge maintenance programs; effective traffic sign maintenance, traffic signage updates and pavement marking programs; optimal snow and ice control plans; comprehensive disaster preparedness programs; and effective long range plan development to meet current and future transportation needs.”

The CCHWD has numerous ongoing programs in providing services to Clinton County residents, and in general the travelling public for the maintenance, repair and reconstruction of 350.8 miles of County highways, and 109 County-owned bridges (99 are active). The programs that they provide are important for the mitigation of a variety of hazards (i.e. flooding, severe winter storms), and their daily activities contribute to the hazard preparation of the county. The programs offered include:

- Operational
 - Road reconstruction and resurfacing
 - Guiderail, culvert, and shoulder maintenance, repair, and upgrades
 - Maintaining and improving open and closed drainage systems
 - Repair and upgrade of traffic signage and signals
 - Surveying and monitoring of traffic conditions on County roads
 - Maintenance of pavement markings
 - Snow and ice control
 - Annual roadside mowing program
 - Litter control, removal of debris or dead animals
- Engineering
 - Surveying to support in-house highway realignments and reconstruction
 - Safety training programs
 - Management of Adopt-a-Highway programs
 - Accident evaluation and historic data
 - Management of permit system for maintenance, repair, alteration or construction activities of other agencies or individuals within the county rights-of-way



The Kent Falls Road bridge has been closed to traffic since 1993 and has since been the site of several drowning deaths due to its popularity as a local swimming spot. The deconstruction of the bridge began in mid-June 2020 and is expected to be completed within just a few weeks. (image source: [pressrepublican.com](https://www.pressrepublican.com))

- Management of engineering consultant designs for bridge replacement, major upgrade projects and major highway construction
- Development and oversight of Department contracts including snow and ice contracts with various towns, manpower and equipment rental materials for highway and bridge work, and pavement recycling
- Traffic studies and annual daily traffic counts

The CCHWD also provides training programs that are offered with varying frequency, these training programs are part of the Comprehensive Safety Program and they include:

- Departmental Safety Plan and Procedure Policy
- Safety Meetings
- MSDS trainings/ Hazard Communication Program
- Fire Safety/ Evacuation Plans
- Violence in the Workplace
- Lockout/ Tagout Policy Training

- Garage Safety Inspections
- Forklift Operation training
- Flagger Certification Training

The Highway Department also coordinates with 12 of the towns within Clinton County to provide snow and ice services. The CCHWD is responsible for a total of 345.6 miles of roads within the county and provide coverage for county roads in Ellenburg (32.9 miles) and Altona (34.3 miles). They maintain staff and the equipment needed for the removal of snow and ice from roads and employ mechanics to monitor the repairs and maintenance of the fleet.

The CCHWD is responsible for the maintenance of roads and bridges. They assist in the maintenance of stormwater catch basins. The department is involved in culvert maintenance and debris removal. They coordinate with NYSEG and other local utility providers to manage limbs and trees that present a hazard to powerlines and infrastructure. The department is also responsible for the removal and replacement of county bridges. The following bridges in Clinton County are listed as projects for the 2020 construction season:

- Tappin Road Bridge over the Great Chazy River (replacement)
- Harney Bridge Road over Saranac River (replacement)
- Kent Falls Road bridge over Saranac River (removal)

Conclusion:

The many agencies within Clinton County have a long history of working together to achieve county level goals. They have opens lines of communication and often coordinate to provide services to the residents of the county. The capabilities listed here are not to be considered comprehensive, instead are meant to highlight some of the programs and projects that are directly related to hazard mitigation work within the county.

SECTION 6: MITIGATION STRATEGY

County Hazard Mitigation Plan Update:

Update Process Summary:

The mitigation strategy section of the hazard mitigation plan describes the approach that Clinton County wishes to implement to reduce the negative effects of the hazards identified in the plan. The mitigation strategy section contains mission statement, goals, objectives and projects or actions. These mitigation goals objectives and actions are based upon the hazard identification and risk assessment section of the plan.

- **Mission statement** is the statement that sets out the overall goal of the hazard mitigation plan.
- **Mitigation goals** are general guidelines that explain what Clinton County wants to achieve. Goals are usually expressed as broad policy statements representing the desired long-term results.
- **Mitigation objectives** describe strategies or implementation steps to attain the identified goals. Objectives are more specific statements than goals. They describe steps that are usually measurable and can have a defined completion date.
- **Mitigation projects** or actions are specific projects that the community wants to implement to reduce the effects from hazards.
- **Action Plan** describes how the mitigation actions will be implemented, including identification of lead agency, cost of the project, potential funding sources, and the time frame to implement project.

There are four categories of mitigation topics. The first is **education and awareness** projects. The second topic is **plans and regulations implementation**. The third topic is **structure and infrastructure projects**. The fourth and final topic is **natural systems protection**. These topics are fully described below. Many of the following category descriptions provide case examples concerning the flood hazard in Clinton, but these categories can apply to other hazards as well.

1. Local Plans and Regulations Measures

Government administrative or regulatory actions or processes that influence the way land and buildings are developed and built. These actions also include public activities to reduce hazard losses. Examples include planning and zoning, building codes, capital improvement programs, open space preservation, and storm water management regulations.

These regulations are often based upon federal or state standards designed to protect the public. Building codes are designed for the areas prevailing winds and snow loads, which ensure structures are built to the hazards of the area.

2. Structure and Infrastructure Property Protection Measures

Actions that involve the modification of existing critical and public facilities, buildings, structures, and public infrastructure to protect them from hazards. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and infrastructure modification.

Structures, if designed to the hazard(s) of the area, can withstand the hazard(s) and continue to function as designed. Infrastructure can also be designed for the hazards of the area. For example, culverts can be increased in size to accommodate additional flood waters from extreme events, or bridges can be designed and constructed to eliminate debris accumulating on pillars in river channels.

3. Natural Resource Protection Measures

Actions that, in addition to minimizing hazard losses, also preserve or restore the functions of natural protection systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration preservation.

Restoration of the natural environment can reduce the effects of hazards on the areas. For example, stable river banks do not increase sediment loads in river, and preservation or restoration of wetland provide temporary storage of flood waters.

4. Education and Awareness Projects

Actions to inform and educate citizens, elected officials, and property owners about potential ways to mitigate the hazards that can occur in the County. Such actions include outreach programs and projects, real estate disclosure, hazard information centers, and school-age and adult education programs.

Education and awareness programs and projects increase the public's understanding of hazards and what they can do to mitigate these hazards

These four categories of mitigation topics address all aspects of mitigation in Clinton County.

Updates for the 2021 Mitigation Plan:

The Clinton County mitigation strategy section was revised for the 2021 plan update. The Mitigation Advisory Committee (MAC) met to review the vision statement, goals, objectives and projects/strategies from the 2014 County Hazard Mitigation Plan. Projects/strategies were assessed

as to the current status of the project. New projects were added for the county as well as the towns and villages.

As the plan was being update, the vision statement from the 2014 plan was reassessed and determined to be suitable for the County's update. The mission statement was adopted from the Hazard Mitigation Statement developed by the State Mitigation Summit of 2002 and 2008:

To create communities who's daily activities reflect a comprehensive commitment by government, business, nonprofit organizations, and the public to eliminate or reduce risks and adverse impacts from natural, technological and human caused hazards.

The 2014 Hazard Mitigation Plan had 3 goals to provide overall guidance to the county, towns, villages, and city in achieving mitigation.

2014 Mitigation Goals

Goal 1: Protect life and property

Goal 2: Increase public awareness

Goal 3: Provide for emergency services

These goals were reviewed by the MAC, new mitigation goals were developed and added to the previous set of goals.

2021 Mitigation Goals

Goal 1: Protect life, property, and natural resources

Goal 2: Increase public awareness by continuing to implement education and awareness initiatives to increase awareness of Hazard Events in Clinton County

Goal 3: Provide for emergency services, and continue to coordinate amongst county agencies for disaster response and recovery

Goal 4: Continue to implement existing and new grants by Clinton County agencies to mitigate hazards in Clinton County

Goal 5: Continue to implement structural and infrastructure projects to mitigate the impacts of hazards on structures and facilities in Clinton County

Goal 6: Continue to acquire/buyout or implement other mitigation techniques for structures impacted by flood events in Clinton County and the towns and villages of Clinton County.

Goal 7: Continue to assist towns and villages in developing and updating plans, regulations, and programs to mitigate hazards in Clinton County and the towns and villages of the county.

Goal 8: Continue to implement existing and new grants to increase natural systems protection projects to mitigate effects of hazard events in Clinton County and its towns and villages.

The MAC also reviewed objectives from the previous plan and determined that they were suitable for use in the plan update, the objectives are listed below. They have been updated to reflect the current plan goals that they address.

1. Introduce mitigation activities that will make homes, businesses, and critical facilities more hazard resistant (Goals 1, 5, & 7)
2. In areas vulnerable to hazards, encourage businesses and homeowners to take preventative actions when possible (Goals 2 & 6)
3. On a 5-year cycle review existing building codes, safety procedures, town and county ordinances to update recent standards for building protection. (Goal 7)
4. Immediately enforce existing building codes within the county and help education local enforcement officials on existing and newly established codes pertaining to floodplains. (Goal 7)
5. Encourage homeowners, business owners, and rental tenants to purchase appropriate insurance coverage to protect them from potential damages from hazards. (Goals 2 & 7)
6. Implement mitigation activities encouraging environmental protection (Goal 8)
7. Continue developing and integrating education and outreach programs in an effort to enhance public awareness of hazards, providing information on specific activities for individuals in anticipation of a hazard event. (Goal 2)
8. Provide information on current government programs and funding resources to assist with mitigation (Goals 1 & 2)
9. Strengthen communication and cooperation between public agencies, citizens, nonprofit groups, and businesses to implement mitigation activities effectively. (Goal 2)
10. Identify and plan for acquiring any specific emergency services and equipment needed to improve response capabilities for specific hazards (Goals 1, 3, & 5)

11. Review emergency traffic routes, make changes as needed, and educate the public about the routes (Goals 2 & 3)

Various Clinton County agencies are profiled in Section 5 of this plan, and descriptions of the programs implemented by these agencies are included. The following information is to provide consistency between the county, town, village and city data in this updated plan.

Clinton County has several planning mechanisms in place to assist and guide the county, towns, villages, and city. These long range planning documents adopted by the county provide an overall vision for Clinton County's future.

CLINTON COUNTY PLANNING DOCUMENTS	
Document Title	Year Adopted/ Notes
Agricultural and Farmland Protection Plan	2002, used by many local governments
Clinton County Housing Needs Assessment	2004
Lake Champlain Trail Masterplan	1996
Clinton County Land Use Plan	1978

There is little need for county-level planning documents as zoning is handled at the local level in Clinton County. The county level documents exist primarily to obtain funding for programs and projects.

Clinton County's Comprehensive Emergency Management Plan is a document designed to be the reference during times of disaster. "The purpose of the Clinton County CEMP is to set forth the basic framework for managing emergencies in Clinton County" (taken directly from the April 2020 CEMP). The document outlines general planning guidelines, preparedness measures, response strategies and recovery strategies. This document provides instructions regarding the operation of the Incident Command System (ICS), and an Emergency Operations Center (EOC). For a description of the contents of this document, see the Clinton County Office of Emergency Services portion of Section 5: Capability Assessment.

The County physical assets are described in the table on the next page in regard to their relationship to the floodplain and past flood events.

CLINTON COUNTY PHYSICAL ASSETS FLOOD VULNERABILITY					
Facility	In the 500-year floodplain?	Flooded in the past?	Flood Mitigations	Generator?	Notes
Clinton County Office Building Complex	N	N	N		Houses several county departments and agencies
Clinton County Highway Department	N	N	N	Y	
Clinton County Public Transit	N	N	N		
Department of Social Services	N	N	N		
Clinton County Mental Health and Addiction Services	N	N	N		
Clinton County Office of Emergency Services	N	N	N	Y	Also houses the main servers for the county
Clinton County Nursing Home	N	N	N	Y	
Plattsburgh International Airport	N	N	N	Y	
Clinton County Fairgrounds	Y	?	?		While the property is adjacent to the Saranac River, no structures appear to be in floodplain

2014 Mitigation Actions Review, County Accomplishments, and Proposed 2021 Mitigation Actions:

The Mitigation Action Committee reviewed the county projects that were included in the 2014 Clinton County All-Hazards Mitigation Plan. Review of these projects includes status of the projects, as well as information regarding the progress of projects not completed. Projects that are ongoing are still in progress or are part of continuous efforts within the county.

FEMA has 4 categories of mitigation strategies that have been applied in the County Accomplishments and the New Hazard Mitigation Projects for the 2021 update tables. The new categories and descriptions of the types of programs and projects that would fall into each of the categories follow.

1. **Local Plans and Regulations:** address zoning laws, subdivision and land development regulations, floodplain ordinances, building codes and other documents
2. **Structural and Infrastructure Projects:** address physical structures such as residential structures, commercial structures, and government owned buildings, and infrastructure such as culverts, roads, and bridges.
3. **Natural Systems Protection:** projects address streambank stabilization projects, wetlands protection, and other natural systems.
4. **Education and Awareness Projects:** address how the public will be educated on all aspects of mitigation.

CLINTON COUNTY 2014 MITIGATION PROJECT REVIEW								
Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact of multi-hazards	Improve public awareness of county identified hazards (Goal 2)	Educate county residents with information regarding steps to be taken to decrease the impact of county identified hazards on property	Office of Emergency Services	Current funding low	Fall 2013- Ongoing I	H	Ongoing	
Reduce the impact of multi-hazards	Public awareness of hazard warning systems in county jurisdictions (Goal 1, 2, 3)	Disseminate via Clinton County web page all warning systems in place	Office of Emergency Services	Current funding low	Winter 2013/14	H	Ongoing	Facebook and website, coordinating with CCHD, NYAlert Warning System (Everbridge) County (landlines and cell phones)
Reduce the impact of multi-hazards	Maintain current inventory of at-risk building and infrastructure (Goal 1, 3)	Continually update inventory of at-risk structures in each jurisdiction	Office of Emergency Services, Municipal Executives	Current funding low	Fall 2013- Ongoing , LT	M	Ongoing	LEPC coordinates with municipalities (reviews potential hazards within the county). New FIRM maps provide vulnerability to floods.
Reduce the impact of multi-hazards	Maintain list of the year built/level of protection for each critical facility relating to all applicable hazards (Goal 1, 3)	Conduct a study to determine year built and level of vulnerability for each critical facility	Clinton County GIS Coordinator, Municipal Executives	Current funding low	Fall 2014 LT	M	Not Completed	LEPC, new critical facilities are in floodplain as per updated FEMA maps

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact of multi-hazards	Foster involvement in communication/collaboration between the County and Municipalities (Goal 2)	Develop and hold public hearings related to the inclusion of mitigation activities in local laws, encourage the public to add to the collaboration efforts	Clinton County, Executives of Municipalities	Current funding low	Fall 2013 Ongoing I	M	Ongoing	FEMA holds informational meetings (Glen, CCPD)
Reduce the impact of multi-hazards	Maintain and expand emergency preparedness and response countywide (Goal 3)	Increase communication and cooperation between County/Local DPW and County/Local emergency services. Link emergency services with hazard mitigation programs	County/ Local DPW, Municipal Executives, Emergency Responders	Current funding low	Fall 2014 Ongoing I	H	Ongoing	CC Highway Superintendents, monthly meetings, OES is in attendance to coordinate/collaborate
Reduce the impact of multi-hazards	Educate citizens, public agencies, private property owners, businesses and schools on mitigating hazards and reducing risks (Goal 2)	Develop, enhance and implement education programs, brochures, school presentations informing groups about ways to reduce risk	County Public Health, Superintendent of area school districts, Municipal Executives, Red Cross	TBD/ Low	Fall 2014 Ongoing I	H	Ongoing	Outreach through CCHD is ongoing and includes a variety of programs. Red Cross- Disaster Outreach, Schools-own outreach, SUNY Plattsburgh- annual education outreach disaster/fire prep

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact of multi-hazards	Encourage homeowners to buy hazard insurance when possible (Goal 1)	Develop an outreach program to inform public about options available	Office of Emergency Services, Municipal Executives, Red Cross	TBD/ Low	2014 ST	H	Ongoing	CCPD (floodplains and wetlands), Local code officers (need more training on floodplain regs), OES- specifically during high flood risk (springtime)
Reduce the impact of multi-hazards	Maintain documents used and required for the mitigation plan (Goal 3)	Create a centralized library of all documents used	County Mitigation Officer	Current funding low	Fall 2013 Ongoing I	H		Glen Cutter CCPD
Reduce the impact of multi-hazards	Connect with elderly, individuals with disabilities, low-income, during major events. (Goal 2)	Design a network of citizens that will check in on individuals during major events	Department of Social Services, Office of the Aging, Municipal Executives (OES, Office of the Aging-Community Care Partners)	TBD/ High	Fall 2013 Ongoing I	L	Ongoing	OES and Office of the Aging, CCPH, HCR. Community Care Partners. Dataset of agencies that coordinate with this information. No specific databases exist, requires huge amount of time. North Country Center for Independence conduit for individuals with disabilities.
Reduce the impact of multi-hazards	Ensure efficient use of resources, during and after storm events (Goal 3)	Coordinate emergency services, public works departments, and public utilities.	Office of Emergency Services, Municipal Executives	Current funding low	Fall 2013 Ongoing I	H	Ongoing	Highway Superintendents meetings. Coordinate with NYSEG/Verizon/Charter/Spectrum (all telecom services in county) as well. (Primelink, Champlain Tele, Chazy/Westport)

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact of multi-hazards	Minimize the impact of hazards on County government operations and critical facilities (County servers operate county jail and nursing home systems)	Purchase generator of sufficient capacity to operate the county computer system of the Clinton County Government Center	Clinton County Building and Grounds Departments	HMGPM	Winter 2013-2014	H	Not Completed, Upcoming ST	Phone systems can be run for about an hour (IT), Servers for county operations have been moved to OES facility (backup), CCHD/probation/Office of Aging/County Clerk is not part of this backup (133 and 135 (some of 137) are separate from government center campus)
Reduce the impact of severe snow/ ice storms	Keep trees from threatening lives, property, and public infrastructure during storm events (Goal 1)	Cut forestation back from thoroughfares, critical facilities and populated areas	County/ Local DPW	TBD/ High	Fall 2013 Ongoing I	H	Ongoing	Can only cut trees that are in the right of way (cannot cut onto private property) NYSEG/Verizon have been trimming around power lines and utility lines (power and telecommunication)
Reduce the impact of severe snow/ ice storms	Reduce ice jams in Perry Mills on the Great Chazy River	Replace culverts with larger ones. Raise 1000' of road Install check valves on culverts-Perry Mill Road (County Route)	County/ Local DPW	TBD/ High	Fall 2015	H	Not Completed	Need analysis and investigation into the cause of ice jams at that location.

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact of severe snow/ ice storms	Identify emergency concerns of specific needs populations (Goal 3)	Survey populations as to their requirements	Office of Emergency Services, Department of Social Services, County Public Health, Office of the Aging	Current funding low	Fall 2013 Ongoing ST	M	Ongoing	*OES , see notes from #10
Reduce the impact of severe snow/ ice storms	Implement debris removal as soon as possible (Goal 1)	Develop plans for debris management after severe winter snow/ice events.	County/ Local DPW, and Highway Departments	Current funding low	Fall 2013 Ongoing	H	Ongoing	Prep equipment prior to forecasted event (coordinates with supervisors). Plan for debris removal/disposal, prioritize road clearing.
Reduce the impact of severe snow/ ice storms	Connect with elderly, handicapped, low-income, during major events. (Goal 2)	Design a network of citizens that will check in on individuals during major events	Department of Social Services, Office of the Aging, Municipal Executives	TBD/ High	Fall 2013 Ongoing I	L	Same as MA#10	Same as MA#10
Reduce the impact of severe snow/ ice storms	Ensure all municipalities receive critical communications	Provide “communication enhancements” to areas of AuSable Forks, Chateaugay Lake. Install microwave tower capabilities for reception	Office of Emergency Services	TBD/ High	Spring 2014	H		OES (Eric Day),

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the potential damage and threat to life and property from wild/forest fires	Investigate county-wide needs for dry hydrants (Goal 1)	Plan for providing dry hydrants as needed	County Planning Department (OES, CCS&W)	Low	ST	H	Ongoing	CCS&W does permitting, parts needed for maintenance of dry hydrants, OES
Reduce the potential damage and threat to life and property from wild/forest fires	Review zoning and guidelines for compliance with national “FireWise Communities” program (Goal 1)	County Office of Emergency Services will conduct a review of “FireWise Communities” guidelines to develop a Best Practices summary.	Office of Emergency Services, County Fire Preventions and Building Codes Offices	TBD/ High	Fall 2013 to Fall 2016 LT	L	Ongoing	
Reduce the impact from severe storm/wind	Keep trees from threatening lives, property, and public infrastructure during storm events (Goal 1)	Monitor and remove trees/limbs in storm areas that prevent potential hazards	County/ Local DPW (County Highway, Local Highway Departments)	Current funding low	Fall 2013 Ongoing I	H	Ongoing	#16, coordinate with utilities as well. OES coordinates with these efforts, especially during an event.

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact from severe storm/wind	Ensure efficient use of resources, during and after storm events (Goal 3)	Coordinate emergency services, public works departments, and public utilities.	Office of Emergency Services, Municipal Executives	Current funding low	Fall 2013 Ongoing I	H	Same as MA#11	Same as MA#11
Reduce the impact from severe storm/wind	Implement debris removal as soon as possible (Goal 1)	Develop plans for debris management after severe winter snow/ice events.	County/ Local DPW, and Highway Departments	Current funding low	Fall 2013 Ongoing	H	Same as MA#16	Same as MA#16
Reduce the impact from flooding	Eliminate obstructions to surface water drainage Goal 1	Identify and examine culverts in affected areas regularly, remove obstructions as necessary	County/ Local DPW, County GIS Coordinator (County Highway)	Current funding low	Fall 2013 Ongoing I	H	Ongoing	CCS&W aquatic passage assessment (flooding/replacement as well)
Reduce the impact from flooding	Clean and maintain stormwater drains and catch basins (Goal 1)	Identify and examine stormwater drains and catch basins in affected areas, follow County DPW guidelines for maintenance	County/ Local DPW, County GIS Coordinator (County/Local Highways Departments, Local DPW, CC Soil and Water, CCPD)	Current funding low	Fall 2013 Ongoing I	H	Ongoing	*CCS&W vac truck in accomplishments

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact from flooding	Create effective flood mitigation activities for “hot spots” within the county (Goal 1)	Identify, evaluate and implement activities in flood areas	County/ Local DPW	TBD/ High	Fall 2014 Ongoing LT	L	Ongoing	*CCPD buyouts (145 housing units), OES coordinates with buyout efforts
Reduce the impact from flooding	Ensure flood prone areas have updated information via County web site (Goal 2)	Identify new flood data and prioritize areas	Office of Emergency Services, County GIS Coordinator, FEMA Mapping	Current funding low	Spring 2014	H	Ongoing	FEMA maps (LIDAR) *draft version on the website (fall outreach) , OES reverse 911 contact
Reduce the impact from flooding	Identify specific structures with recurring flood damages. (Goal 1)	Apply for funding to relocate residents, demolish structures, relocate structures or elevate structures as appropriate.	County Planning Department, Office of Emergency Services	TBD/ High	2013-2014	H	Ongoing	Buyout of 145 units (2 since 2015)
Reduce the impact from flooding	Reduce impact of flooding due to ineffective storm drains in county areas (Goal 1)	Install check valves on storm drains preventing backflows, staffing to maintain system	County/ Local DPW, and Highway Departments	H	Fall 2014 Ongoing LT	M	Ongoing	*underwood project to prevent future flooding (Jan 2019)
Reduce the impact from flooding	Reduce impact of flooding due to development in floodplain areas. (Goal 1,2)	Provide guidance to municipalities for review of potential projects in floodplain areas	County Planning Department, Municipal Executives	Low	Fall 2013 Ongoing	H	Ongoing	code enforcement officers/Local planning directors meeting

Goal	Objective	Strategy	Lead Agency	Funding	Target Date	Priority	Status	Comments
Reduce the impact of earthquakes	Reduce the risk of earthquake damage in old structures	Investigate retrofitting older structures at risk of earthquake damage	County Planning Department	Low	2013 Ongoing	H	Not Completed	OES assists with the identification of potential structures, CCPD applies for funding.
Reduce the impact of earthquakes	Reduce risk of earthquake damage Champlain Valley Physician's Hospital (CVPH) as most of this regional critical care facility was built in 1925.	Investigate the structural safety of Champlain Valley Physician's Hospital (CVPH)	County Planning Department, Office of Emergency Services	Low	2014	H	Ongoing	This project to be included in 2021 project list

CLINTON COUNTY AGENCY ACCOMPLISHMENTS 2011-2020							
Project Name	Goal(s) Addressed	Strategy	Lead Agency	Funding Source	Status	Progress	Mitigation Category
Vac truck purchase	Goal 1, 5	Vac truck purchased that can be lent to the various municipalities for maintenance of stormwater drains	CCS&W	WQIP		Completed	#2 Structure and Infrastructure
Hydroseeder purchase	Goal 1, 5, 8	Hydroseeder purchased to be used by various municipalities for erosion control processes	CCS&W			Completed	#2 Structure and Infrastructure
Culvert inspection	Goal 1, 5, 8	Routine culvert inspection on county roads to ensure that they are up to DEC standards	CCS&W		Ongoing	Ongoing	#2 Structure and Infrastructure
Install sediment basins	Goal 5	Sediment basins installed	CCS&W		Ongoing	Ongoing	#2 Structure and Infrastructure
Emerald ash borer tracking	Goal 1, 5	Emerald Ash Borer observation to determine potential impact on trees/powerlines	CCS&W		Ongoing	Ongoing	#2 Structure and Infrastructure
Maintenance of trees and limbs	Goal 5	Routine maintenance of trees overhanging powerlines	Highway Dept.		Ongoing	Ongoing	#2 Structure and Infrastructure

Project Name	Goal(s) Addressed	Strategy	Lead Agency	Funding Source	Status	Progress	Mitigation Category
Housing buyouts	Goal 6	Buyout of 2 housing units located in the floodplain (along route 9N)	CCPD		Since 2015	Completed	#2 Structure and Infrastructure
Education and Outreach	Goal 2	Coordinate to provide outreach and education to public (social media and county webpage)	CCHD/OES		Ongoing	Ongoing	#4 Education and Awareness Project
School Outreach	Goal 2	Outreach to schools and local doctors	CCHD/OES		Ongoing	Ongoing	#4 Education and Awareness Project
Code Enforcement Officer Education	Goal 2, 7	Outreach with code enforcement officers (municipal)	CCHD		Ongoing	Ongoing	#4 Education and Awareness Project
Zoning and planning trainings	Goal 7	Zoning/planning trainings for local municipal workers within the county	CCPD		Annual	Ongoing	#4 Education and Awareness Project
ICS Training	Goal 3	Provide trainings regarding the Incident Command System (ICS)	OES		Ongoing	Ongoing	#4 Education and Awareness Project
Local Emergency Planning Committee Presentations	Goal 3	Presentations for LEPCs, Coordinate with state for hazard training	OES		Ongoing	Ongoing	#4 Education and Awareness Project

Project Name	Goal(s) Addressed	Strategy	Lead Agency	Funding Source	Status	Progress	Mitigation Category
Trainings for Fire Departments	Goal 3	Training with Fire Dept. Hazard weather training, HAZMAT awareness in hazard operations training, ARHC HAZMAT	OES		Ongoing	Ongoing	#4 Education and Awareness Project
Trainings for County Animal Response Team	Goal 3	CART (county animal response team) trainings, for disaster response trailer for animal housing	OES	State Grant Funding	Ongoing	Ongoing	#2 Structure and Infrastructure
Purchase of CART Trailer	Goal 3	CART trailer acquired to house animals in shelter	OES		2011	Complete	#2 Structure and Infrastructure
Create a mobile command station	Goal 3	Converting old county bookmobile into mobile command station	OES		2020	Complete	#2 Structure and Infrastructure
Continue trainings for Office of Emergency Services Staff	Goal 3	Ongoing trainings for OES staff (communications, HM, disability awareness)	OES		Ongoing	Ongoing	#4 Education and Awareness Project
Upgrade County Servers	Goal 3, 5	Upgrade servers in OES facility, county's main servers are housed at OES	OES		2020	Complete	#2 Structure and Infrastructure

Project Name	Goal(s) Addressed	Strategy	Lead Agency	Funding Source	Status	Progress	Mitigation Category
HAZMAT truck purchase	Goal 3	HAZMAT truck to pull trailers (fire investigation)	OES		2013	Complete	#2 Structure and Infrastructure
Purchase Fire Investigation Trailer	Goal 3	Fire investigation trailer purchased for use in Clinton County	OES			Complete	#2 Structure and Infrastructure
Flood Mitigation Supply Trailer Purchase	Goal 3	Flood mitigation supply trailer to be used to respond to flood events in Clinton County	OES			Complete	#2 Structure and Infrastructure
Upgrade Radio Infrastructure	Goal 3	Upgraded radio infrastructure from analog to digital (800MHz system)	OES			Complete	#2 Structure and Infrastructure
Salt storage shed upgrades	Goal 5, 8	Beekmantown water system and salt storage shed upgrades. Prevent future contamination of drinking water wells from the former uncovered salt storage shed.	CCHD/ Town of Beekmantown		2020	Complete	#2 Structure and Infrastructure, #3 Natural Systems Protection
Salt storage shed upgrades	Goal 8	Upgraded salt storage shed to prevent future contamination of drinking water wells.	CCHD/ Town of Champlain		2018	Complete	#2 Structure and Infrastructure, #3 Natural Systems Protection

Project Name	Goal(s) Addressed	Strategy	Lead Agency	Funding Source	Status	Progress	Mitigation Category
Berm installation	Goal 5, 6	Installed new berm at Underwood MHP to prevent future flooding of the mobile home park from the Saranac River	CCHD/ City of Plattsburgh		2019	Complete	#2 Structure and Infrastructure

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable the County to be fully functional during times of disasters. Medium and low projects are to improve other functions of the county and address actual residents of the county. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost of several projects has been determined and included in the table below. Other mitigation projects have estimated the costs of these projects. The potential cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,00. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

NEW HAZARD MITIGATION PROJECTS FOR THE 2021 CLINTON COUNTY HAZARD MITIGATION PLAN									
Project Name	Goal(s) Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe	Funding Source	Priority	Mitigation Technique Category
Regular trainings for Code Enforcement Officers	Goal 2, 7	Establish regular meetings with code enforcement officers to provide training and encourage coordination/ collaboration	Flood	CCHD	L	2021-2025	Annual Budget		4. Education and Awareness Projects
FEMA map updates trainings	Goal 6, 7	Provide training to local code enforcement officers once FEMA maps are released	Flood	CCPD and DEC	L	2021	Annual Budgets		4. Education and Awareness Projects

Project Name	Goal(s) Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe	Funding Source	Priority	Mitigation Technique Category
Upgrade Terry Mountain Access Rd	Goal 3	Upgrade Terry Mountain Access Rd, to CCOES emergency radio equipment to prevent washout (coordinate with Essex County- owns tower). 1159 Peasleeville Rd.	Flood	OES, CCPD	H-\$200,000	2021-2025	CC Highway Dept.	High	2. Structural and Infrastructure Projects
Backup generator for county government	Goal 3	County government building backup generator	All-hazards	CCPD	TBD	2021-2025	TBD		2. Structural and Infrastructure Projects
Debris management plan development	Goal 3, 5	Develop specific debris management plan with local municipalities	All-hazards	OES	L	2021-2025	Annual Budget		1. Local Plans and Regulations
County debris management plan development	Goal 5	Continue to work on county debris management plan and hazard mitigation plan	All-hazards	OES		2021-2025	FEMA Grants		1. Local Plans and Regulations

Project Name	Goal(s) Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe	Funding Source	Priority	Mitigation Technique Category
Upgrade local government radios and pagers	Goal 3	Local government radios and pagers to improve communications during emergency events	All-hazards	OES, CCPD	H	Present and Ongoing	TBD		1. Local Plans and Regulations
Salt storage shed upgrade	Goal 1, 5, 8	Upgrade salt storage sheds throughout the county	All-hazards, Severe Winter Storms	CCHD/ Town of Saranac, Dannemora, Clinton, Black Brook	H	Present and Ongoing	TBD		2. Structural and Infrastructure Projects
Drinking water reservoir upgrade study	Goal 1, 5, 8	Upgrade the City of Plattsburgh drinking water reservoir. Investigate converting source from surface to groundwater wells, current dam used to retain surface water is aging and vulnerable to earthquake damage.	Flood, Earthquakes	CCHD/ City of Plattsburgh	\$5,000,000	12 Months	NYS Water WIIA	High	2. Structural and Infrastructure Projects

Project Name	Goal(s) Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe	Funding Source	Priority	Mitigation Technique Category
Water Quality Strategy	Goal 1, 7	Implement a Water Quality Strategy for the county which will involve the coordination of county and municipal entities to manage various water bodies in the county.	Flood	CCHD	TBD	Present and Ongoing	DEC		1. Local Plans and Regulations
Tappin Road bridge replacement.	Goal 5	Replace the bridge on Tappin Road that crosses the Great Chazy River.	Flood	CC Highway Department/ Town of Mooers	H	2021-2025	Bridge NY		2. Structural and Infrastructure Projects
Harney Bridge Road bridge replacement	Goal 5	Replace the Harney Bridge Road bridge that spans the Saranac River.	Flood	CC Highway Department/ Town of Plattsburgh	H	2021-2025	Bridge NY		2. Structural and Infrastructure Projects

Project Name	Goal(s) Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe	Funding Source	Priority	Mitigation Technique Category
Investigate structural safety of UVM-Champlain Valley Physicians Hospital (CVPH)	Goal 3, 5	Reduce risk of earthquake damage to UVM-CVPH as most of this regional critical care facility was built in 1925	Earthquake	Clinton County Planning Department, Office of Emergency Services				High	2. Structural and Infrastructure Projects

CITY, TOWN, AND VILLAGE FILES

Town of Altona

Introduction:

The Town of Altona, incorporated in 1857, is located in the north-central portion of the county. It is bordered to the north by the town of Mooers, to the west by the town of Ellenburg, to the south by the towns of Dannemora and Beekmantown, and the east by the town of Chazy. The western part of the town is located within the Adirondack Park boundary; however, the town is excluded from the park. The Great Chazy River runs diagonally through the town from Southwest to Northeast, and the Little Chazy River runs through the Southeastern portion of the town's area.



The town of Altona is home to the Flat Rock State Forest, a 1,931-acre property that features sandstone pavement barrens and Jack Pine forests. The park was the site of a devastating wildfire in 2018 which covered over 328-acres and required a highly coordinated effort to extinguish. Miner Lake State Park is also within the municipal bounds. Ganienkeh Territory, an independent Mohawk state, manages a popular 9-hole golf course located on Rand Hill Road nearby.

Historically, the McGregor Powerhouse located in the town of Altona on the Great Chazy River was built by William H. Miner to provide hydroelectric power to the region. The dam was one of the largest ever constructed in the north county and was only used for a seven-year period. The McGregor Powerhouse still stands today and can be seen from Devil's Den Road. Currently there is wind power being generated in the Town of Altona. There are two dozen windmills located between the Military Turnpike and Rand Hill Road.

The Town of Altona is also the location of the Altona Correctional Facility located at 555 Devils Den Road. It is a medium security facility which opened in 1983 and has a capacity of 512. Previously the building was Altona Central School.

The geography of the town is relatively flat, and it is a mixture of forest, rural housing, industrial, and agricultural land uses. The average elevation of the town is 915' with the town's center being around 636'. The higher elevations are in the western portion of the town.

TOWN OF ALTONA TABLE OF FACTS	
Land Area	101.34 sq. miles (64,857.6) acres
Incorporated Villages	N/A
Hamlets	Alder bend, Altona, Crowley Corners, Dannemora Crossing, Forest, Irona, Jericho, Purdy's Mills, Robinson
2010 Population Census	2,887
Population Density	28.4 people/sq. mile
Governance	Supervisor and Town Council
Total Assessed Valuation	\$150,225,600
Highest Elevation	915'
Largest Lake	Miner Lake
Rivers	Great Chazy River, Little Chazy River
Dams	2
Bridges	13
Interstate Highway	N/A
State Routes	190, 11
Land Classified: Agricultural	5,545.9 acres
Land Classified: Industrial	N/A
Land Classified: Residential	17,834 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Altona Volunteer Fire Department
Schools	N/A
Railroads	N/A
Interstate Bridge	N/A
Largest Employers	Farming, NAC School District, Altona Correctional Facility, and Rainbow Banquet Hall
Law Enforcement	N/A
Correctional Facility	Altona Correctional Facility
Power Utility Provider	NYSEG
Water Supply Sources	Miner Lake, Private Wells
Emergency Shelters	Town Hall
Critical Facilities	Fire Station, Emergency Operation Center, Critical Vehicles and Equipment Storage

Planning Process:

A meeting was held December 5th, 2019 with town officials and staff to obtain the information for the updated plan.

Capability Assessment:

The Town of Altona has several planning mechanisms in place.

TOWN OF ALTONA PLANNING DOCUMENTS	
Document	Notes
Floodplain Regulations	FIRM are being updated
Zoning Regulations	-Addresses subdivisions and historic preservation
Comprehensive Land Use Plan	Adopted in the 1990s
Open Space Management Plan	Greenspace Plan
Building & Fire Codes	Use NYS established codes

The town is managed by a Town Supervisor and a Town Council. The Town Supervisor serves as the emergency manager. For planning support with land use and land development the Town relies on Clinton County Planning Department. They hire engineers as needed for projects. There is a code enforcement officer that provides supports for zoning and as the Town Clerk. Land surveyors are hired on an as needed basis. The NY Department of Environmental Conservation provides supports of scientific expertise regarding community hazards. Grant Writers and fiscal support staff are hired as needed. Clinton County provides GIS supports.

The Town of Altona uses various sources of funding for projects and programmatic implementation. For capital improvement programming they use Town funds. Community Development Block Grants (CDBG) have been used for housing upgrades, and to replace mobile homes. Friends of the North Country helped provide grant writing supports for the CDBG grants. Special taxes fund the Fire Department and Lighting District of the town. There are also shared services between the Town of Altona with other towns and with Clinton County.

Altona participates in Firewise Communities as part of their Education and Outreach. This program addresses wildfire risk and risk management and involves a fire assessment that is to be updated every 5 years.

A self-assessment in four areas was completed for the town. Planning and regulatory capabilities, administrative and technical capabilities, financial, and education and outreach were all ranked as moderate. Lack of resources are addressed with either hiring supports or utilizing their partnership with the Clinton County Government.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF ALTONA CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	No	No	Yes	
Critical Vehicle and Equipment Storage	No	No	Yes	
Emergency Operations Center	No	No	Yes	
Utility/Power Generating Stations (Turbines)	No	No	-	

The town hall is the Emergency Operations Center and there is currently a grant in progress to upgrade. The town routinely removes brush from electric substations to prevent wind damage, and the utility and power stations are designed to withstand lightning strikes. The town does not have medical facilities, schools or daycare, not do they provide public utilities to residents. There are no drug and alcohol treatment facilities, nor are there any homeless shelters within the town. Tier 2 facilities do not exist in the Town of Altona.

Two locations within the town have been designated areas for temporary housing needs in the event of a disaster.

TOWN OF ALTONA TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Feinberg Park, 385 Devil’s Den Road. (58 Campsites)	Public	N	Y	Y	Y
Plattsburgh RV Park, Route 9	Private	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Altona. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured

structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are no repetitive loss structures within the Town of Altona.

Altona will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF ALTONA FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
0	7	4	\$60,732

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF ALTONA HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High			
	Med	Dam Failure	Floods	High Winds and Tornadoes
	Low			Avalanche, Drought, Earthquake, Extreme Cold, Extreme Heat, Hail Storms, Hurricanes, Ice Storms, Landslides, Seiche Flood, Severe Winter Storms, Thunderstorms, Transportation, Wildfire

Potential Loss:

Potential loss was calculated for the Town of Altona. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the

number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 8 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture 200 Residential 300 Vacant Lands
- 400 Commercial 500 Recreation/ Entertainment 600 Community Services
- 800 Public Services 900 Forest, Conservation
Lands, and Parks

TOWN OF ALTONA POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value (\$)	Number of Impacted Structures	Potential Loss (\$)
100	5545.9	17	\$1,941,300	1.7	\$194,130
200	17834.03	1075	\$64,427,100	107.5	\$6,442,710
300	17504.91	75	\$650,100	7.5	\$65,010
400	79.23	21	\$4,679,200	2.1	\$467,920
500	283	2	\$742,100	0.2	\$74,210
600	481.21	9	\$35,333,000	0.9	\$3,533,300
800	102.9	2	\$156,300	0.2	\$15,630
900	21888.67	7	\$114,400	0.7	\$11,440
Totals	63719.85	1208	\$108,043,500	120.8	\$10,804,350

TOWN OF ALTONA STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	6	\$419, 500
400	2	\$2,458,000
Total	8	\$2,877,500

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Altona reviewed the county project list from the 2014 plan. They have included a status of efforts in Altona to advance on these county mitigation project. Projects listed in the 2014 plan specific to Altona were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Altona as the plan was being updated in 2020.

TOWN OF ALTONA 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Prevent a washout of bridge on Devil's Den Road	Replace with a larger culvert or bridge	Town executives, county/local DPW	H	ST	M	Bridge replaced not upsized		2011-water on bridge Spring/summer 2011 replaced
Reduce impact of flooding	Prevent Great Chazy River from overflowing banks	Dredge the river channel	Town executives, county/local DPW	H	I	H		None	
Reduce impact of wildfires	Maintain alter list of area of jack Pines	Compile and maintain list for notification	Town executives, county/local DPW	L	I	H	Ongoing	Updated annually	

TOWN OF ALTONA ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Power House Bridge	Reduce impact of flooding	Work done on river, stabilized and shored up banks post Irene.	Flood	Town executives, county/local DPW		Completed			#3 Natural Systems Protection

TOWN OF ALTONA MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Upsize Bridge Replaced in 2011	Reduce impact of flooding	Upsize bridge on Devil’s Den Road to prevent washout	Flooding	Town executives, county/local DPW	H	2021-2025	NY Bridge	H	#2 Structural and Infrastructure Projects
2. Bridge on Barnabee Road	Reduce impact of flooding	Replace 2 undersized culverts with box culverts in Barnabee Road	Flooding	Town Supervisor	H	2021-2025	NY Bridge	H	#2 Structural and Infrastructure Projects
3. Town Hall Roof/ Shelter Capacity	Increase capacity of Town Hall to function as an emergency shelter	Replace roof of town hall and increase its capacity to function as an emergency shelter during emergency events	All	Town Supervisor	H	2021-2025		H	#2 Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
4. Purchase new loader	Increase town capacity to respond, recover and mitigate disasters	Purchase new loader to allow town to perform tasks associated with disaster response	Flood, Wildfire, Ice Storm	Town Supervisor	M	2021-2025	Town Budget	H	#2 Structural and Infrastructure Projects
5. Purchase new bulldozer	Increase town capacity to respond, recover and mitigate disasters	Purchase a new bulldozer to allow town to perform tasks associated with disaster response	All	Town Supervisor	M	2021-2025	Town Budget	H	#2 Structural and Infrastructure Projects
6. Purchase generator for Town Hall	Increase capacity of Town Hall to function as an emergency shelter	Purchase a generator for Town Hall to enable function as an emergency shelter	All	Town Supervisor	L	2022	Town Budget	H	#2 Structural and Infrastructure Projects
7. Move gas/diesel supply	Increase capacity of Town Hall to function as an emergency shelter	Move gas/diesel supply from town garage to town hall to allow function as an emergency shelter	All	Town Supervisor	L	2022	Town Budget	H	#2 Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
8. Create sand pit	Reduce impact of winter storms/ weather	Town currently does not have a sand pit would determine best location for a sand pit	Severe winter storm, Ice storm	Town Supervisor	H	2021-2025	Town Budget	H	#2 Structural and Infrastructure Projects





















ArcGIS Maps for Town of Altona:

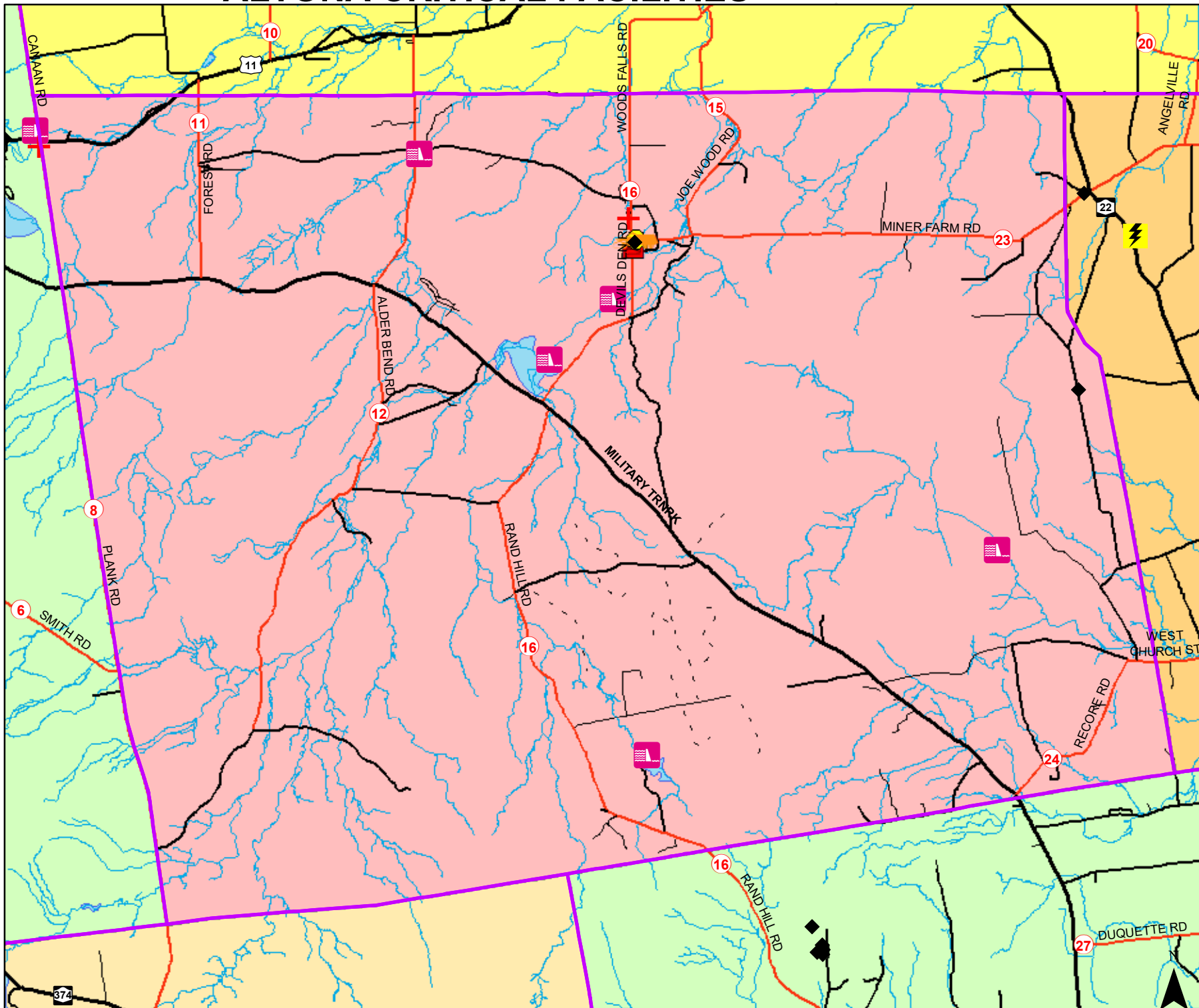
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

ALTONA CRITICAL FACILITIES





















LEGEND

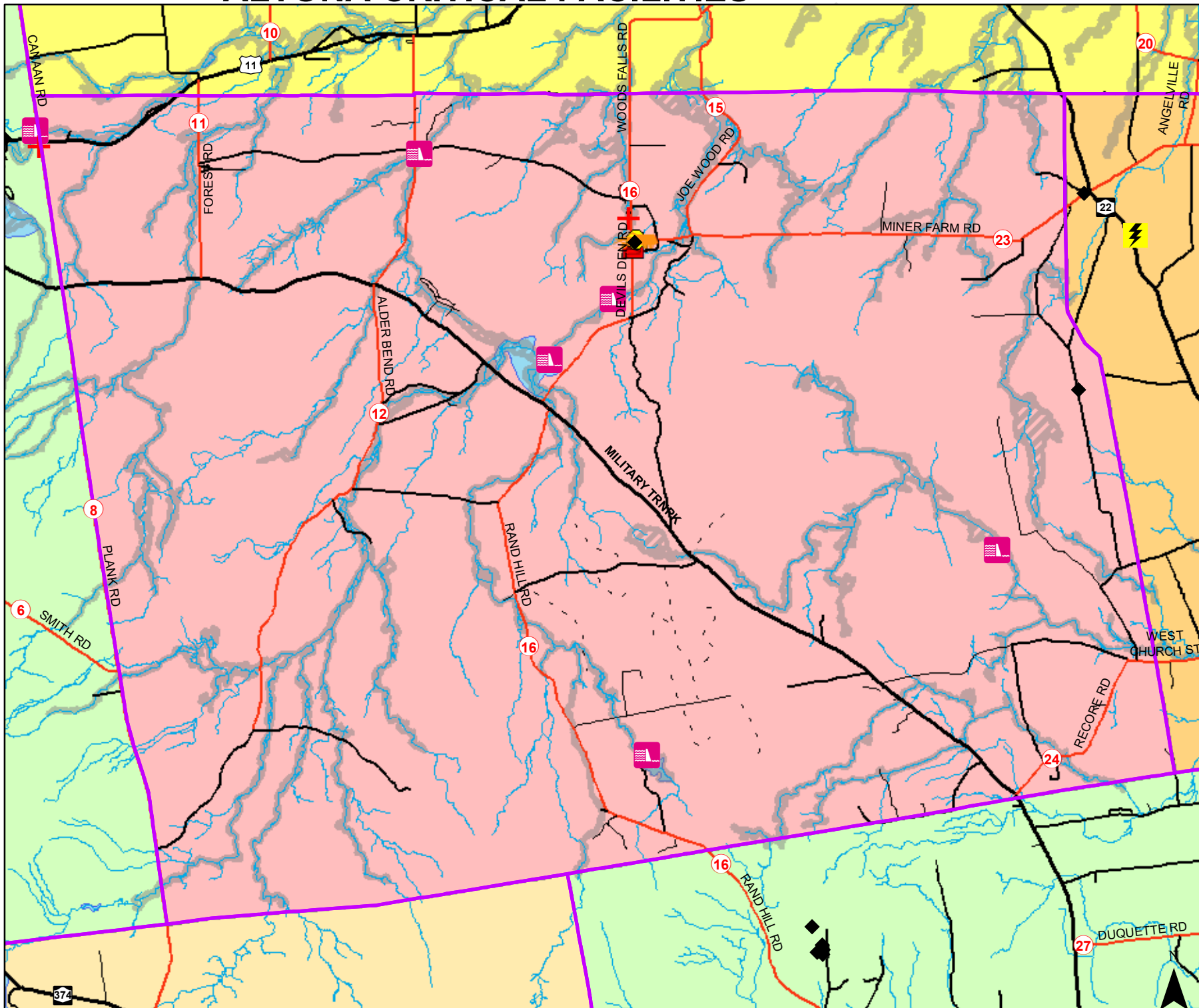
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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers



ALTONA CRITICAL FACILITIES

LEGEND

-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
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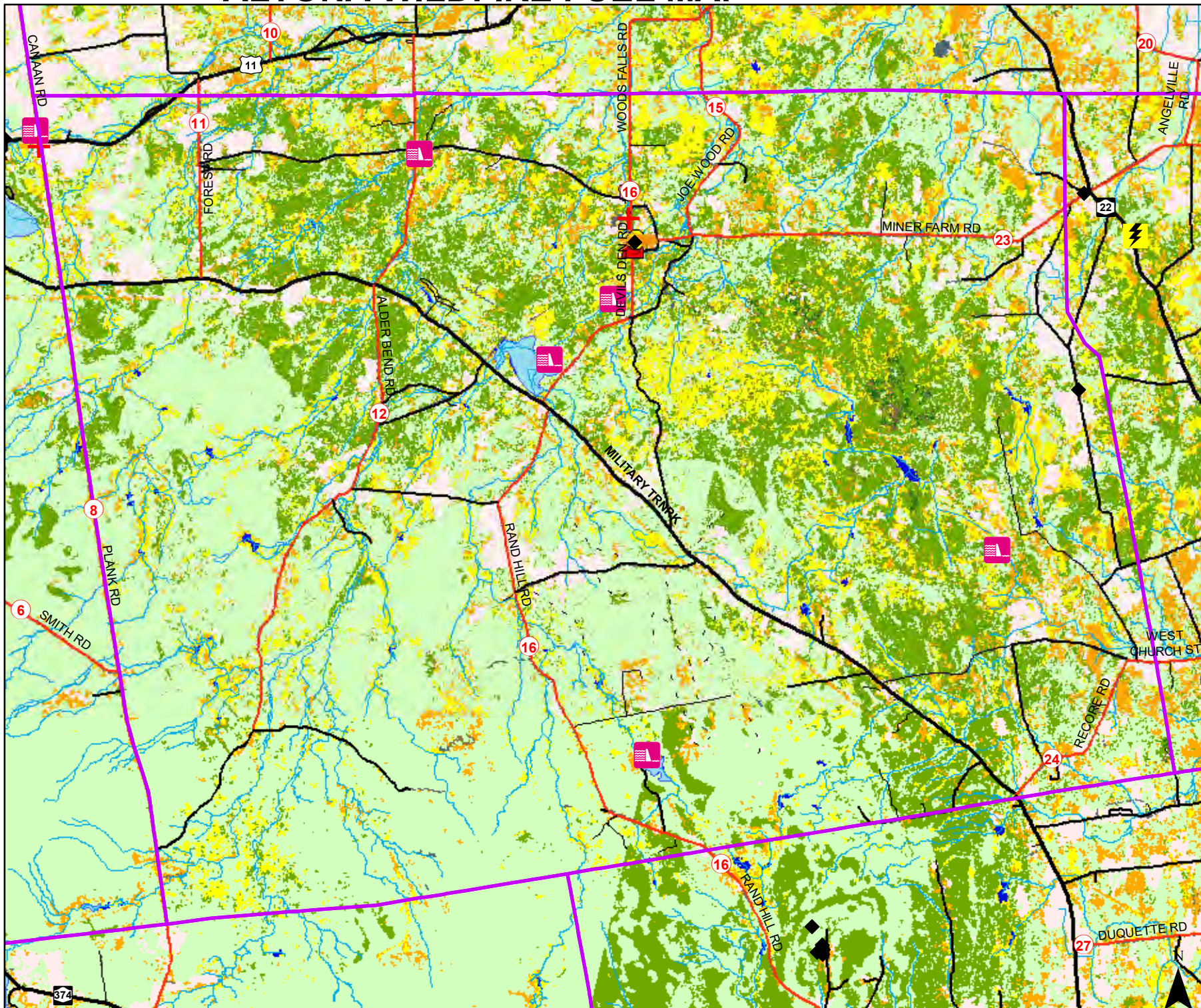
ALTONA WILDFIRE FUEL MAP

LEGEND

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
















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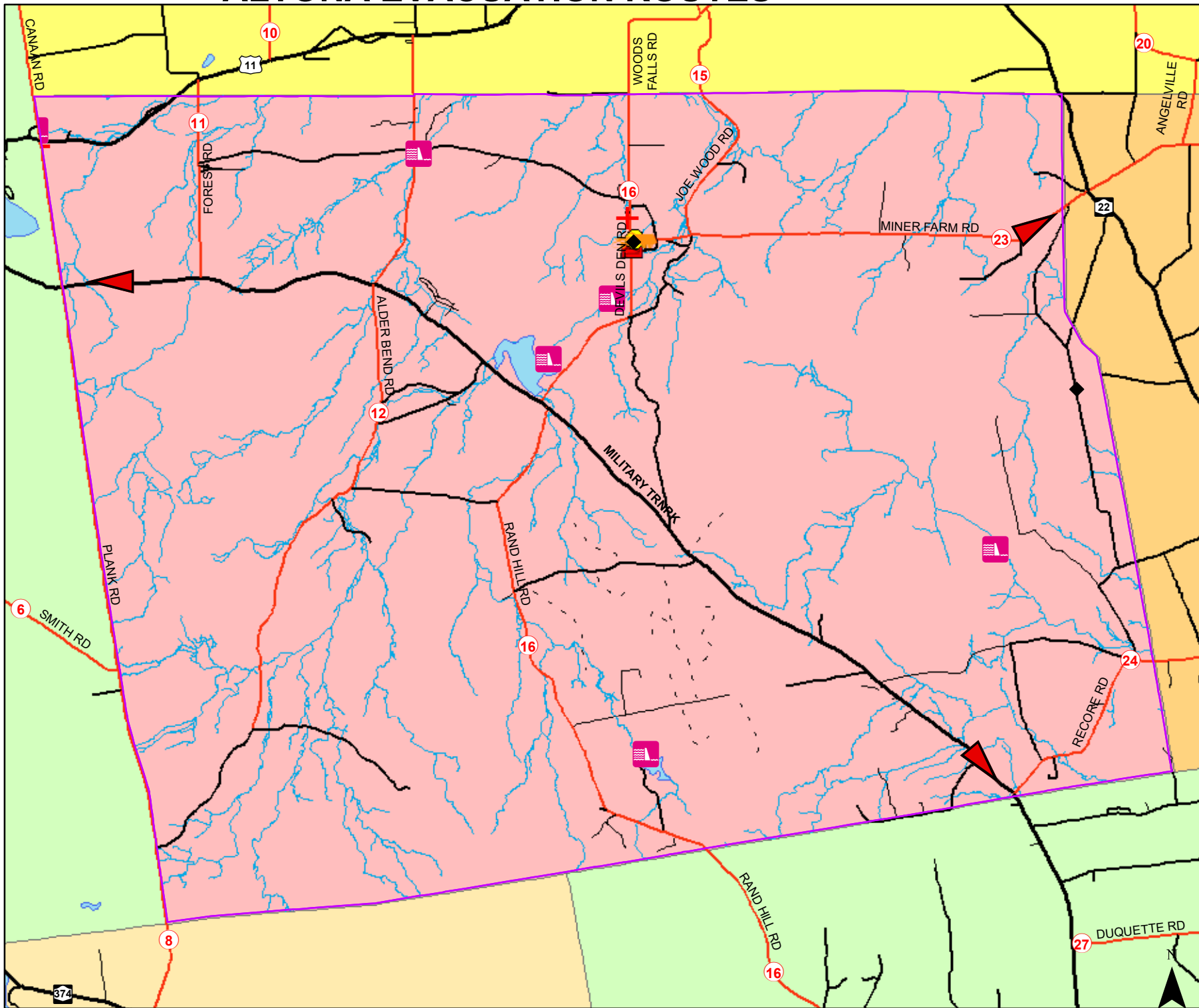
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-  FBFM9
-  FBFM10
-  Urban
-  Agriculture
-  Water
-  Barren
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers
-  Fire_Stations
-  Airstrip



ALTONA EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls



Town of AuSable

Introduction:

The Town of AuSable formed in 1839 and forms the southeastern border of Clinton County. The town is named after the river that flows along its border and it means “of the sand.” It is bordered to the north by the Town of Peru and to the west by the Town of Black Brook, and to the south by Essex County. The town is bordered by Lake Champlain along its eastern edge. The AuSable River runs through the town and forms the majority of the border between the Town of AuSable and Essex County.



The Ausable Chasm Bridge is listed on the National Register of Historic Places that carries US Route 9 over the AuSable River. The historic steel arch bridge has a 222-foot length span and is approximately 40-feet wide. AuSable Chasm, a gorge carved out of Cambrian Era Potsdam Sandstone, is a popular tourism attraction located along the border of the town. The attraction boasts trails, river tours, an adventure trail, rock climbing, rappelling lantern tours, and a campsite. The North Star Underground Railroad Historical Association is also located in the town and preserves the history of the Champlain Line of the Underground Railroad.

There are several historic locations within the town, including Birmingham Falls, and New Sweden. The town also has a public access beach located along the shore of Lake Champlain. The former Village of Keeseville is located within the town boundaries as well, however, is considered a part of the Town of Chesterfield within Essex County.

The entire town is located within the Adirondack Park and as such must comply with park regulation and zoning. AuSable has a relatively hilly geography and a sandstone gorge within its bounds. The high point of the town is 1,415 feet on the eastern slope of Flat Mountain in the western portion of the town. The land uses in the town are agricultural, commercial, industrial, recreation, residential, and wild or forested conservation lands.

TOWN OF AU SABLE TABLE OF FACTS	
Land Area	43.9 sq. miles, 28,096 acres
Incorporated Villages	N/A
Hamlets	Clintonville, Harkness, Keese Corners, Rogers, Thomasville, Union
2010 Population Census	3,146
Population Density	71.7 people/sq. mile
Governance	Supervisor and Town Board
Total Assessed Valuation	\$188,621,799
Highest Elevation	1,415' Flat Mountain (Eastern Slope)
Largest Lake	Adjacent to Lake Champlain
Rivers	AuSable River
Dams	2
Bridges	10
Interstate Highway	I-87
State Routes	9, 9N< 22
Land Classified: Agricultural	1,832.5 acres
Land Classified: Industrial	346.8 acres
Land Classified: Residential	7,820.8 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Keeseville Volunteer Fire Department
Schools	Ausable Valley Middle and High School, Keeseville Elementary School
Railroads	N/A
Interstate Bridge	N/A
Law Enforcement	State Police Department
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	AuSable Heights Water & Sewer, Private Wells
Emergency Shelters	Methodist Church, Keeseville Elementary, Keeseville Fire Department
Critical Facilities	Fire Station, Critical Vehicles and Equipment Storage, State Police Station

Planning Process:

A meeting was held on December 13th, 2019 with town officials and staff to obtain the information for the updated plan.

Capability Assessment:

The Town of AuSable has several planning mechanisms in place.

TOWN OF AU SABLE PLANNING DOCUMENTS	
Document	Notes
Floodplain Regulations	FIRM are being updated
Zoning Regulations	
Subdivision Regulations	
Comprehensive Land Use Plan	
Open Space Management Plan	
Stormwater Management Plan	
Historic Preservation Plan	
Farmland Preservation	County level plan
Building & Fire Code	Use NYS established codes

The town is managed by a Town Supervisor and a Town Board that consists of four councilmen. The Town Supervisor serves as the emergency manager. The town of AuSable has a planning board that is reviewed by the county. They hire engineers as need. They have a building inspector that is trained in building/infrastructure construction practices. There is a Floodplain Manager/Code Enforcement Officer. They hire land surveyors as needed. The NYS DEC provides supports for scientific expertise relating to community hazards. Clinton County provides GIS support. Grant writers and extra fiscal staff are hired as need.

The Town of AuSable uses various sources of funding for projects and programmatic implementation. Community Development Block Grants (CDBG) have been used to repair the Civic Center roof. Water and sewer fees are used to maintain the infrastructure of those systems. There are shared service agreements with neighboring towns, and the county.

AuSable participates in natural disaster and safety related school programs. They provide annual outreach to residents in their sewer bills. They also perform outreach related to riparian work along the AuSable River.

A self-assessment in four areas was completed for the town. Planning and regulatory capabilities was ranked as high. Administrative and technical capabilities, financial, and education and outreach were all ranked as moderate. Lack of resources are addressed with either hiring supports or utilizing their partnership with the Clinton County Government.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF AU SABLE CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Police Station	No	No	No	
Fire Station	No	No	Yes	
Critical Vehicle and Equipment Storage	No	No	Yes	
Emergency Operations Center	No	No	Yes	Town Hall
Substations	No	No	-	
Wastewater Treatment	Yes	Yes	Yes	Flooded during TS Irene

The town hall is the Emergency Operations Center, and also serves as the communications center. There are no medical facilities, nursing homes or blood banks in the town. An ARC facility serves as an emergency shelter and has a generator. The public and private utilities have generators. There are no homeless shelters, nor are there any drug and alcohol treatment facilities. There are no Tier 2 waste storage facilities within the Town of AuSable.

One location within the town has been designated for use as temporary housing for displaced residents:

TOWN OF AU SABLE TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Civic Center, 1790 Main Street	Public	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of AuSable. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 2 repetitive loss structures in Ausable.

AuSable will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF AU\$ABLE FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
2	7	16	\$402,499

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF AU\$ABLE HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High			Extreme Cold, Floods, Hail Storms, High Winds and Tornadoes, Ice Storms, Severe Winter Storms
	Med			
	Low		Earthquake	Avalanche, Dam Failure, Drought, Extreme Heat, Hurricanes, Landslides, Thunderstorms, Transportation, Wildfires

Potential Loss:

Potential loss was calculated for the Town of AuSable. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture 200 Residential 300 Vacant Lands
- 400 Commercial 500 Recreation/ Entertainment 600 Community Services
- 700 Industrial 800 Public Service 900 Forest, Conservation
Lands, and Parks

TOWN OF AU\$ABLE POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	1,832.5	6	\$5,753,200	0.6	\$575,320
200	7,820.76	1,136	\$96,475,900	113.6	\$9,647,590
300	8,868.34	48	\$664,900	4.8	\$66,490
400	663.02	66	\$8,792,300	6.6	\$879,230
500	206.8	4	\$598,800	0.4	\$59,880
600	366.02	25	\$32,345,900	2.5	\$3,234,590
700	346.76	1	\$28,900	0.1	\$2,890
800	134.8	9	\$9,129,998	0.9	\$913,000
900	3,329.94	3	\$22,100	0.3	\$2,210
Total	23,568.94	1,298	\$153,811,998	129.8	\$15,381,200

TOWN OF AU SABLE STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	38	\$3,390,300
300	5	\$48,600
400	13	\$3,202,200
800	1	\$975,000
Total	57	\$2,877,500

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

AuSable reviewed the county project list from the 2014 plan. They have included a status of efforts in AuSable to advance on these county mitigation project. Projects listed in the 2014 plan specific to Ausable were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by AuSable as the plan was being updated in 2020.

TOWN OF AU SABLE 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce the threat of damages to property and infrastructure by keeping road open for residents and emergency vehicles.	Monitor water levels and regularly remove limbs and debris in the area of Connell Road and Fred Thew Road	Town executives, county/local DPW	H	Ongoing LT	M	Ongoing effort	Ongoing	Beaver dams
Reduce impact of flooding	Reduce threat of damages to property and infrastructure	Increase size of culverts along, Hill Street, Cedar Court, and School Street	Town executives, county/local DPW	H (100K for all)	LT	M	Upper Hill St complete	In Progress	Cedar Court and School Street still to be completed
Reduce impact of flooding/subsidence	Reduce the threat of damages to property and infrastructure	Modify the direction of underground drainage beginning on Spring Street through Clinton St	Town executives, county/local DPW	H (\$1M)	LT	L	N/A	N/A	Keeseville is no longer a village
Reduce the impact of flooding/ earthquake	Reduce the threat of damaged to property and infrastructure from erosion of wall	Coordinate with ACOE to repair/ replace wall along the AuSable River through the center of the village	Town executives, county/local DPW	H (\$20M)	LT	L	N/A	Essex County project	

TOWN OF AUSABLE ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Implemented sewer plant cleaning program				Town Sewer Dept.	L	Ongoing	Town Budget		#2 Structure and Infrastructure
Property Buyouts	Reduce impact of flooding	Buyout of one property along Rt.9 post TS Irene	Flooding	County Planning	L	Completed	FEMA	H	#1 Local Plans and Regulations
Replaced culvert	Reduce impact of flooding	Replaced culvert on Signor Rd.	Flooding	Town Highway Dept.	L	Completed	Town Budget	M	#2 Structure and Infrastructure
Replaced culvert	Reduce impact of flooding	Replaced culvert on Mitchell Rd.	Flooding	Town Highway Dept.	L	Completed	Town Budget	M	#2 Structure and Infrastructure
Replaced culvert	Reduce impact of flooding	Replaced culvert on Allen Hill Rd.	Flooding	Town Highway Dept.	L	Completed	Town Budget	M	#2 Structure and Infrastructure

Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Replace culvert	Reduce impact of flooding	Replaced Culvert on Thomasville Rd.		Town Highway Dept.	L	Complete	Town Budget		#2 Structure and Infrastructure
Elevate structures	Reduce impact of flooding	Elevate structures in Little Peru		County Planning	L	Complete	FEMA		#2 Structure and Infrastructure
Grant study of high-water table	Reduce impact of flooding	Study of Cedar Ct, high-water table.	Winter/Spring 2-6" of water on road.	Town of Ausable	H	Not Complete	?		#2 Structure and Infrastructure
Implemented a comprehensive plan		Created and adopted plan for use in town.	All	Town of Ausable	L	Ongoing (every 5 years)	DOS		#1 Local Plans and Regulations
Update zoning regulations		Updated zoning regulations for use in town	All	Town of Ausable	L	As needed	DOS		#1 Local Plans and Regulations

Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Purchase equipment		Purchase 1 loader and 2 plows for use in disaster relief	All	Town of Ausable	H		Town Highway Dept. Budget	H	
Brush removal along roadside		Protect powerlines	Wind, Winter Storm, Ice Storm	NYSEG	None to Town	Ongoing	NYSEG		#2 Structure and Infrastructure
Ditching along shoulders				Town Highway Dept.	L	Ongoing	Town Highway Dept. Budget	M	#2 Structure and Infrastructure
Dig culverts		Dig culverts on School St, and Hill St.	Flood	Town Highway Dept.	L	Ongoing	Town Budget	M	#2 Structure and Infrastructure
Paved roads		Paved sections of Lakeside, water plant, Pine Tree Dr., Plains Rd.		Town Highway Dept.	L	Ongoing	Town Budget	M	#2 Structure and Infrastructure

Section 6

Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Purchase vacuum truck		Purchased vacuum truck in cooperation with Chesterfield	Floods	Town Highway Dept.	L	Complete	Town Budgets	M	#2 Structure and Infrastructure
Inspection and cleaning of dry wells.		Perform routine inspection and cleaning of dry wells in town	Fire	Town Fire Dept.	L	Ongoing	Town Budgets	M	#2 Structure and Infrastructure

TOWN OF AU SABLE MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Replace culvert on Connell Road	Reduce impact of flooding	Replace culvert on Connell Rd with box culvert.	Flooding	Town executives , county/ local DPW	M	2022	Town Budget	M	#2 Structural and Infrastructure Projects
2. Purchase Generator for Police Station	Increase capacity of police station to function in times of emergency	Purchase generator for police station (does not currently have one)	All	Town Supervisor	L	2022	Town Budget	H	#2 Structural and Infrastructure Projects
3. Use Facebook to reach out to public	Increase communication with residents	Expand education and outreach to citizens to increase public engagement related to natural hazards	All	Town Supervisor	L	Ongoing	Town Budget	H	#4 Education and awareness projects

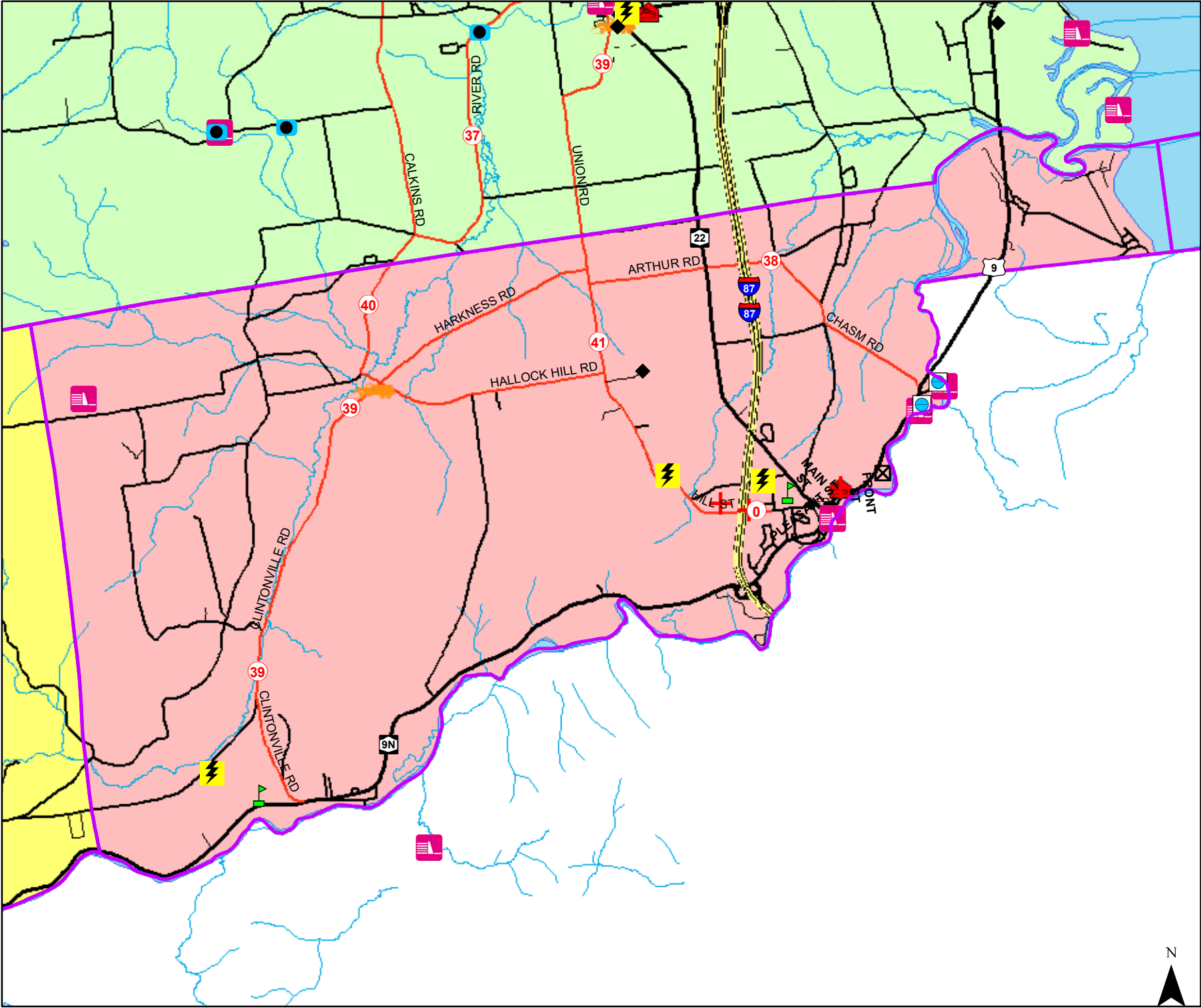
4. Sewer district repairs	Upgrade current sewer system and repair other sections of sewer system	Current sewer system is aging and outdates and results in sewage being released into the environment during flood and high precipitation events.	Flooding	Town executives , county/local DPW	H	Based on grant	CDBG	M	#2 Structural and Infrastructure Projects
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ArcGIS Maps for Town of AuSable:





















The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

AUSABLE CRITICAL FACILITIES























LEGEND

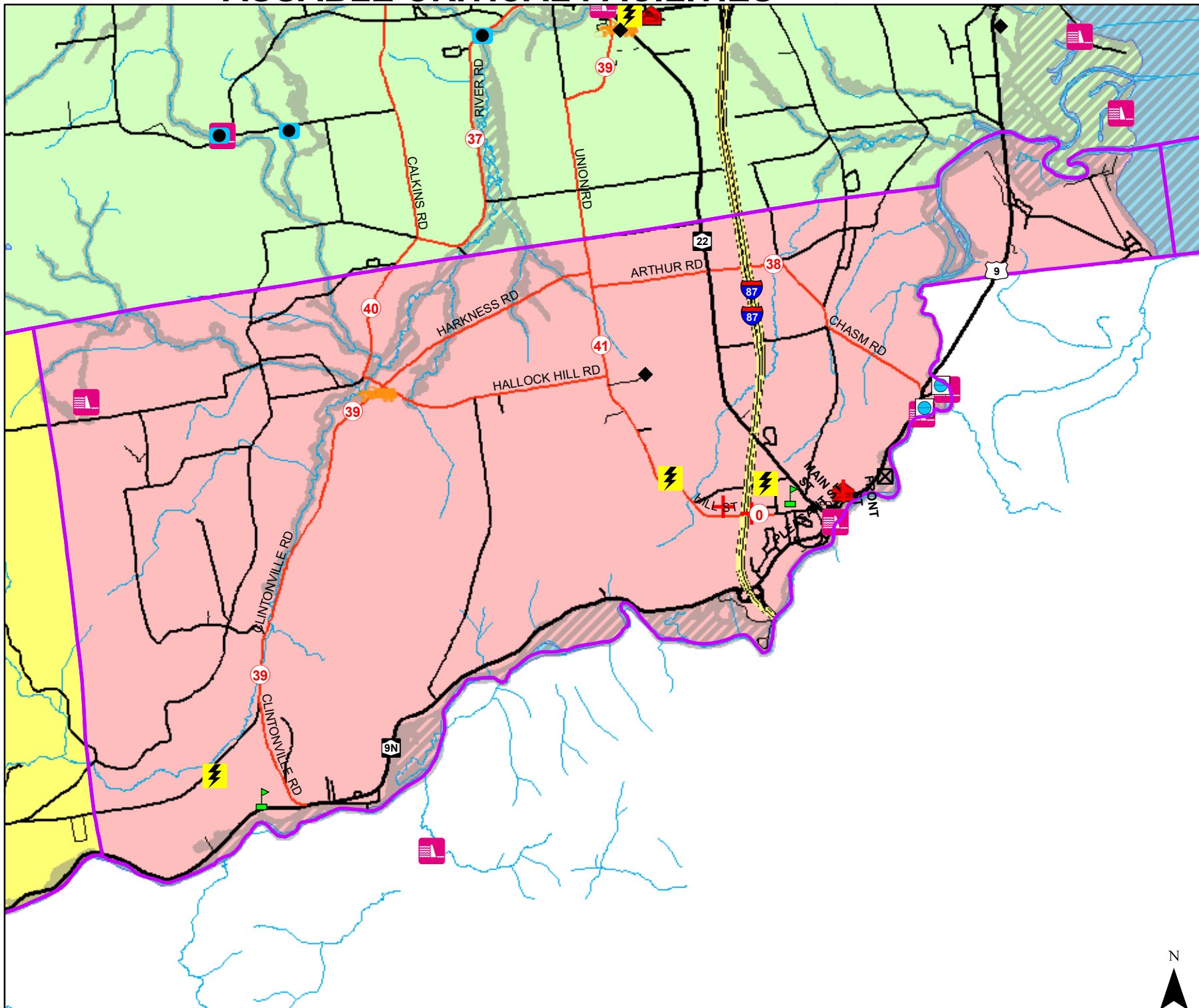
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-  Natural Gas
-  Hydro Generation
-  Flood Control Structure
-  Water Supply
-  Communications
-  Sewage Water TX
-  EOC Locations
-  Red Cross Shelters
-  Schools
-  Electric Substation
-  Dams2019
-  Police stations
-  Nursing Homes
-  Airport Terminal
-  Bus Station
-  Ferry Dock
-  Highway Garages
-  Town Municipal Halls
-  Health Centers



AUSABLE CRITICAL FACILITIES

LEGEND

-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers













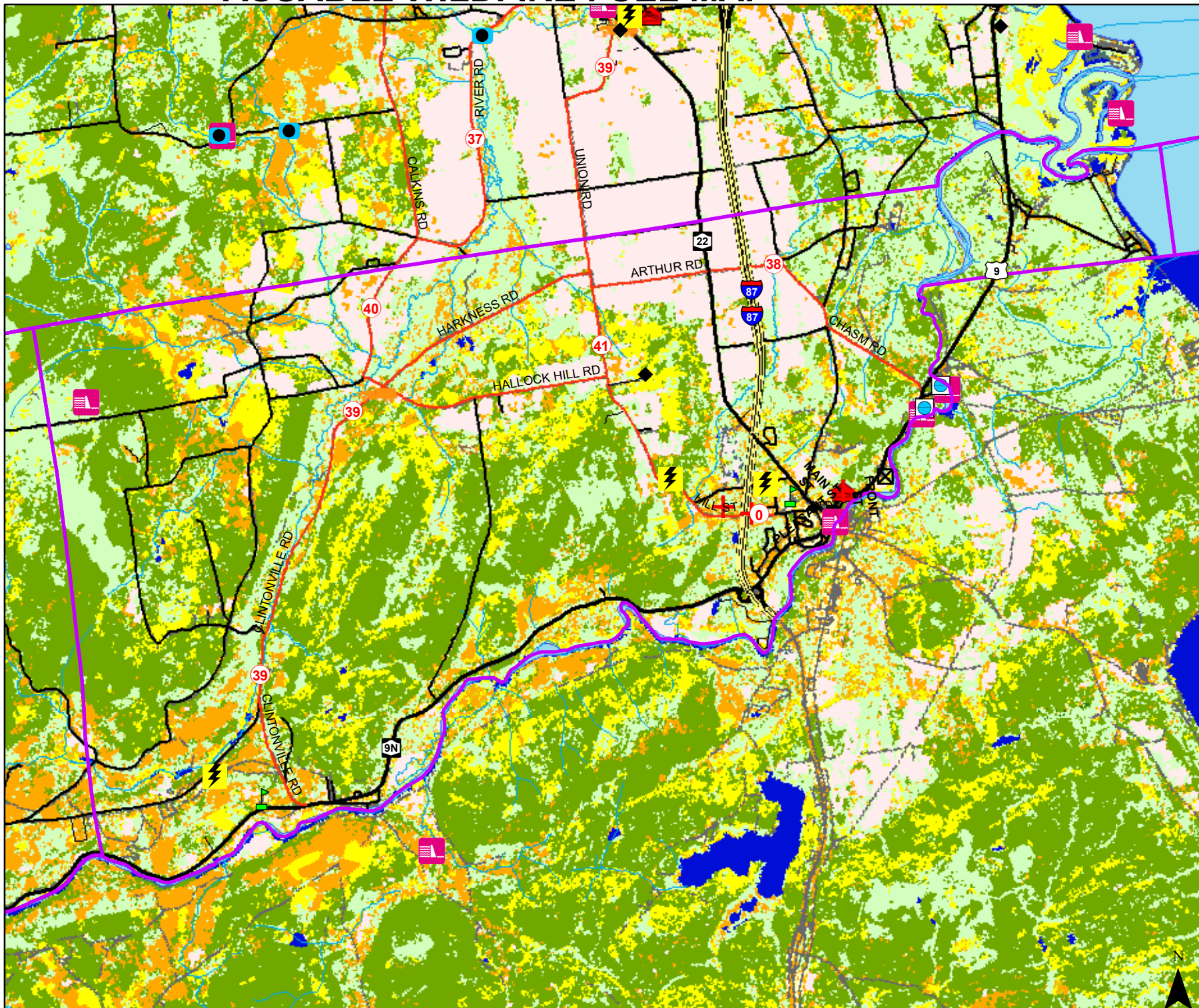
AUSABLE WILDFIRE FUEL MAP

LEGEND

us_110bfm13





















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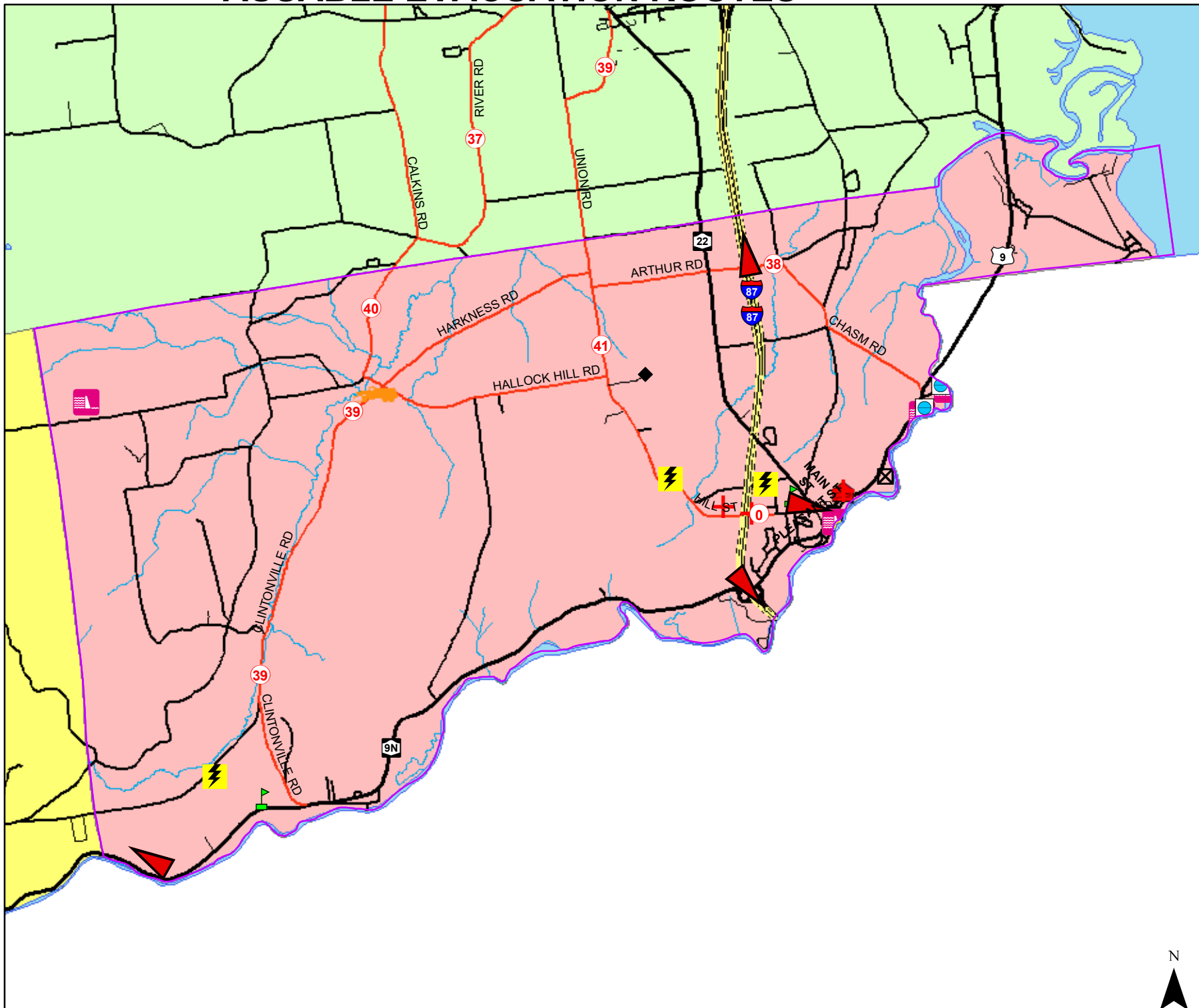
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-  FBFM9
-  FBFM10
-  Urban
-  Agriculture
-  Water
-  Barren
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers
-  Fire_Stations
-  Airstrip



AUSABLE EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls



Town of Beekmantown

Introduction:

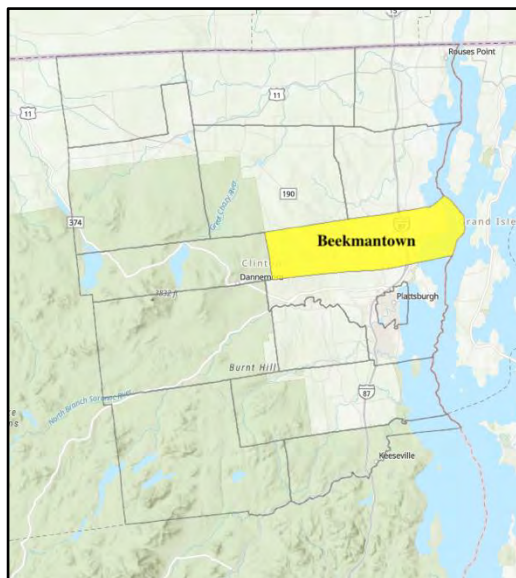
The Town of Beekmantown was formed in 1820 and is located in the central-eastern portion of the county. It is bordered to the east by Lake Champlain, the north by Altona and Chazy, the west by Dannemora, and the south by the Town of Plattsburgh. The western edge of the town is also bordered by the Adirondack Park. The Little Chazy River runs through a portion of the town.

Point Au Roche State Park, an 856-acre state park which includes a nature center, day use area, and a beach on the shores of Lake Champlain are located within Beekmantown. Boating and fishing are popular at these locations throughout the year.

There are two marinas located along Lake Champlain within the town boundaries. Mooney Bay Marina can accommodate up to 240 ships and is a full-service facility. Treadwellbay Marina and Resort can accommodate over 300 ships, is also a full-service facility.

Beartown ski area is a nonprofit membership corporation that is operated by a board of directors. The small ski area has a small lift, lighted trails, snow making, and snowshoe/cross country ski trails in addition to their downhill ski areas.

The geography of the town is relatively hilly, with elevations to the west being the highest. There is a mixture of forest, rural use, industrial, agricultural and residential uses within the town.



TOWN OF BEEKMANTOWN TABLE OF FACTS	
Land Area	69.6 sq. miles, 44,544 acres
Incorporated Villages	N/A
Hamlets	Beekmantown, East Beekmantown, Ingraham, Lawliss Corners, West Beekmantown
2010 Population Census	5,545
Population Density	79.7 people/sq. mile
Governance	Supervisor and Town Council
Total Assessed Valuation	\$433,570,504
Elevation	285'
Largest Lake	Located along Lake Champlain
Rivers	Little Chazy River
Dams	0
Bridges	5
Interstate Highway	I-87
State Routes	9, 22, 190
Land Classified: Agricultural	7,921.8 acres
Land Classified: Industrial	300.4 acres
Land Classified: Residential	13,664.8 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Beekmantown Volunteer Fire Department
Schools	Beekmantown Central School
Railroads	Can
Interstate Bridge	1
Law Enforcement	N/A
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Town of Plattsburgh (wells)
Emergency Shelters	Town Highway Garage
Critical Facilities	Fire Station, Town Garage,

Planning Process:

A meeting was held on December 18th, 2019 with town officials and staff to obtain the information for the updated plan.

Capability Assessment:

The Town of Beekmantown has several planning mechanisms in place.

TOWN OF BEEKMANTOWN PLANNING DOCUMENTS	
Document	
Hazard Mitigation Plan	Stormwater Management Plan
Comprehensive Emergency Management Plan	Natural Resource Protection Plan
Floodplain regulations	Economic Development Plan
Zoning Regulations	Historic Preservation Plan
Subdivision Regulations	Farmland Preservation
Comprehensive Land Use Plan	Building & Fire Code (NYS codes)
Open Space Management Plan	

The town is managed by a Town Supervisor and 4 Town Councilors. The Town Supervisor serves as the emergency manager. There is a Planning board and Zoning Board that provide planning expertise. The Health Department provides engineers as well as the town hiring them on an as need basis. There is a floodplain manager/code enforcement officer. The DEC provides scientists with expertise regarding community hazards. Clinton County provides GIS and grant writing supports.

The Town of Beekmantown uses several funding sources for projects and program implementation. Capital improvement programming funds were used to purchase equipment. Community Block Development Grants were used to rehab 6 homes. There is a special fire district tax within the town, as well as lighting district fees. Water is provided by the Town of Plattsburgh. There are also partnering arrangements with Plattsburgh, Schuyler Falls, as well as shared services with those municipalities and the county.

Beekmantown provides fire safety training in their local school as part of their Education and Outreach. There is also a consolidated district group for water and sewer.

A self-assessment in four areas was completed by the town officials. Planning and regulatory capabilities, administrative and technical capabilities, financial, and education and outreach were all ranked as high degree of capability. Any lack of resources would be addressed with either hiring supports, utilizing their partnership with the Clinton County Government, or their neighboring towns.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF BEEKMANTOWN CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	No	No	Yes	Beekmantown #1 had berms built in back
Critical Vehicle and Equipment Storage	No	No	Yes	
Emergency Operations Center	No	Yes	Yes	Town Hall Basement flooded due to overland flow and failed sump pump, replaced sump pump.
Utility/Power Generating Stations	No	No	-	3 locations: Durand Rd, Ashley Rd, and Burke Rd.

The town hall is the Emergency Operations Center as well as the communications center. There are no medical facilities, nursing homes, or blood banks within the town. Drinking water is provided by the Town of Plattsburgh and there is not wastewater treatment. There are no Tier 2 waste storage facilities located within the town.

Two locations within the town have been designated as temporary housing sites for displaced residents:

TOWN OF BEEKMANTOWN TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Rec Park (Behind Town Hall), Spellman Road.	Public	N	Y	Y	N
Town Highway Garage, Spellman Road	Public	N	Y	Y	N

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations

exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Beekmantown. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are no repetitive loss properties in Beekmantown.

Beekmantown will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF BEEKMANTOWN FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
0	18	12	\$174,912

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF BEEKMANTOWN HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Drought, Extreme Cold, Floods, Hail Storms, High Winds and Tornadoes, Hurricanes, Severe Winter Storms, Thunderstorms, Transportation (Truck)		
	Med			
	Low	Ice Storms, Seiche Floods, Transportation (Rail)		Avalanche, Earthquake, Extreme Heat, Landslides, Wildfires

Potential Loss:

Potential loss was calculated for the Town of Beekmantown. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

100 Agriculture	200 Residential	300 Vacant Lands
400 Commercial	500 Recreation/ Entertainment	600 Community Services
700 Industrial	800 Public Service	900 Forest, Conservation Lands, and Parks

TOWN OF BEEKMANTOWN POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	7,921.8	26	\$4,118,600	2.6	\$411,860
200	13,664.8	2,033	\$247,642,100	203.3	\$24,764,210
300	8,356.6	51	\$513,200	5.1	\$51,320
400	847.3	69	\$17,221,300	6.9	\$1,722,130
500	294.5	6	\$1,815,500	0.6	\$181,550
600	108.0	7	\$18,201,300	0.7	\$1,820,130
700	300.4	1	\$847,900	0.1	\$84,790
800	389.4	11	\$4,987,301	1.1	\$498,730
900	4,081.0	4	\$5,150,700	0.4	\$515,070
TOTAL	35,963.9	2,208	\$300,497,901	220.8	\$30,049,790

TOWN OF BEEKMANTOWN STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	39	\$3,468,900
400	11	\$4,440,800
500	4	\$1,040,200
Total	54	\$8,949,900

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Beekmantown reviewed the county project list from the 2014 plan. They have included a status of efforts in Beekmantown to advance on these county mitigation project. Projects listed in the 2014 plan specific to Beekmantown were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Beekmantown as the plan was being updated in 2020.

TOWN OF BEEKMANTOWN 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce the threat of damages to property and infrastructure. Goal 1	Increase size of culvert to 36” and add tees every 150’ and ditch along Jersey Swamp Road from Agnew Road	Town executives, county/local DPW	Estimated \$150,000 for all	LT	M	Completed		

TOWN OF BEEKMANTOWN ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
New salt storage shed			Severe Winter Storm, Ice Storm			Completed			#2 Structure and Infrastructure
Upgrading culverts as roads are being repaved						ongoing			#2 Structure and Infrastructure
5 miles of roads paved						Completed			#2 Structure and Infrastructure
Rip-rap alongside roads		Rip-rap placed alongside, Point Au Roche Rd, Cooper Dr, Dixon Point Rd, Party Rd, Raised Rd.	Flood			Completed	Town Budget		#2 Structure and Infrastructure

Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Reroute Brook		Beartown Brook rerouted	Flood			Completed			#2 Structure and Infrastructure
Culvert cleaning routine implemented						Completed			#2 Structure and Infrastructure
Rebuild homes impacted by flooding		Homes along Point Au Roche built higher to prevent future flood damage	Flood			Completed			#1 Local Plans and Regulations
Concrete to stabilize Road Banks						Completed			#2 Structure and Infrastructure
Hydroseeding to prevent erosion		Hydroseed 37 acres throughout county				Completed			#2 Structure and Infrastructure

TOWN OF BEEKMANTOWN MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Elevate homes in floodplains	Reduce impact of flooding	Elevate homes located on: Cooper Rd., Dixon Pt., Stafford Dr., Deyo Dr., Point Au Roche Rd.	Flooding	Town executives, county/local DPW	H	2021-2025	FEMA	H	#2 Structural and Infrastructure Projects
2. Establish public water source for residents.	Address issues with salt contamination of ground water wells	Establish a public water source to protect residents from salt pollution in drinking water sources	All	Town Supervisor	L	?	DOS	H	#2 Structural and Infrastructure Projects
3. Improve/maintain railroad crossings in town	Reduce potential for transportation (rail) accidents, currently several crossing without signals	Install crossing signage and signals on Farm property, Burke Rd., maintain other crossings	Transportation (Rail)	Town Supervisor	L	2021-2025	Town Budget	M	#2 Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
4. Purchase a generator for Town Hall	Increase capacity of Town Hall to function in an emergency	Obtain a generator for use in the Town Hall (currently does not have a generator)	All	Town Supervisor	L	2022	Town Budget	M	#2 Structural and Infrastructure Projects
5. Build town highway garage	Town HWD having a suitable garage will increase emergency response, recover, and mitigation capacity	Build Town Highway Garage that is suited for town needs	All	Town Supervisor	H	2021-2025	?	H	#2 Structural and Infrastructure Projects
6. Purchase new equipment for use in storms/hazard events	Town currently lacks equipment that is vital to increase post-hazard capacity to respond/recover	Purchase excavator, bulldozer, hydroseeder to increase capacity to mitigation, respond/ recover	All	Town Supervisor	H	2021-2025	Town Budget	H	#2 Structural and Infrastructure Projects





















ArcGIS Maps for Town of Beekmantown:

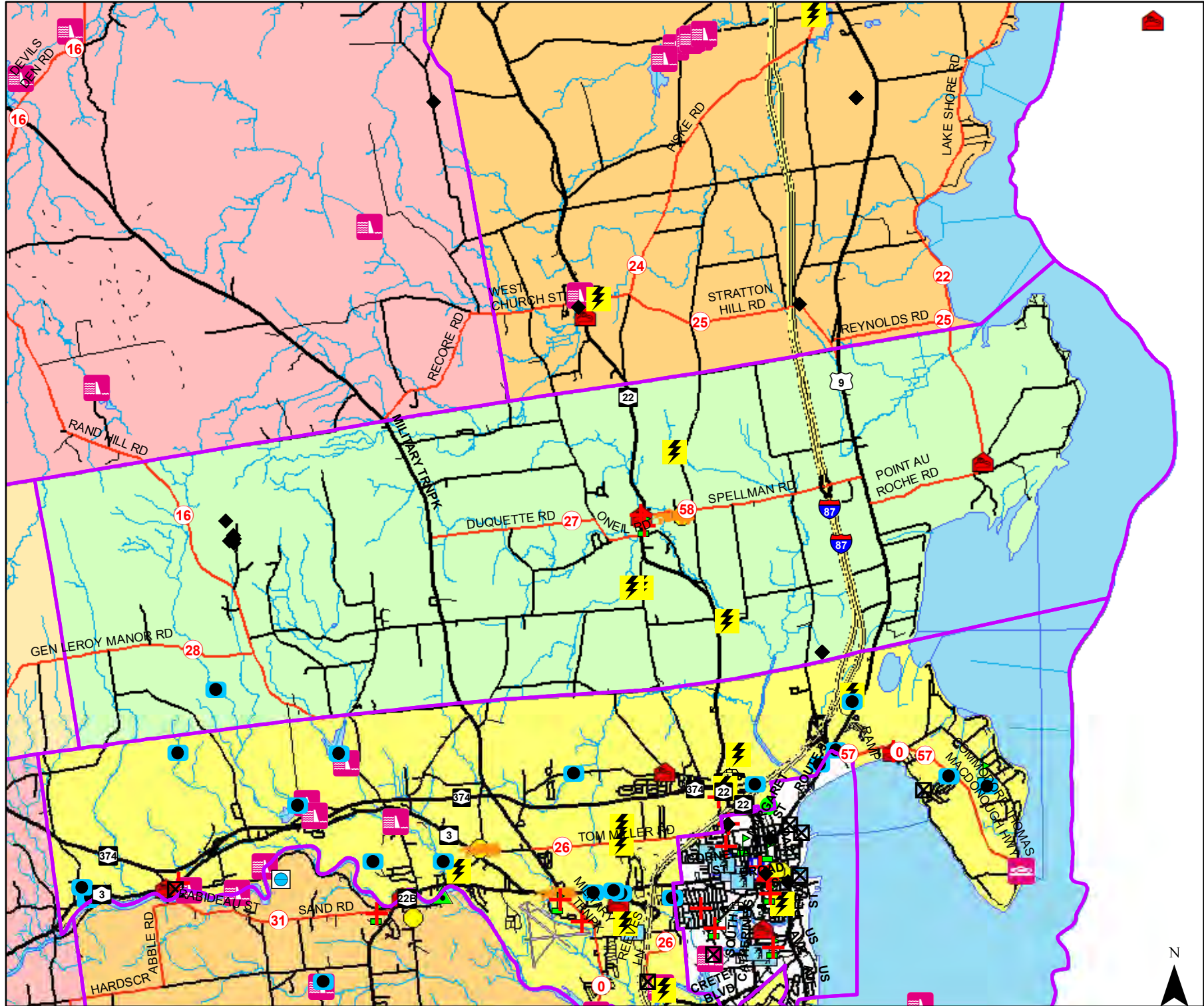
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

BEEKMANTOWN CRITICAL FACILITIES





















LEGEND

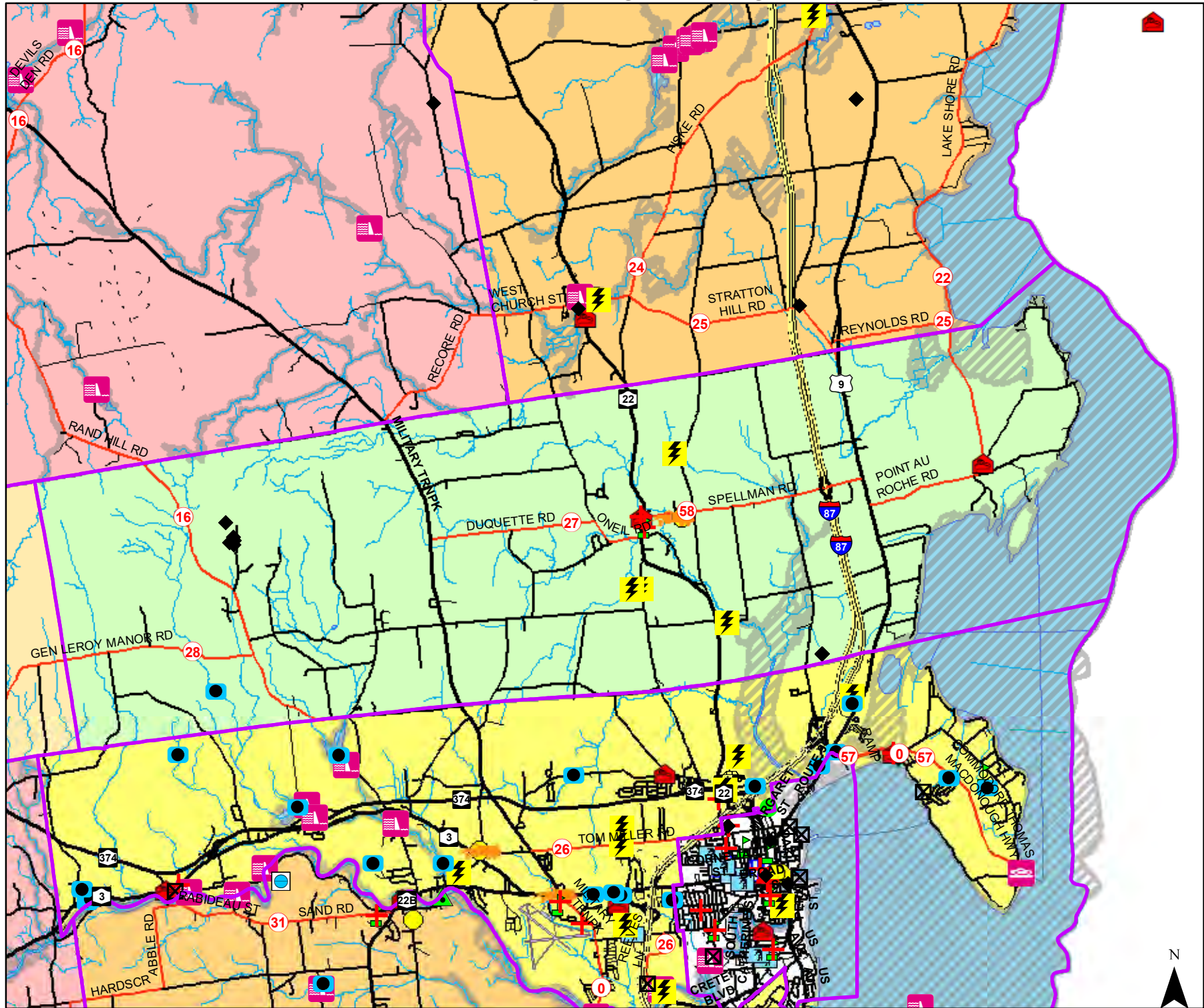
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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
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-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers



BEEKMANTOWN CRITICAL FACILITIES

LEGEND

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-  Hydro Generation
-  Flood Control Structure
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-  Health Centers



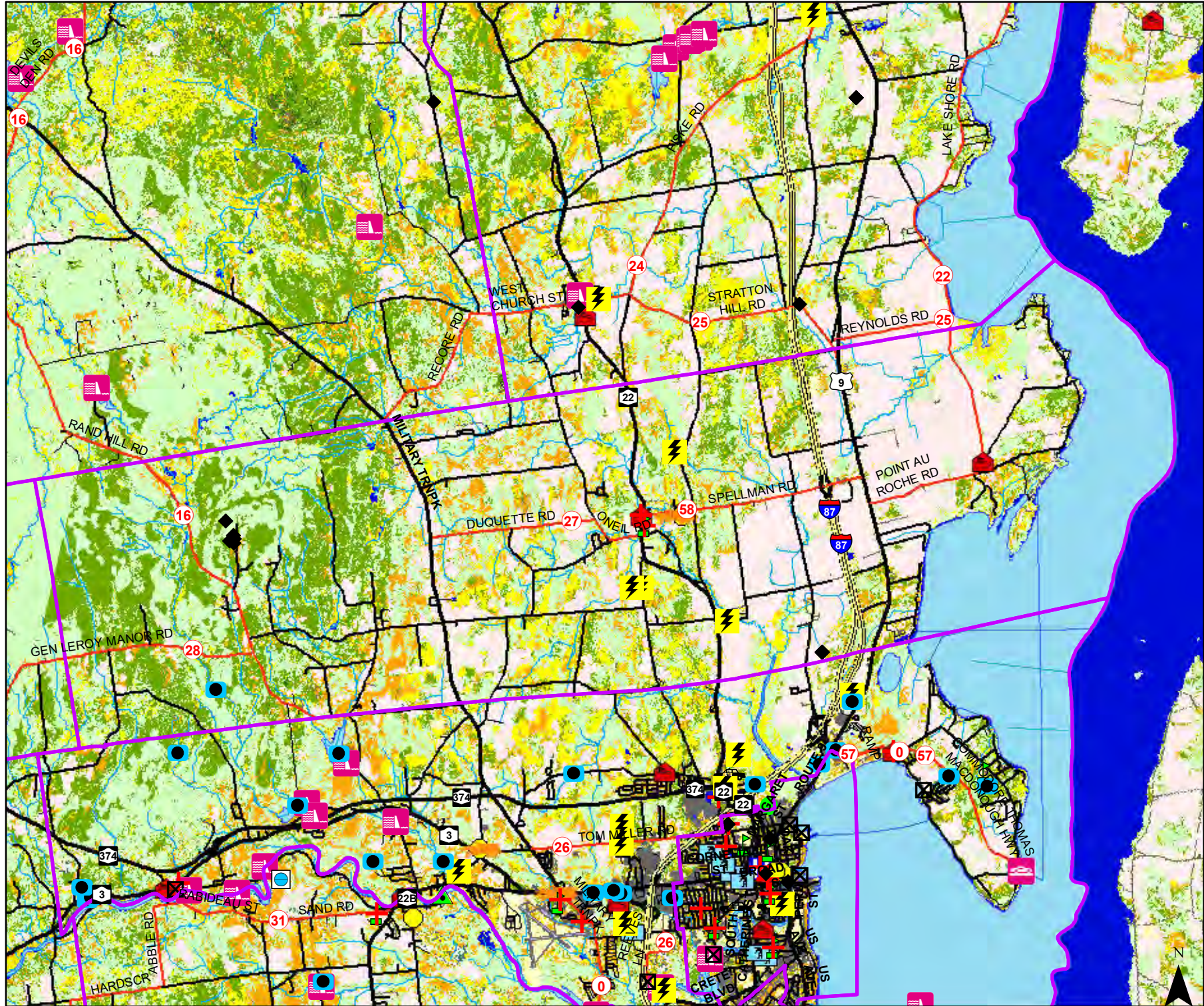
BEEKMANTOWN WILDFIRE FUEL MAP

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
















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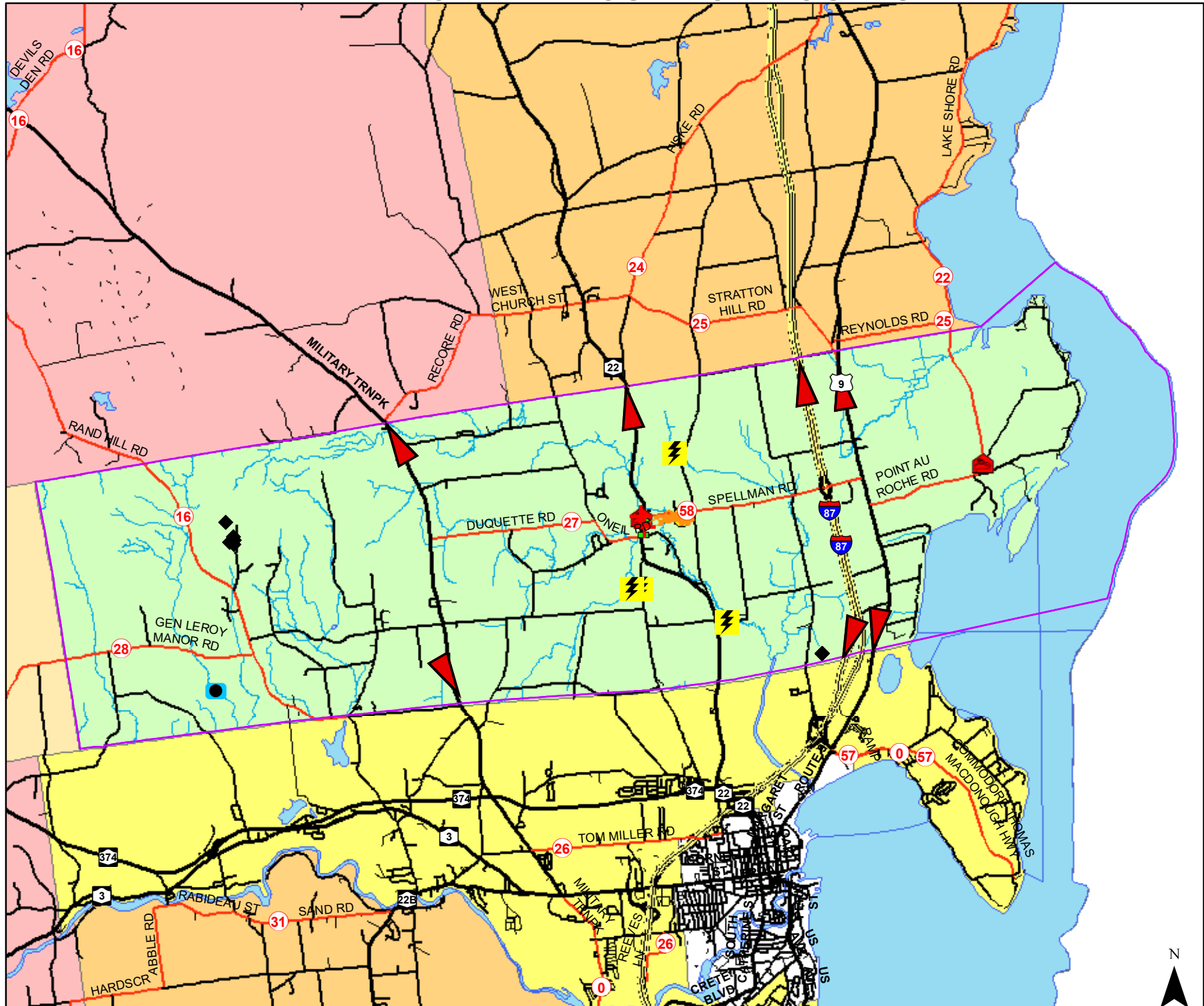
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- FBFM7
- FBFM8
- FBFM9
- FBFM10
- Urban
- Agriculture
- Water
- Barren
- Municipal Boundary
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- Fire_Stations
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BEEKMANTOWN EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
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Town of Black Brook

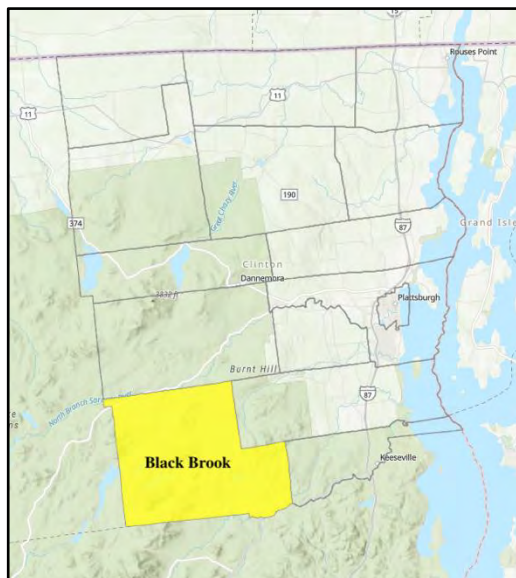
Introduction:

The Town of Black Brook formed in 1839 and is the southwestern corner of Clinton County. It is bordered on the north by the Town of Saranac, to the east by Peru and AuSable, to the south by Essex County and to the west by Franklin County. The town is named after Black Brook a stream that flows through the town. The entire town is within the Adirondack Park.

Black Brook has within its boundaries Taylor Pond, Silver Lake, and Fern Lake. The Saranac River and Little AuSable River flow through the town as well. Taylor Pond Campground and Day Use area has 25 car accessible sites, as well as 5 water access sites located around Taylor Pond. Fishing, boating, and hiking are popular in this state-run park. Douglas Resort and Campground is located adjacent to Silver Lake and provides camping sites as well.

There are several popular hiking spots in the southwestern portion of the county including Catamount Mountain, Silver Lake Mountain, and Alder Brook Mountain. There is also a popular boardwalk trail through Silver Lake Bog.

The geography of the town is mountainous and features several rivers, streams, and ponds. There are forests, residential, and agricultural land uses within the town.



TOWN OF BLACK BROOK TABLE OF FACTS	
Land Area	134.3 sq. miles, 85.952 acres
Incorporated Villages	N/A
Hamlets	AuSable Forks, Black Brook, Clayburg, Devins Corners, East Kilns, Hawkeye, Riverview, Swastika, Thomasville, Union Falls, West Kilns
2010 Population Census	1,497
Population Density	11.11 people/sq. mile
Governance	Supervisor and Town Council
Total Assessed Valuation	\$166,537,472
Highest Elevation	3,169' (Catamount Mountain)
Largest Body of Water	Taylor Pond
Rivers	Saranac River, Little Ausable River
Dams	2
Bridges	6
Interstate Highway	N/A
State Routes	3
Land Classified: Agricultural	N/A
Land Classified: Industrial	N/A
Land Classified: Residential	14,382.8 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Town of Jay Fire Department
Schools	Ausable Forks Elementary, AuSable Valley High School
Railroads	N/A
Interstate Bridge	N/A
Law Enforcement	N/A
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Town of Jay, Private wells
Emergency Shelters	Community Center, American Legion
Critical Facilities	Fire Station, Emergency Operation Center, Critical Vehicles and Equipment Storage

Planning Process:

A meeting was held on December 6th, 2019 with town officials and staff to obtain the information for the updated plan.

Capability Assessment:

The Town of Black Brook has several planning mechanisms in place.

TOWN OF BLACK BROOK PLANNING DOCUMENTS	
Document	Notes
Comprehensive Emergency Management Plan	
Floodplain Regulations	Stand-alone
Zoning Regulations	
Comprehensive Land Use Plan	Adopted in the 1990s
Subdivision Regulations	
Building & Fire Code	Use NYS established codes
Watershed Management Plan	AuSable River
Agricultural and Farmland Protection Plan	County level plan

The town is managed by a Town Supervisor and four Town Councilors. The Town Supervisor serves as the emergency manager. The Town Board serves as the planning board. There are no engineers employed by the town they are hired on an as needed basis. There is a floodplain manager/code enforcement officer. Land surveyors are hired as needed for projects. The AuSable River Watershed Association provides scientific expertise regarding community hazards. There is GIS support provided by the county. Grant writers as well as fiscal staff are hired as needed.

The Town of Black Brook uses various sources of funding for projects and programmatic implementation. Community Development Block Grants (CDBG) have been used for housing rehabilitation. There are special taxes associated with water, sewer, fire and ambulance services provided by the town. There is an infrastructure and water and sewer agreement with the Town of Jay.

Black Brook does not participate in any Education and Outreach programs directly instead those services are provided by a local nonprofit the AuSable River Watershed Association.

A self-assessment in four areas was completed for the town. Planning and regulatory capabilities, administrative and technical capabilities, financial, and education and outreach were all ranked as moderate. Lack of resources are addressed with either hiring supports or utilizing their partnership with the Clinton County Government.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF BLACK BROOK CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	Yes	Yes	Yes	Looking to move the station
Critical Vehicle and Equipment Storage	No	No	Yes	
Emergency Operations Center	No	No	Yes	Town Hall, 400' from 1% floodplain
Utility/Power Generating Stations	yes	No	?	Union Falls Dam, proposal to elevate the structure

The town hall is the Emergency Operations Center and serves as the communications center as well. There are no medical facilities, nursing homes, or blood banks within the town. There are no daycare facilities. Sewage treatment is provided by the Town of Jay. There are no drug and alcohol treatment centers nor are there any homeless shelters. A Tier 2 facility is located within the town it is Gordon Oil, it is located within the floodplain however it is elevated to protect it from flood damages.

Two locations within the town have been designated as places for displaced residents. Two campgrounds have been identified as being suitable for RVs and Mobile Homes as temporary housing. There are also shelters located at the Black Brook Community Center, and the American Legion.

TOWN OF BLACK BROOK TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Taylor Pond Campground, Silver Lake Road	Public	N	N	Y	N
Silver Lake Campground, Silver Lake Road	Private	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the

public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Black Brook. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 8 repetitive loss properties in Black Brook.

Black Brook will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF BLACK BROOK FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
8	7	22	\$539,678

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF BLACK BROOK HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Floods	Severe Winter Storms	
	Med	High Winds and Tornadoes		Extreme Cold
	Low	Dam Failure	Earthquake, Ice Storms	Avalanche, Drought, Extreme Heat, Hail Storms, Hurricanes, Landslides, Thunderstorms, Transportation (Truck), Wildfires

Potential Loss:

Potential loss was calculated for the Town of Black Brook. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 7 codes on the Clinton County Real Property Tax Services website:

- 200 Residential
- 300 Vacant Lands
- 400 Commercial
- 500 Recreation/
Entertainment
- 600 Community
Services
- 800 Public Service
- 900 Forest, Conservation
Lands, and Parks

TOWN OF BLACK BROOK POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
200	14,382.8	841	\$69,337,900	84.1	\$6,933,790
300	6,124.9	51	\$766,000	5.1	\$76,600
400	264.8	18	\$2,959,900	1.8	\$295,990
500	213.3	7	\$571,300	0.7	\$57,130
600	302.3	6	\$769,200	0.6	\$76,920
800	305.0	10	\$1,800,672	1	\$180,067
900	60,928.0	11	\$74,600	1.1	\$7,460
Total	82,521.1	944	\$76,279,572	94.4	\$7,627,957

TOWN OF BLACK BROOK STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	24	\$1,760,400
300	1	\$1,500
400	9	\$1,213,400
800	1	\$980,000
Total	35	\$3,955,300

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Black Brook reviewed the county project list from the 2014 plan. They have included a status of efforts in Black Brook to advance on these county mitigation project. Projects listed in the 2014 plan specific to Black Brook were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Black Brook as the plan was being updated in 2020.

TOWN OF BLACK BROOK 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce the impact of flooding of Palmer Brook and Ausable River. Goal 1	Place “rip rap” along Palmer Brook and AuSable River. Monitor water levels regularly.	Town executives, county/local DPW	L	Fall 2013, ongoing for spring floods LT	H	Completed in 2014		
Reduce impact of flooding	Reduce impact of flooding of Golf Course Rd. Goal 1	Clean out storm drain on Golf Course Rd. Presented 75% blocked with debris from TS Irene	Town executives, county/local DPW	H-\$32,000	Fall 2013, ongoing	H	Completed		

TOWN OF BLACK BROOK MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Water system for Black Brook	Establish a public drinking water source	Develop a well in Black Brook for public water use, currently no public drinking water source.	Flooding	Town Supervisor	H	2021-2025	DOS	H	#2 Structural and Infrastructure Projects
2. Rebuild Terry Mt. Rd., Access	Rebuild and fortify Terry Mountain Rd.	Repair and fortify/improve the road so that access to the radio tower can be maintained (it is location of emergency radio equipment)	All	Town Supervisor	L	2021-2025	?	H	#2 Structural and Infrastructure Projects
3. Purchase generators for key infrastructure	Purchase generators for key buildings that currently lack backup power	Purchase generator for Water District #2, Town Garage	All	Town Supervisor	L	2021-2025	Town Budget		#2 Structural and Infrastructure Projects

4. Build salt shed	Build salt shed to store salt for use on winter roads	Build a salt shed to store salt for use on roads that will also prevent leaching of salt into environment and water table	Winter Storm/ Ice Storm	Town Supervisor	H	2021-2025	DOS		#2 Structural and Infrastructure Projects
5. Oil and water separator for highway garage	Install an oil/water separator in the town highway dept. garage to reduce and eliminate oil/solvents from contaminating waterways	Install an oil/water separator to be used at the town HWD garage	All	Town Highway Dept.	M	2021-2025	?		#3 Natural Systems Protection
6. Develop website for town	Develop town website to include section on education for residents on natural hazard events	Develop website for town to increase public access to information on hazard events, NFIP, mitigation actions and the HMP.	All	Town Supervisor	L	2021-2025	?		#4 Education and awareness projects.





















ArcGIS Maps for Town of Black Brook:

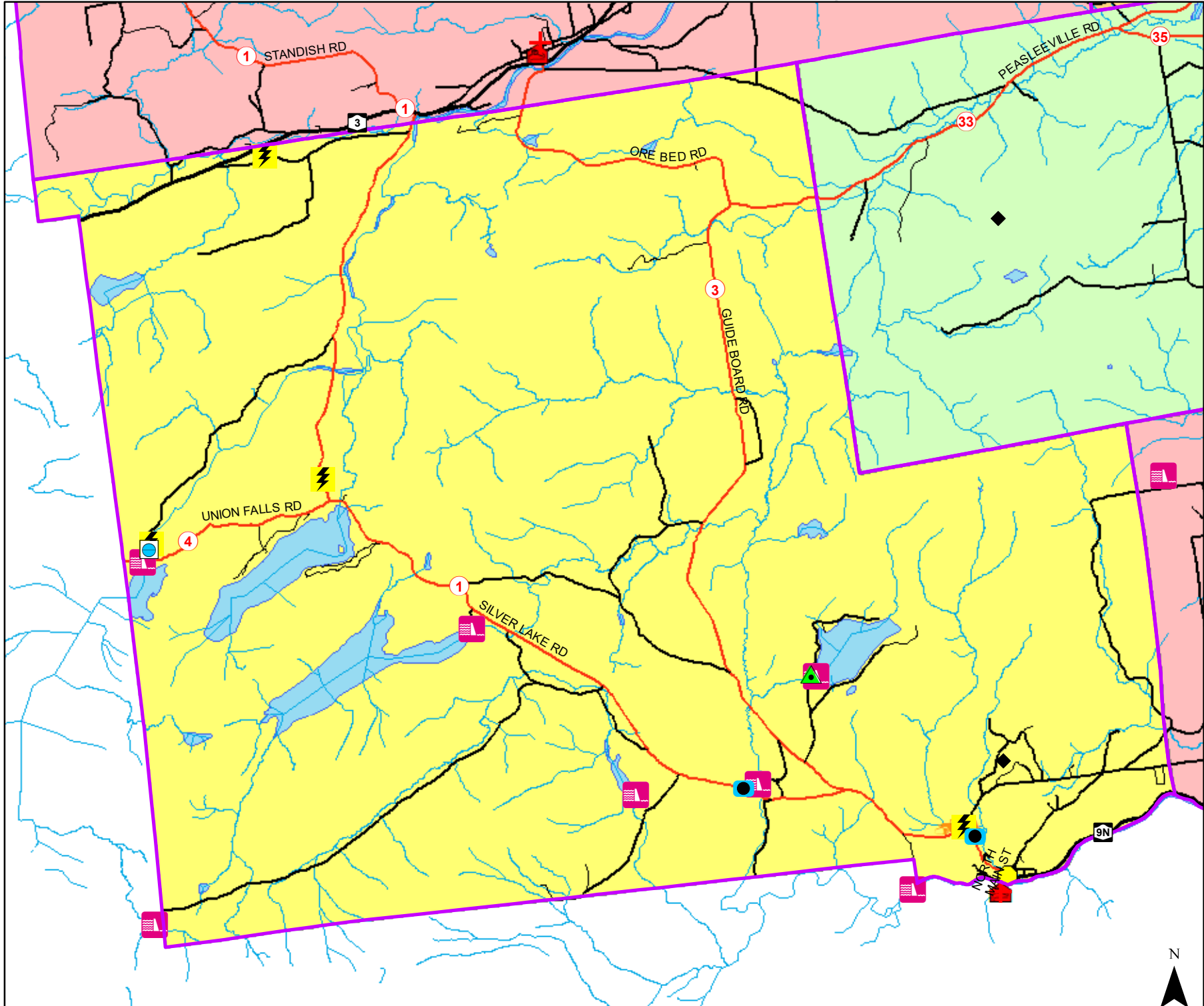
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3. Wildfire Fuel Sources
4. Evacuation Routes

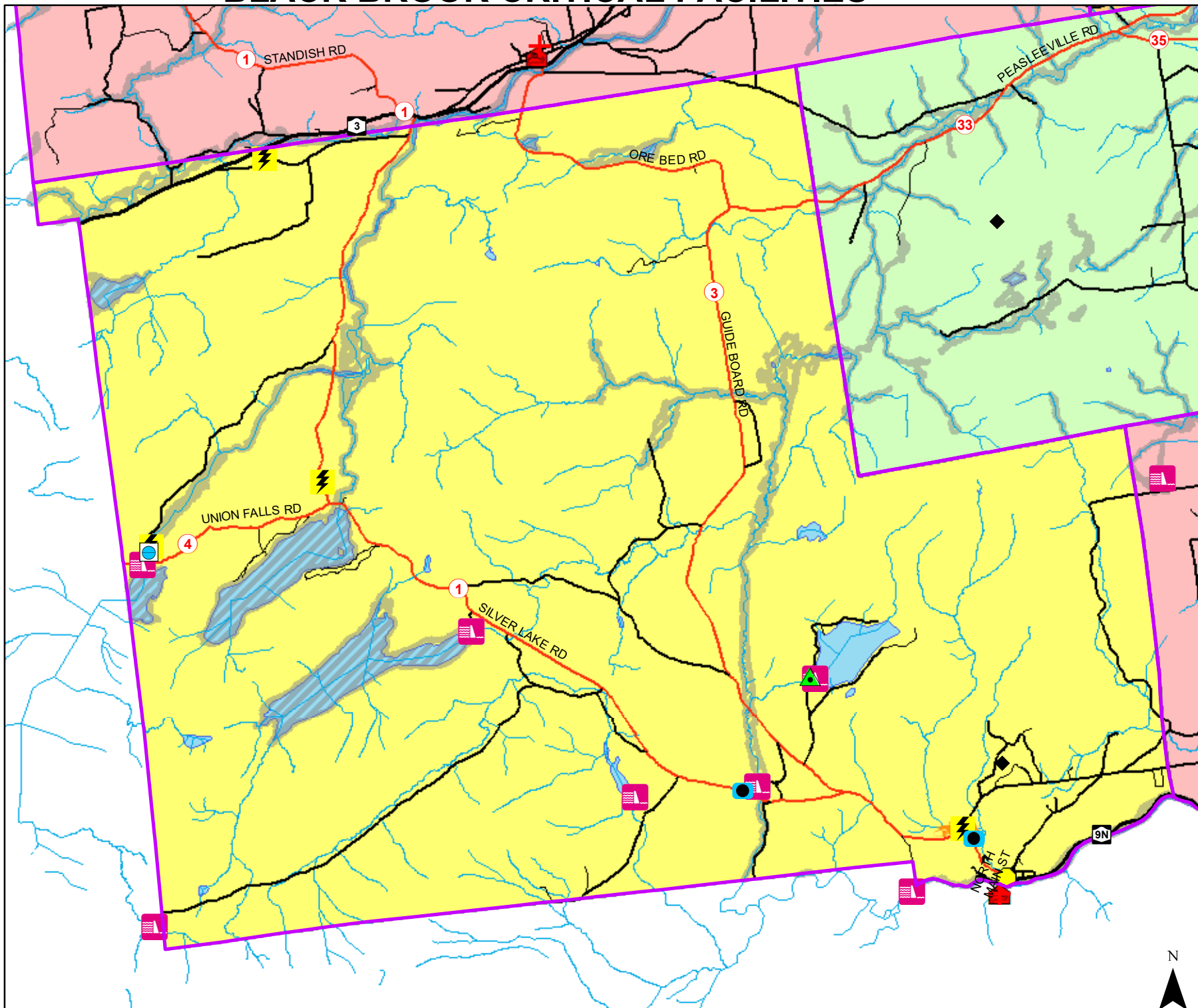
BLACK BROOK CRITICAL FACILITIES

LEGEND

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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
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BLACK BROOK CRITICAL FACILITIES



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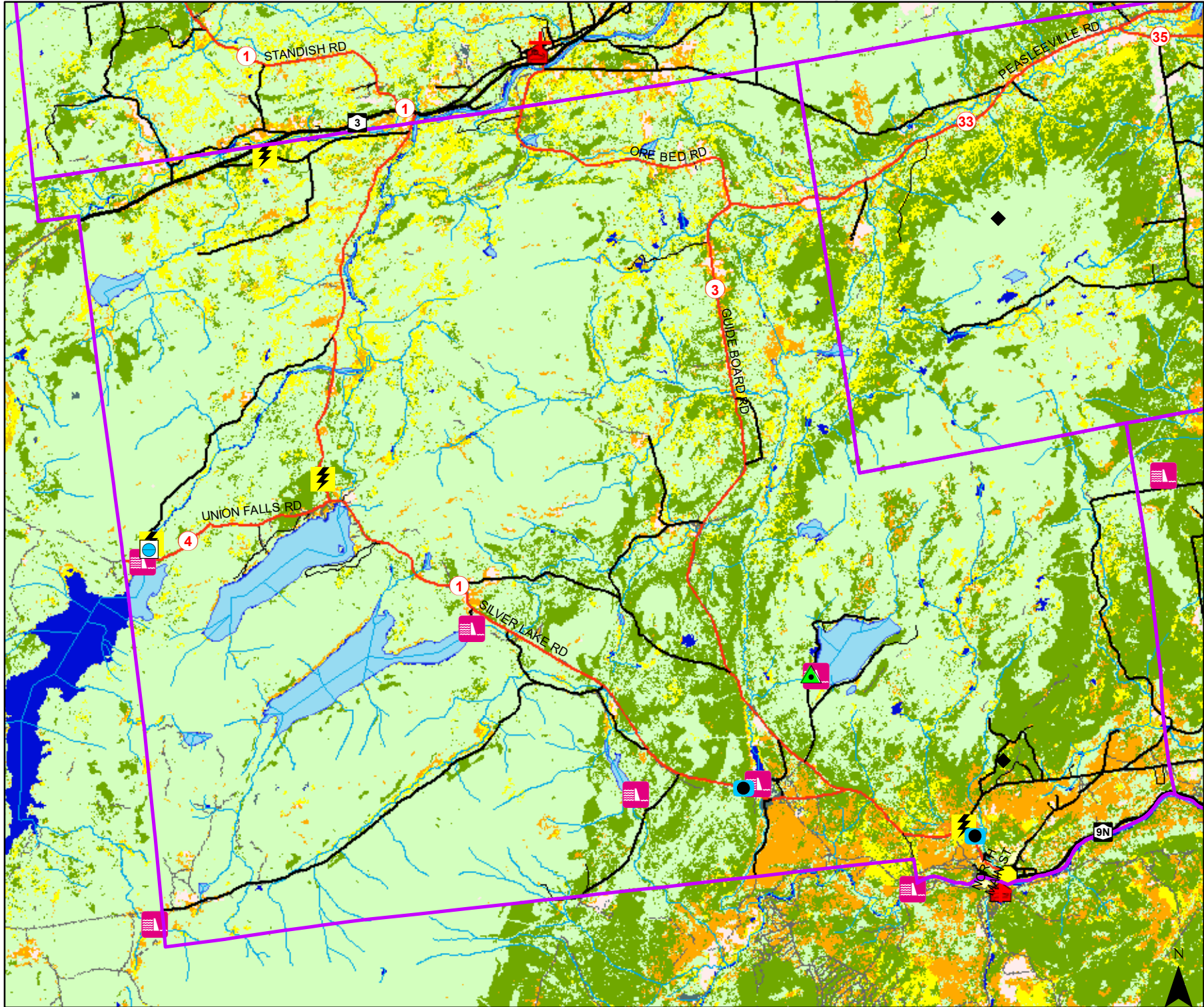
BLACK BROOK WILDFIRE FUEL MAP

LEGEND

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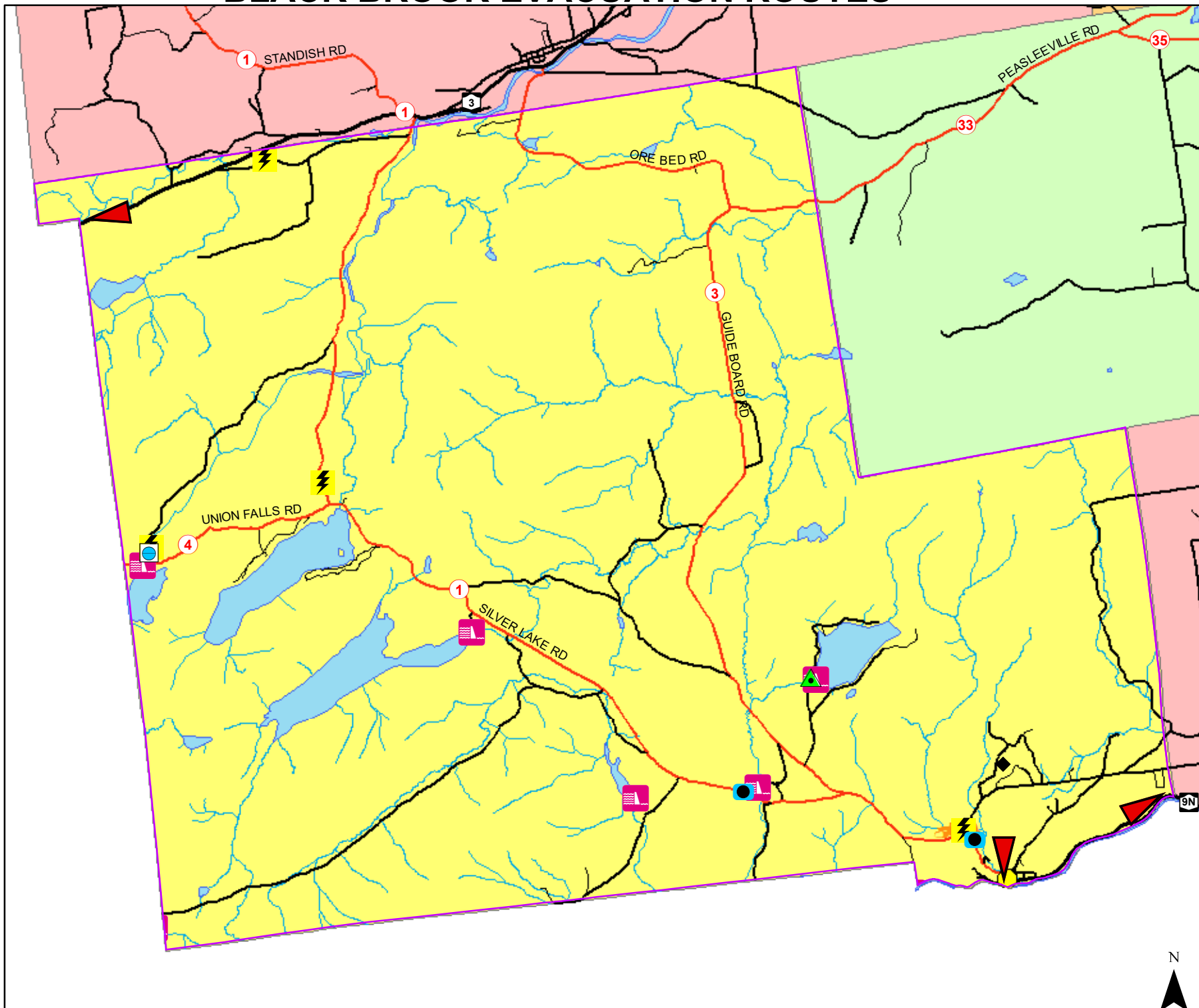
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BLACK BROOK EVACUATION ROUTES

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Town of Champlain

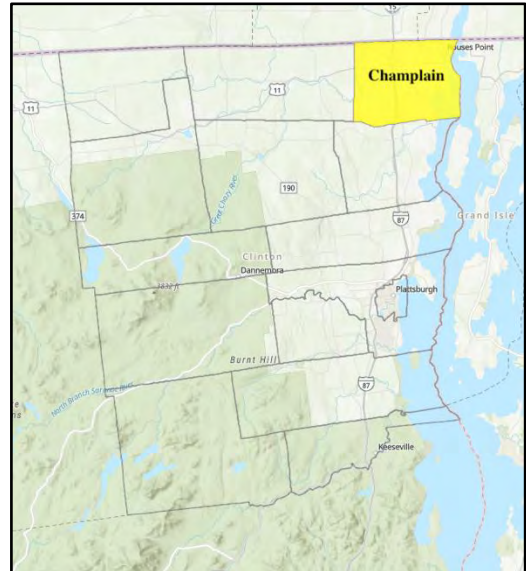
Introduction:

The Town of Champlain is located in the Northeastern corner of Clinton County, and was formed in 1788. It is bordered to the north by Canada, to the west by Ellenburg, and to the south by Chazy, and by Lake Champlain to the east. The town is named for Samuel de Champlain who surveyed the area in 1609 and was part of Canada until 1763. The area became a part of the United States in 1782.

The town of Champlain has three border crossings within its bounds: Champlain, Overton Corners, and Rouses Point. These three crossings are important connections between the US and Canada. The crossing at Rouses Point also oversees railroad transit between the US and Canada. The US border crossing at Champlain, located on I-87 (Autoroute 15 in Quebec) is one of the four most important commercial gateways of the Northern US border. The Champlain border crossing connects New York City with Montreal, QC. There is also a bridge that is an important connection between New York and Vermont.

The Great Chazy River flows through the town of Champlain. Corbeau Creek a major tributary of the Great Chazy River flows through the town as well. The Richelieu River, the outlet of Lake Champlain flows north into Canada adjacent to Rouses Point.

Point au Fer, a peninsula located within the town, contains both the Kings Bay Wildlife Management Area and was the site of the Revolutionary War era Fort Au Fer. The fort was destroyed in a fire in 1805. The Kings Bay Wildlife Management Area is 683 acres in size, and contains a variety of habitats from hardwood swamps, cattail marshes, to a reverted cattle pasture. The area was acquired in the 1960s to enhance waterfowl habitat along Lake Champlain.



TOWN OF CHAMPLAIN TABLE OF FACTS	
Land Area	58.82 sq. miles, 37,644.8 acres
Incorporated Villages	Champlain, Rouses Point
Hamlets	Coopersville, Perry Mills
2010 Population Census	5,754
Population Density	97.8 people/sq. mile
Governance	Supervisor and Town Council
Total Assessed Valuation	\$ 261,651,034
Highest Elevation	152'
Largest Body of Water	Bordered by Lake Champlain the the east
Rivers	Great Chazy River
Dams	2
Bridges	18
Interstate Highway	I-87
State Routes	9, 9B, 276, 11
Land Classified: Agricultural	11,061.6 acres
Land Classified: Industrial	31.4 acres
Land Classified: Residential	6,653.1 acres
Hospital/Medical Facility	Hudson Headwaters Medical Facility
Fire & Rescue	Champlain Fire Department, Rouses Point Fire Department
Schools	Northeastern Clinton Central School, Rouses Point Elementary, Champlain Elementary
Railroads	Canadian-Pacific Rail Line
Interstate Bridge	10
Law Enforcement	N/A
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Town of Champlain (3 wells)
Emergency Shelters	Schools, Fire Departments
Critical Facilities	Town Hall, Champlain Telephone

Planning Process:

A meeting was held on November 25th, 2019 with town officials and staff to obtain the information for the updated plan.

Capability Assessment:

The Town of Champlain has several planning mechanisms in place.

TOWN OF CHAMPLAIN PLANNING DOCUMENTS	
Document	Notes
Comprehensive Emergency Management Plan	Includes continuity of operations
Floodplain Regulations	Stand-alone
Zoning Regulations	
Comprehensive Land Use Plan	
Subdivision Regulations	
Natural Resources Protection Plan	
Building & Fire Code	Use NYS established codes
Agricultural and Farmland Protection Plan	Ag District Designation

The Town is managed by a Supervisor and a Council of 4 individuals. The Town Supervisor serves as the emergency manager. County resources are used for planning support. There are no engineers employed by the town they are hired on an as needed basis. There is a floodplain manager/code enforcement officer. Land surveyors are hired as needed for projects. The NYS DEC provides scientific expertise regarding community hazards. There is GIS support provided by the county. Grant writers as well as fiscal staff are hired as needed.

The Town of Champlain uses various sources of funding for projects and programmatic implementation. Capital Improvement Programming has been used for environmental facilities cooperation and the building of a salt shed. There are special taxes associated with water and sewer that are used to maintain the system, and for the payment of debts. There is an infrastructure and water and sewer agreement with the Village of Champlain. The Fire department is also shared with the Village of Champlain.

The Town of Champlain partners with The Red Cross, and the local Fire Station to provide public outreach and education. The town also pairs with the JCEO for education and outreach purposes. The Lake Champlain Regulatory Planning Board provides money for projects, fences for livestock, point and non-point water pollution sources, septic systems replacement, and culvert replacements.

A self-assessment in four areas was completed for the town. Planning and regulatory capabilities, and Administrative and Technical were ranked as moderate. Financial capabilities were ranked as high. Education and Outreach capabilities were ranked as being low. Lack of resources are

addressed with either hiring supports or utilizing their partnership with the Clinton County Government.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF CHAMPLAIN CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	Yes	No	Yes	Town of Champlain and Village of Rouses Point fire stations both have self-enclosed generators
Critical Vehicle and Equipment Storage	No	No	Yes	
Emergency Operations Center	No	No	Yes	Town Hall, and fire stations
Medical facilities	No	No	Yes	Hudson Headwaters Health Network
Drinking water and wastewater treatment plant	Yes	No	Yes	Water: built above flood height. Wastewater: berm built around facility (after 1996 flood)

The town hall is the Emergency Operations Center, as well as the fire stations located within the town. The Town Hall has communications equipment. Hudson Headwaters is a medical facility located within the town, it offers urgent care services as a wide range of general practitioner and specialist services. There are no nursing homes, or blood banks within the town. There are no daycare facilities. A phone company is located within the town and it is unknown whether there is a generator present. There are no drug and alcohol treatment centers nor are there any homeless shelters.

There are 4 locations within the Town of Champlain that have been designated as locations for temporary housing in the event of a disaster. The schools located within the town could all potentially be used for emergency shelters, and all have power water and sewage available on site. The former Pfizer parking lot could be used for RVs and mobile homes. There is also a mall that would be suitable for RVs and mobile homes to be temporarily placed in the event of a disaster.

TOWN OF CHAMPLAIN TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Elementary School, Maple St., Rouses Point	Public	N	Y	Y	Y
Elementary School, Elm St., Champlain	Public	N	Y	Y	Y
Northeastern Clinton, Route 276, Champlain	Public	N	Y	Y	Y
Former Mall, Route 11, Champlain	Private	N	Y	Y	Y
Pfizer Parking Lot, Academy St., Rouses Point	Private	N	Y	Y	Y

In the event of an emergency that required evacuation the residents of the Town of Champlain are notified through a reverse-911 notification system that is controlled at the county level. Fire department staff would be utilized for door-to-door notification of residents. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Champlain. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. The Town of Champlain has 14 repetitive loss properties.

The Town of Champlain will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF CHAMPLAIN FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
14	23	36	\$316,036

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF CHAMPLAIN HAZARD RANKING				
		Impact		
		High	Med	Low
Probability	High		Severe Winter Storms	
	Med		Extreme Cold, High Winds and Tornadoes	
	Low	Ice Storms	Floods, Hurricanes	Avalanche, Drought, Earthquake, Extreme Heat, Hail Storms, Landslides, Seiche Floods, Thunderstorms, Transportation (truck and rail), Wildfires

Potential Loss:

Potential loss was calculated for the Town of Champlain. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

100 Agriculture	200 Residential	300 Vacant Lands
400 Commercial	500 Recreation/ Entertainment	600 Community Services
700 Industrial	800 Public Service	900 Forest, Conservation Lands, and Parks

TOWN OF CHAMPLAIN POTENTIAL LOSS					
Zoning Class Code	Acreege	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	11,061.6	29	\$4,536,700	2.9	\$453,670
200	6,653.1	1,054	\$100,206,100	105.4	\$10,020,610
300	8,812.4	46	\$403,600	4.6	\$40,360
400	647.3	90	\$24,149,300	9.0	\$2,414,930
500	345.5	16	\$708,500	1.6	\$70,850
600	284.3	25	\$18,342,600	2.5	\$1,834,260
700	31.4	2	\$68,400	0.2	\$6,840
800	228.5	20	\$7,182,832	2.0	\$718,283
900	813.0	1	\$2,200	0.1	\$220
Total	28,877.2	1,283	\$155,600,232	128.3	\$15,560,023

TOWN OF CHAMPLAIN STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	52	\$3,703,300
300	6	\$2,200
500	2	\$220,800
Total	60	\$3,926,300

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

The Town of Champlain reviewed the county project list from the 2014 plan. They have included a status of efforts in the Town of Champlain to advance on these county mitigation project. Projects listed in the 2014 plan specific to the Town of Champlain were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by the Town of Champlain as the plan was being updated in 2020.

TOWN OF CHAMPLAIN 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding/ ice jams	Reduce stormwater runoff for land along the Great Chazy River	Implement a stormwater runoff plan to lessen silt buildup along the river on the Perry Mills Roads	Village executives, county/local DPW	H	Ongoing LT	H			

TOWN OF CHAMPLAIN MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Drainage project	Improve drainage along Spruce St. to reduce roadway flooding	Spruce St, storm water drainage project to design and install drainage	Flood	Town of Champlain	H-\$300,000	2021-2025	?		#3 Natural Systems Protection
2. Purchase generator for water plant	Drinking water plant's generator needs to be upgraded	Upgrade generator for drinking water plant to ensure it is protected during power outages	All	Town of Champlain	M-\$40,000	2021-2025	Town Budget		#4 Education and awareness projects.





















ArcGIS Maps for Town of Champlain:

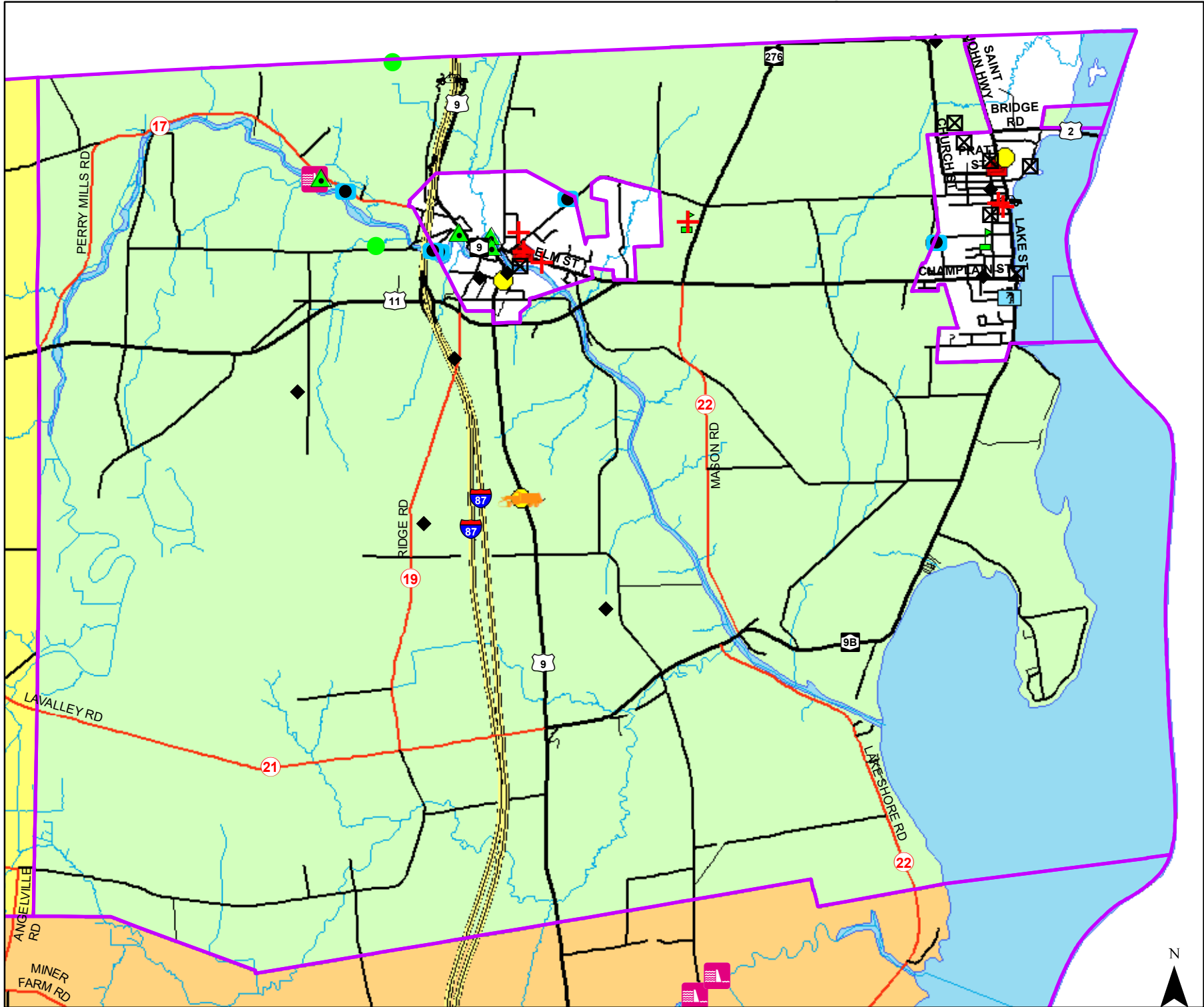
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

CHAMPLAIN CRITICAL FACILITIES





















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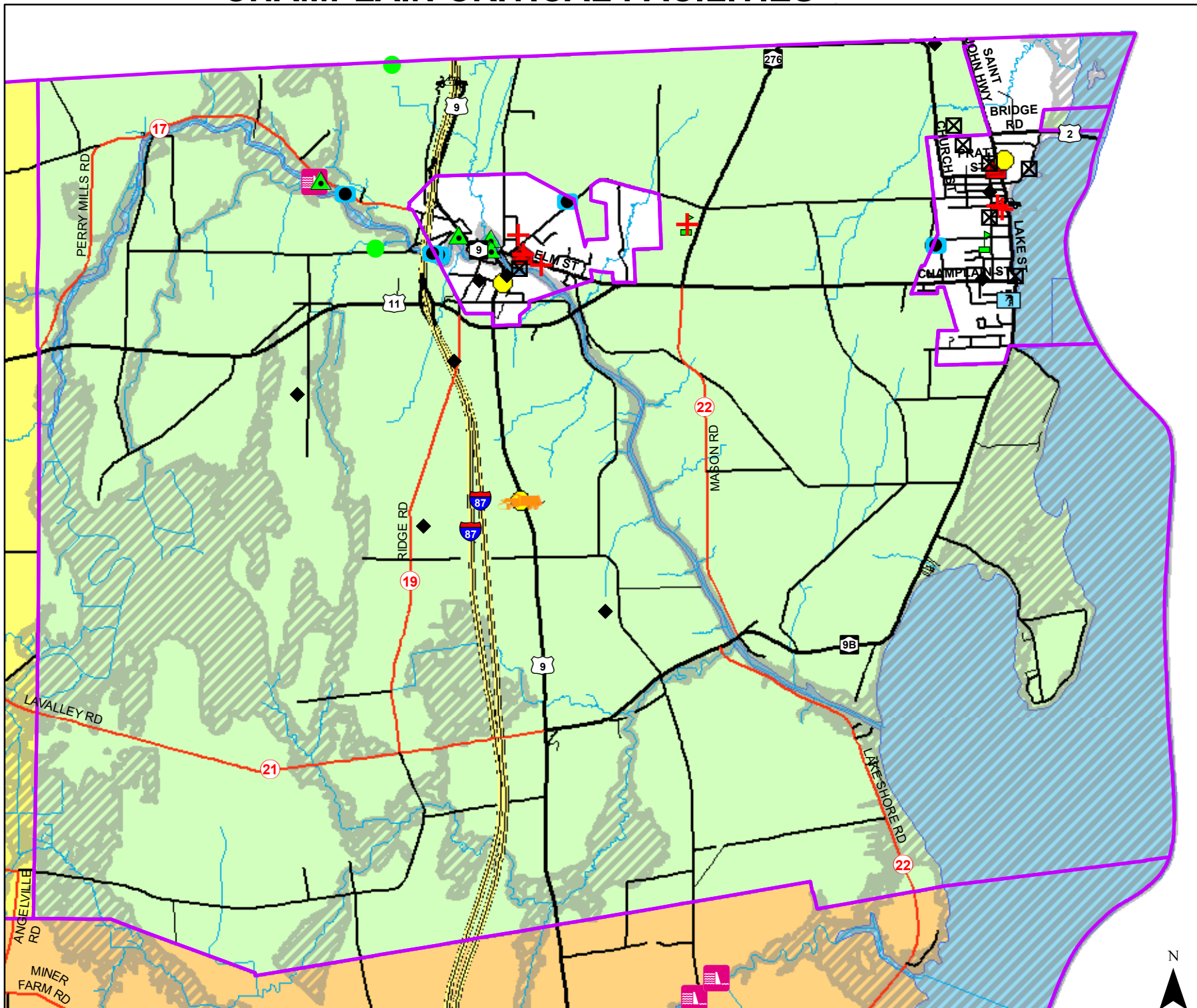
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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers



CHAMPLAIN CRITICAL FACILITIES

LEGEND

-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
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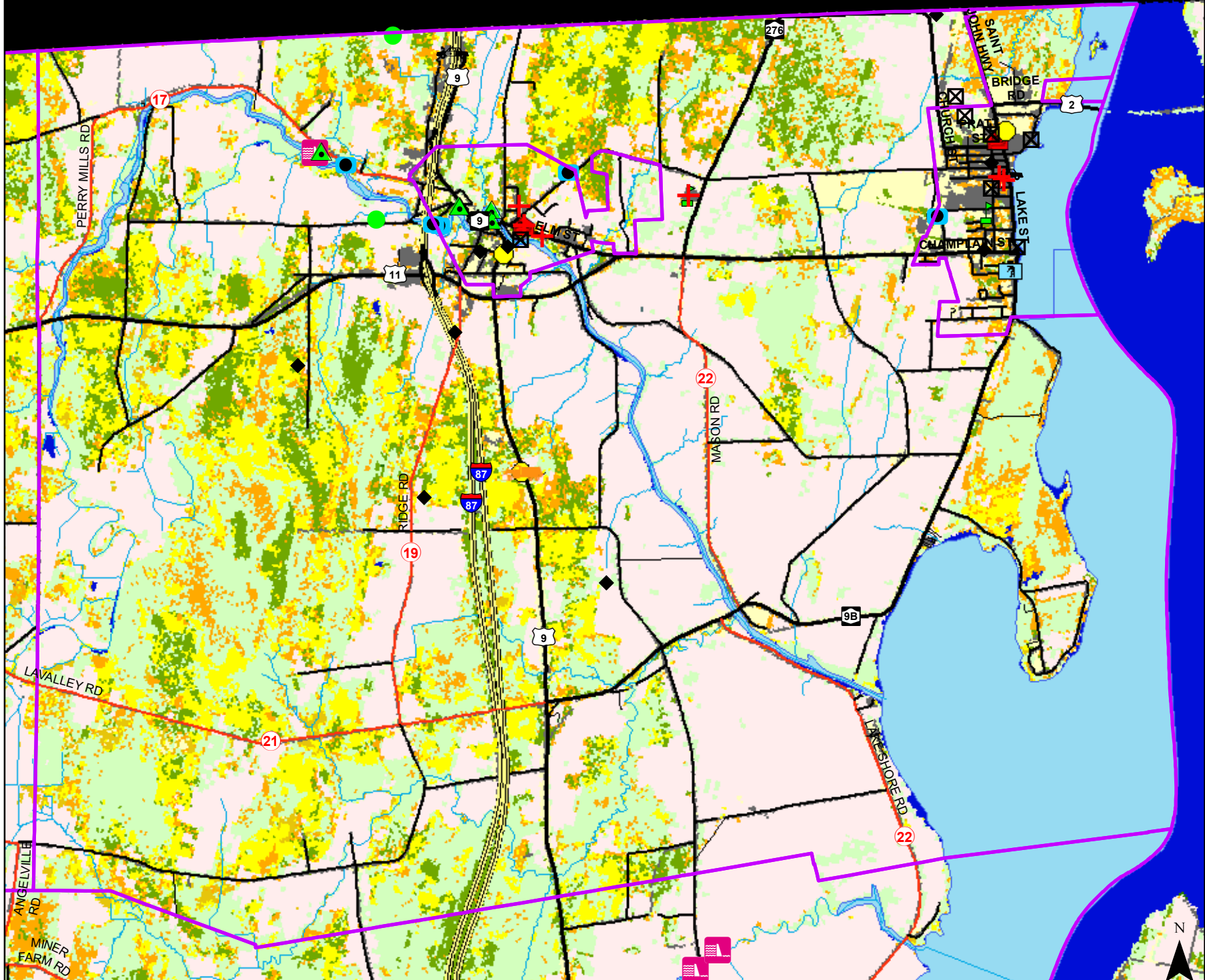
CHAMPLAIN WILDFIRE FUEL MAP

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







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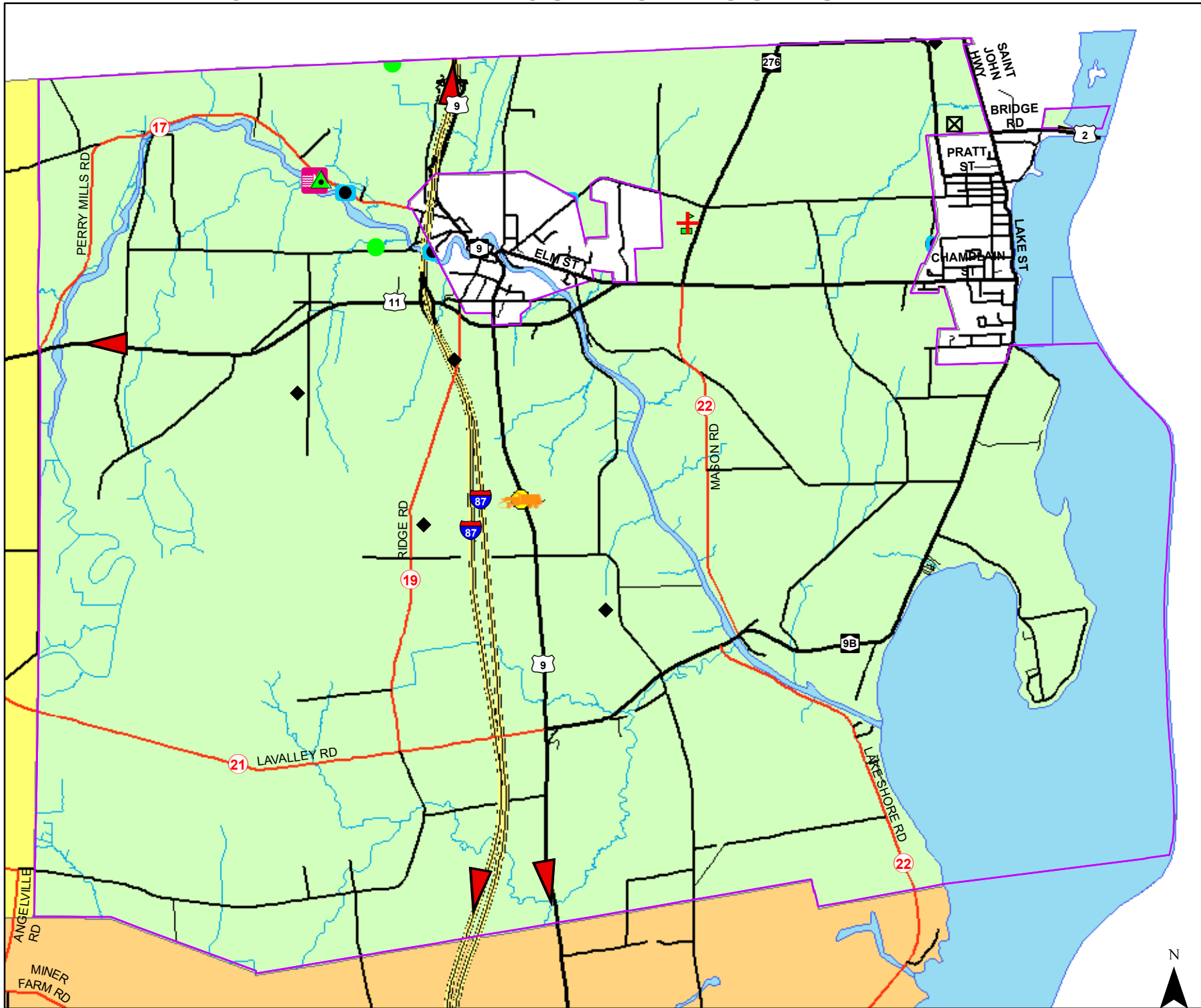
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-  Agriculture
-  Water
-  Barren
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers
-  Fire_Stations
-  Airstrip



CHAMPLAIN EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
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-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls



Village of Champlain

Introduction:

The Village of Champlain located within the town of Champlain and was incorporated in 1873. It is located in the north central portion of the Town of Champlain about 4 miles west of Lake Champlain. The town as well as the lake are named after Samuel de Champlain, a French colonist that surveyed the area in 1609. This area was part of Canada until 1763 and became part of the United states in 1783. The village was an important staging point in the War of 1812.



VILLAGE OF CHAMPLAIN TABLE OF FACTS	
Land Area	1.4 sq. miles, 896 acres
Incorporated Villages	N/A
Hamlets	N/A
2010 Population Census	1,101
Population Density	786.4 people/sq. mile
Governance	Mayor and Village Board
Total Assessed Valuation	\$ 58,399,900
Largest Body of Water	N/A
Rivers	Great Chazy River
Dams	0
Bridges	6
Interstate Highway	I-87
State Routes	9
Land Classified: Agricultural	31.1 acres
Land Classified: Industrial	N/A
Land Classified: Residential	102.9 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Champlain Fire Department
Schools	N/A
Railroads	N/A
Interstate Bridge	N/A
Law Enforcement	N/A
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Village/Town of Champlain (3 wells)
Emergency Shelters	Champlain Fire Department
Critical Facilities	Town Hall, Champlain Telephone

Planning Process:

A meeting was held on December 18th, 2019 with town officials and staff to obtain the information for the updated plan.

Capability Assessment:

The Village of Champlain has several planning mechanisms in place.

VILLAGE OF CHAMPLAIN PLANNING DOCUMENTS	
Document	Notes
Hazard Mitigation Plan	
Comprehensive Emergency Management Plan	Includes continuity of operations
Floodplain Regulations	Stand-alone
Zoning Regulations	
Comprehensive Land Use Plan	Adopted in the 1990s
Subdivision Regulations	
Building & Fire Code	Use NYS established codes
Agricultural and Farmland Protection Plan	County level plan

The village is managed by a Mayor and a Village Board consisting of 4 individuals. The Mayor serves as the emergency manager. There is a planning and a zoning board. There are no engineers employed by the town they are hired on an as needed basis. There is a floodplain manager/code enforcement officer. Land surveyors are hired as needed for projects. The NYS DEC provides scientific expertise regarding community hazards. There is GIS support provided by the county and by the highway department. Grant writers as well as fiscal staff are hired as needed.

The Village of Champlain uses various sources of funding for projects and programmatic implementation. Community Development Block Grants (CDBG) have been used to replace water lines. There are special taxes associated with water and sewer that are used to maintain the system. There is an infrastructure and water and sewer agreement with the Town of Champlain. The Fire department is also shared with the Town of Champlain

The Village of Champlain does not participate in any Education and Outreach programs.

A self-assessment in four areas was completed for the town. Planning and regulatory capabilities, and education and outreach were ranked as moderate. Administrative and technical, and financial capabilities were ranked as high. Lack of resources are addressed with either hiring supports or utilizing their partnership with the Clinton County Government.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

VILLAGE OF CHAMPLAIN CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	Yes	No	Yes	
Critical Vehicle and Equipment Storage	No	No	Yes	Town Hall.
Emergency Operations Center	No	No	Yes	Town Hall.
Public/Private Utility Facilities	No	No	?	Champlain Phone Company
Drinking water and wastewater treatment plant	Yes	No	Yes	Water: built above flood height, wastewater: berm built around facility (after 1996 flood)

The town hall is the Emergency Operations Center and serves as the critical vehicle and equipment storage site. There are no medical facilities, nursing homes, or blood banks within the town. There are no daycare facilities. Sewage treatment is provided by the Town of Champlain. There are no drug and alcohol treatment centers nor are there any homeless shelters.

There are no locations within the Village of Champlain that have been designated as locations for temporary housing in the event of a disaster. In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Village of Champlain. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 8 repetitive loss structures in the Village of Champlain.

The Village of Champlain will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain

managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

VILLAGE OF CHAMPLAIN FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
8	2	33	\$131,527

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

VILLAGE OF CHAMPLAIN HAZARD RANKING				
		Impact		
		High	Med	Low
Probability	High			
	Med		Extreme Cold, Floods, High Winds and Tornadoes	
	Low	Dam Failure, Ice Storms		Avalanche, Drought, Earthquake, Extreme Heat, Hail Storms, Hurricanes, Landslides, Seiche Flood, Severe Winter Storms, Thunderstorms, Transportation (truck), Wildfire

Potential Loss:

Potential loss was calculated for the Village of Champlain. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of

structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 6 codes on the Clinton County Real Property Tax Services website:

100 Agriculture	200 Residential	300 Vacant Lands
400 Commercial	600 Community Services	800 Public Service

VILLAGE OF CHAMPLAIN POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	31.1	0	\$0.00	0	\$0.00
200	102.9	378	\$29,626,800.00	37.8	\$2,962,680.00
300	340.7	55	\$41,900.00	5.5	\$4,190.00
400	132.0	56	\$18,061,100.00	5.6	\$1,806,110.00
600	11.6	6	\$171,700.00	0.6	\$17,170.00
800	4.4	1	\$365,600.00	0.1	\$36,560.00
Total	622.7	496	\$48,267,100.00	49.6	\$4,826,710.00

VILLAGE OF CHAMPLAIN STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	13	\$375,700
300	1	\$4,000
400	27	\$1,886,000
Total	41	\$2,265,700

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

The Village of Champlain reviewed the county project list from the 2014 plan. They have included a status of efforts in the Village of Champlain to advance on these county mitigation project. Projects listed in the 2014 plan specific to the Village of Champlain were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by the Village of Champlain as the plan was being updated in 2020.

VILLAGE OF CHAMPLAIN 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding/ ice jams	Remove debris, dredge along Great Chazy River in Shallow areas	Clean debris from river above and below Main Street bridge.	Village executives, county/local DPW	H	Fall 2013	H	Incomplete		DEC would not permit action
Reduce impact of flooding	Provide constant flow of Great Chazy River during ice jams	Install flood control walls to keep ice within riverbank along the Great Chazy River	Village executives, county/local DPW	H	Ongoing LT	H	Complete (2018), county and village partnership	Remove ice from river with long stick excavator	
Reduce impact of flooding/ ice jams	Remove major natural gas line from under main street bridge Great Chazy River	Relocate the natural gas line to reduce the chance of losing major gas supply lines	Village executives, county/local DPW, NYSEG	?	Ongoing (Fall 2013)	H	Not complete		

VILLAGE OF CHAMPLAIN MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Update Village planning documents	Update CEMP, CMP, and zoning maps	Update Comprehensive Emergency Management Plan and Comprehensive Plan, update zoning map	All	Village Executives	H	2021-2025	Village Budget	H	#1 Local Plans and Regulations
2. Maintain Village water system	Replace water system lines to increase capacity of water system	Replace water lines as needed to increase capacity and integrity to reduce loss of water	All	Village Executives	L	Ongoing	Town Budget	M	#2 Structural and Infrastructure Projects
3. Maintain ditches in Village	Clear ditches and establish maintenance plan to maintain storm water conveyance and reduce road flooding	Clear ditches of debris and establish a maintenance plan in Village of Champlain	Flooding	Village Executives	L	2021-2025	Town Budget (SWCD)		#2 Structural and Infrastructure Projects

4. Buyout homes	Buyout homes that have been damaged in past floods to prevent future flood damages	Buyout homes that have been damaged in past floods along Main St., and River St.	Flood	Village Executives	M	2021-2025	FEMA		#2 Structural and Infrastructure Projects
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ArcGIS Maps for Village of Champlain:

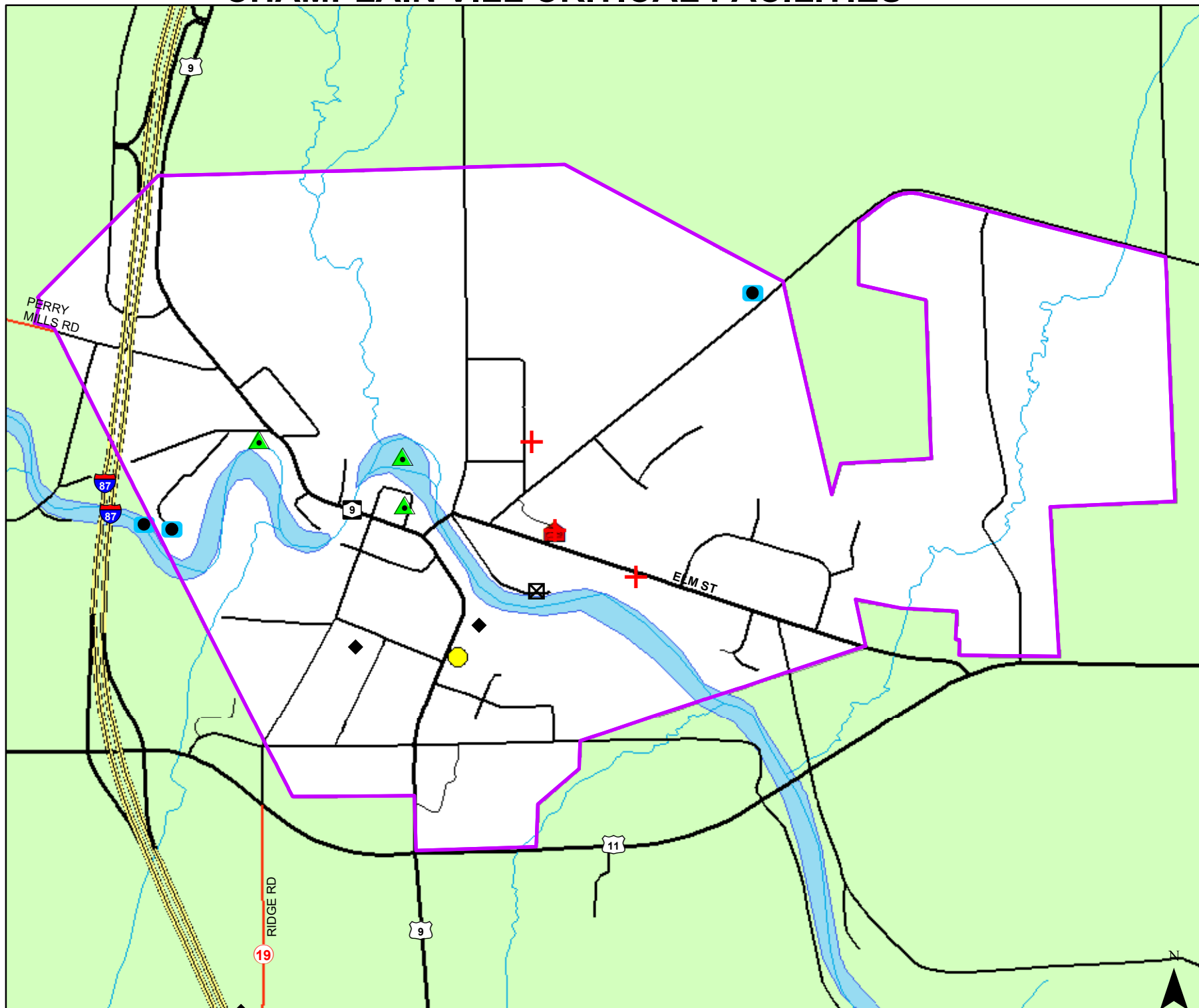
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

CHAMPLAIN VILL CRITICAL FACILITIES

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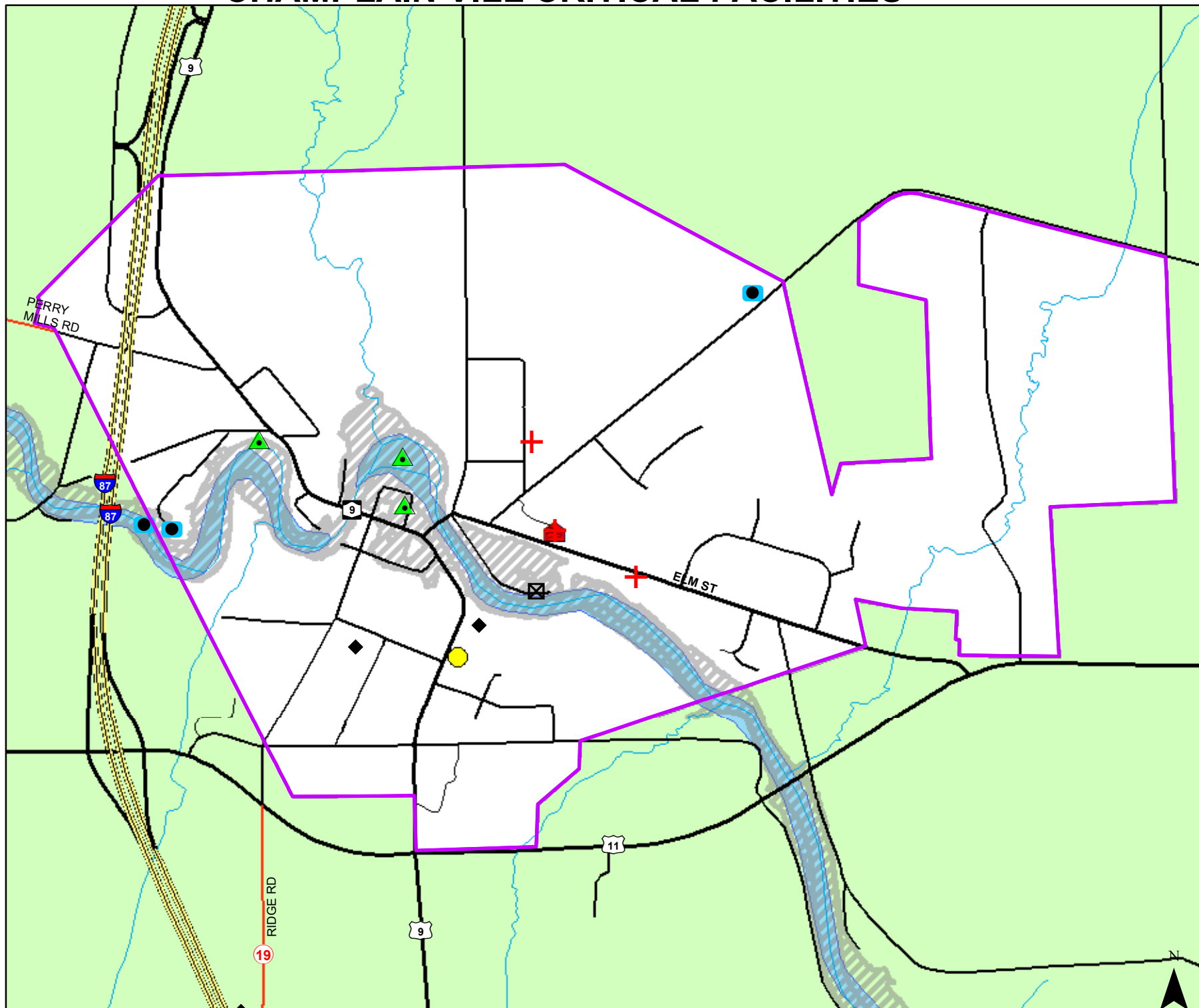
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- Hydro_Generation
- Flood_Control_Structure
- Water_Supply
- Communications
- Sewage_Water_TX
- EOC_Locations
- Red_Cross_Shelters
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CHAMPLAIN VILL CRITICAL FACILITIES

LEGEND

- Municipal Boundary
- Natural_Gas
- Hydro_Generation
- Flood_Control_Structure
- Water_Supply
- Communications
- Sewage_Water_TX
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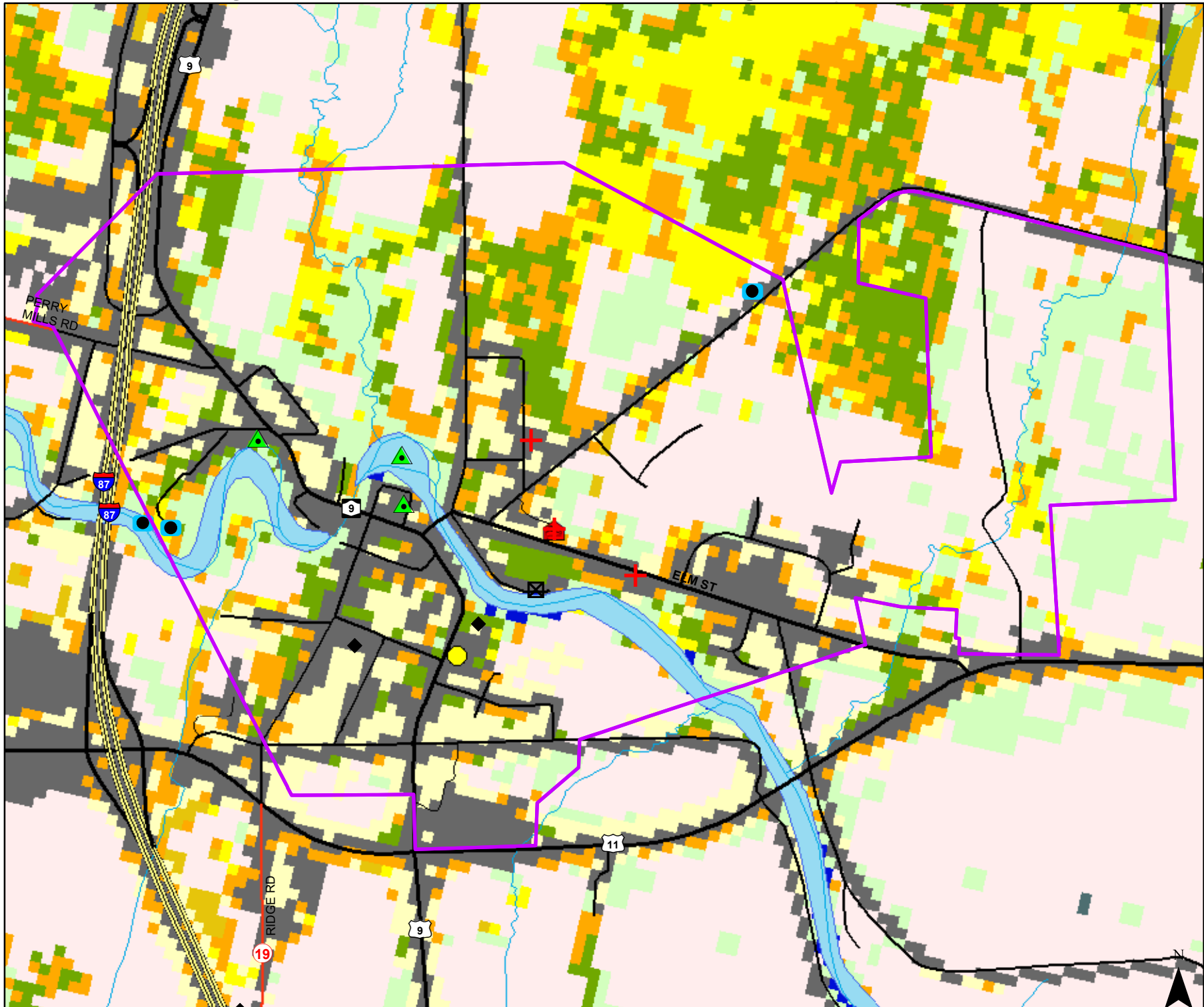
CHAMPLAIN VILL WILDFIRE FUEL MAP

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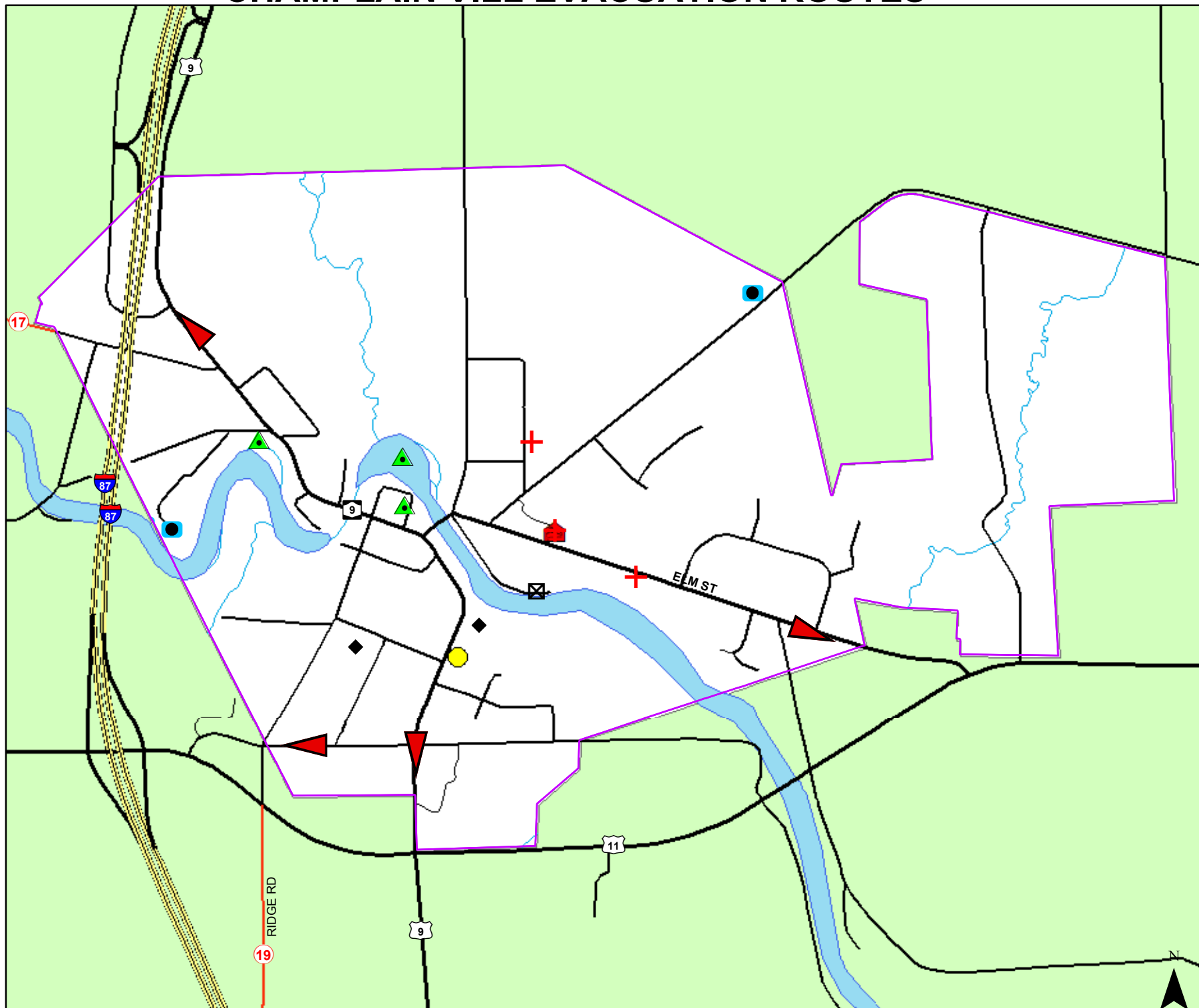
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-  FBFM10
-  Urban
-  Agriculture
-  Water
-  Barren
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers
-  Fire_Stations
-  Airstrip



CHAMPLAIN VILL EVACUATION ROUTES

LEGEND

- Evacuation Route
- Municipal Boundary
- Natural_Gas
- Hydro_Generation
- Flood_Control_Structure
- Water_Supply
- Communications
- Sewage_Water_TX
- EOC_Locations
- Red_Cross_Shelters
- Schools
- Electric_Substation
- Dams2019
- Police_stations
- Nursing_Homes
- Airport_Terminal
- Bus_Station
- Ferry_Dock
- Highway_Garages
- Town_Municipal_Halls



Town of Chazy

Introduction:

The Town of Chazy is located in the northeastern corner of the county. The town was first settled in 1763, but official formed in 1804. It is bordered to the north by the towns of Champlain and Mooers (although only a little in the northwestern corner), to the west by the Town of Altona, and to the south by the town of Beekmantown. To the east Chazy is bordered by Lake Champlain.

The Little Chazy River runs through the town and empties in Lake Champlain near Chazy Landing. Lake Alice and the Lake Alice Wildlife Management Area are located within the town as well. William H. Miner named Lake Alice after his wife and created the body of water in an effort to provide hydroelectric power to the Heart's Delight Farm through the damming of Tracy Brook. Lake Alice is a popular fishing spot and is stocked by the DEC with largemouth bass. The Lake Alice Wildlife Management Area consists of 1,468 acres and features a variety of habitats with trails suitable for hiking, snowshoeing, cross country skiing, and birdwatching. During the fall pheasants are stocked within this area for the benefit of local hunters.

The William H. Miner Agricultural Research Institute is an important educational institution located within the town. There are college level classes offered in partnership with the State University of New York at Plattsburgh, Vermont Technical College, and the University of Vermont. The school is a dairy farm as well as maintaining Morgan horses for the purposes of research. The research conducted by the school includes crop-animal-environment interactions, cow comfort and behavior, and equine reproductive management. The farm welcomes the public on a frequent basis and is a popular field trip destination for local schools.

There are several historic sites and museums located within the town. The Alice T. Miner Colonial Collection is a house built that was built in 1824 and is furnished with period appropriate furnishings. William Miner's one room schoolhouse is located near the Heart's Delight Farm. The Heart's Delight Farm maintains a small museum chronicling the works of William H. Miner as well as the agricultural history of the area.



TOWN OF CHAZY TABLE OF FACTS	
Land Area	61.3 sq. miles, 39,232 acres
Incorporated Villages	N/A
Hamlets	Chazy Landing, Ingraham, Sciota, West Chazy
2010 Population Census	4,284
Population Density	69.9 people/sq. mile
Governance	Supervisor and Town Council
Total Assessed Valuation	\$ 329,629,782
Highest Elevation	190'
Largest Lake	Lake Alice
Rivers	Little Chazy River
Dams	2
Bridges	20
Interstate Highway	I-87
State Routes	9, 9B, 191, 22
Land Classified: Agricultural	11,355.4 acres
Land Classified: Industrial	141.1 acres
Land Classified: Residential	9,360.6 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Chazy Volunteer Fire Department, West Chazy Fire Station
Schools	Chazy Central Rural school, William H. Miner Agricultural Research Institute
Railroads	Canadian-Pacific Rail Line
Interstate Bridge	7
Law Enforcement	State Police Department
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Miner Lake, Private Wells
Emergency Shelters	Chazy Rec Park, Pfizer Building
Critical Facilities	Police station, Fire Station (Chazy Volunteer, West Chazy), Town Garage, Town Hall, Chazy Water District

Planning Process:

A meeting was held December 11th, 2019 with town officials and staff to obtain the information for the updated plan.

Capability Assessment:

The Town of Chazy has several planning mechanisms in place.

TOWN OF CHAZY PLANNING DOCUMENTS	
Document	Notes
Comprehensive Emergency Management Plan	Includes continuity of operations
Hazard Mitigation Plan	
Zoning Regulations	Subdivision regulations and comprehensive land use plan are included
Capital Improvement Plan	
Economic Development Plan	Lots near Miner Institute for development
Farmland Preservation Plan	
Building & Fire Code	Use NYS established Codes

The town is managed by a Town Supervisor and four Town Councilors. The Town Supervisor serves as the emergency manager. Chazy has a planning board that consists of 5 individuals and a chairperson. They hire engineers as needed, and their code enforcement officer has a background in construction. The code enforcement officer serves as floodplain management. Land surveyors are hired as needed. The DEC and the fire departments provide expertise on community hazards. Clinton County provides supports for GIS and grant writing.

The Town of Chazy uses various financial resources for the completion of projects. Capital Improvement Programming was used for sewer improvements. There is a lighting district tax, and water and sewer fees that are used for systems maintenance. Shared service agreements exist with surrounding localities and the county.

Chazy participates in Firewise Communities as part of their Education and Outreach. This program addresses wildfire risk and risk management and involves a fire assessment that is to be updated every 5 years. Natural disaster and safety related programs are delivered in coordination with local schools. EMTs, the highway department, and the fire department all perform education and outreach in the town. The fire department particularly addresses fire safety as well as distributing information regarding burn bans.

A self-assessment in four areas was completed for the town. Planning and regulatory capabilities, administrative and technical capabilities were ranked as high. Financial resources were ranked as being moderate. Education and outreach was ranked as limited.. Lack of resources are addressed with either hiring supports or utilizing their partnership with the Clinton County Government.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF CHAZY CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Police Station	No	No	Yes	N/A
Fire Station	No	No	Yes	Both Fire stations are located outside of the floodplain and have generators. They were used in the ice storm as a temporary shelter.
Critical Vehicle and Equipment Storage	No	No	Yes	Town garage
Emergency Operations Center	No	No	Yes	Town Hall
Utility/Power Generating Stations	Yes	No	Yes	Substation in West Chazy, Department of water
Wastewater Treatment Plant	Yes	No	Yes	Constructed a berm around the plant

The town hall serves as the Emergency Operations Center. The town does not have medical facilities. There are two schools within the town the Chazy Rural Central School and the William H. Miner Research Institute. The town provides drinking water and sewage treatment to its residents. There are no drug and alcohol treatment facilities, nor are there any homeless shelters within the town. Tier 2 facilities do not exist in the Town of Chazy.

Two locations within the town have been designated areas for temporary housing needs in the event of a disaster:

TOWN OF CHAZY TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Recreation Park, North Farm Rd	Public	N	Y	Y	Y
Former Pfizer Building, Ayerst Lab Road.	Private	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Chazy. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 2 repetitive loss structures in Chazy.

Chazy will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF CHAZY FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
2	28	17	\$321,190

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF CHAZY HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Floods	Severe Winter Storms	
	Med		Thunderstorms	
	Low	Ice Storms		Avalanche, Dam Failures, Drought, Earthquake, Extreme Cold, Extreme Heat, Hail Storms, High Winds and Tornadoes, Hurricanes, Landslides, Seiche Floods, Transportation, Wildfires

Potential Loss:

Potential loss was calculated for the Town of Chazy. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

100 Agriculture	200 Residential	300 Vacant Lands
400 Commercial	500 Recreation/ Entertainment	600 Community Services
700 Industrial	800 Public Service	900 Forest, Conservation Lands, and Parks

TOWN OF CHAZY POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	11,355.4	38	\$15,621,600	3.8	\$1,562,160
200	9,360.6	1,668	\$173,873,700	166.8	\$17,387,370
300	6,704.8	72	\$743,500	7.2	\$74,350
400	183.1	61	\$8,231,100	6.1	\$823,110
500	208.9	7	\$1,047,000	0.7	\$104,700
600	3,085.8	27	\$9,766,000	2.7	\$976,600
700	141.1	1	\$2,632,200	0.1	\$263,220
800	178.4	13	\$6,906,282	1.3	\$690,628
900	1,608.6	2	\$75,300	0.2	\$7,530
Total	32,826.6	1,889	\$218,896,682	188.9	\$21,889,668

TOWN OF CHAZY STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	50	\$7,029,600
300	1	\$17,700
400	1	\$102,700
500	1	\$20,100
800	1	\$28,600
Total	54	\$7,198,700

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Chazy reviewed the county project list from the 2014 plan. They have included a status of efforts in Chazy to advance on these county mitigation project. Projects listed in the 2014 plan specific to Chazy were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Chazy as the plan was being updated in 2020.

TOWN OF CHAZY 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce the threat of damage to property and infrastructure	Maintain/upgrade two dams in Chazy	Town executives, county/local DPW, Fire District	H	LT	M	Not completed		Not enough funding

TOWN OF CHAZY MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Main St.	Reduce impact of flooding and danger of roadway washout	Repair section of Main St. near fire station to prevent flooding and washouts	Flooding	Town executives, county/ local DPW	H	2022	Town Budget	H	#2 Structural and Infrastructure Projects
2. LaPoint Rd.	Reduce impact of flooding	Raise section of LaPointe Rd to reduce impact of flooding	Flooding	Town executives, county/ local DPW	H	2021-2025	?	H	#2 Structural and Infrastructure Projects
3. Miner Dam	Prevent dam failure and reduce likelihood of flooding	Maintain/ upgrade Miner Dam to prevent breaches, study will determine best method	Flooding	Town executives, county/ local DPW, Fire District	H	2021-2025	DEC	H	#2 Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
4. Purchase new snow blower	Increase winter storm response and preparedness	Purchase new snow blower to increase readiness, response/recovery	Severe Winter Storms	Town Supervisor	L	2022	Town Budget	H	#2 Structural and Infrastructure Projects
5. Town codes and projects	Review and update town codes and projects.	Review and update town codes such as floodplain ordinance, zoning and projects to ensure consistency and strengthen areas that are vulnerable to natural hazards.	All	Town Supervisor, Planning Board	L	2022	Town Budget	H	#1 Local Plans and Regulations
6. Rover's Farm Stream	Stabilize the banks of Rover's Farm Stream to reduce impacts of flood and erosion	Stabilize the banks of Rover's Farm Stream will reduce impacts of flooding and erosion.	Flooding	Town Supervisor	M	2021-2025	SWCD	H	#2 Structural and Infrastructure Projects





















ArcGIS Maps for Town of Chazy:

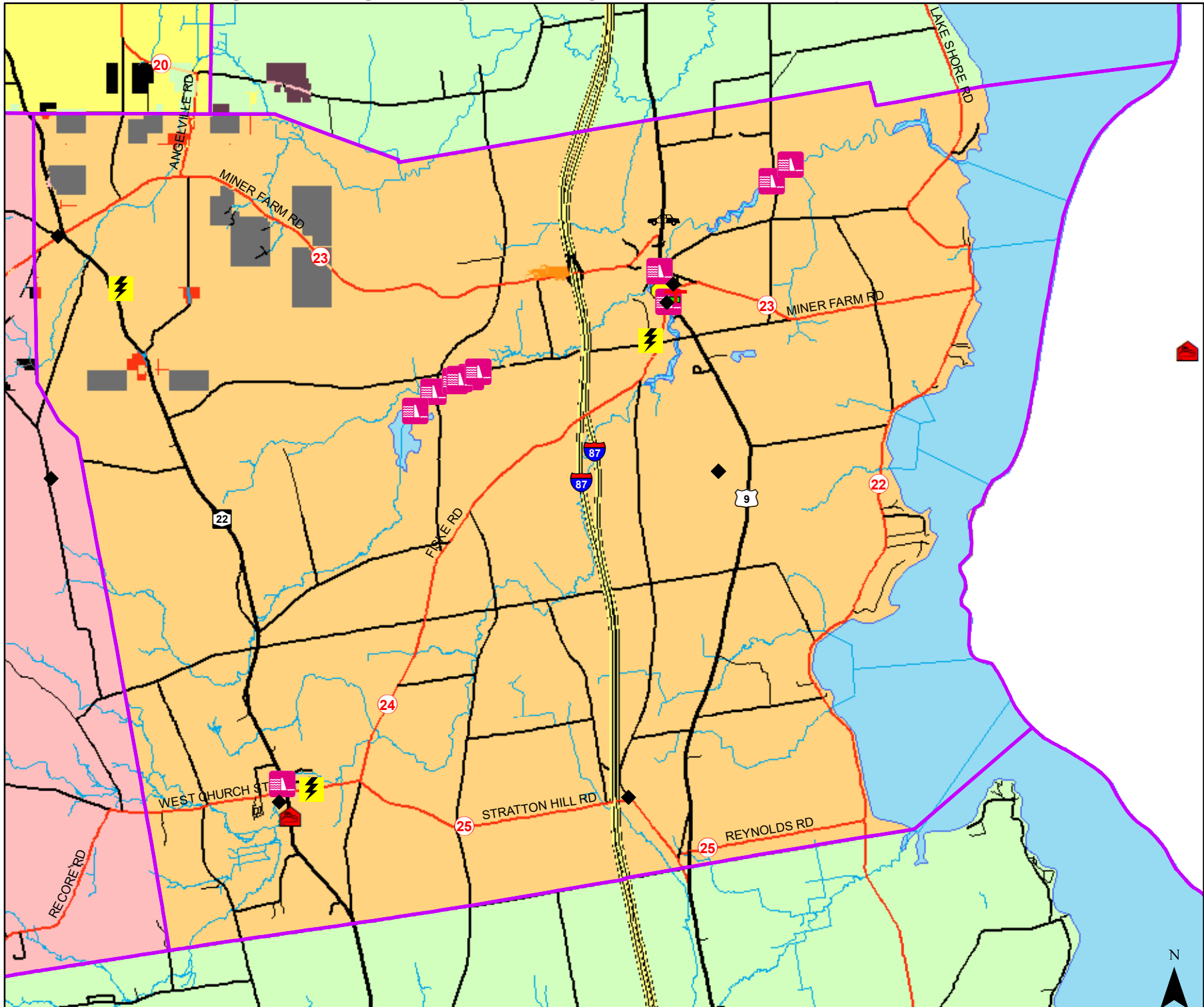
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

CHAZY CRITICAL FACILITIES





















LEGEND

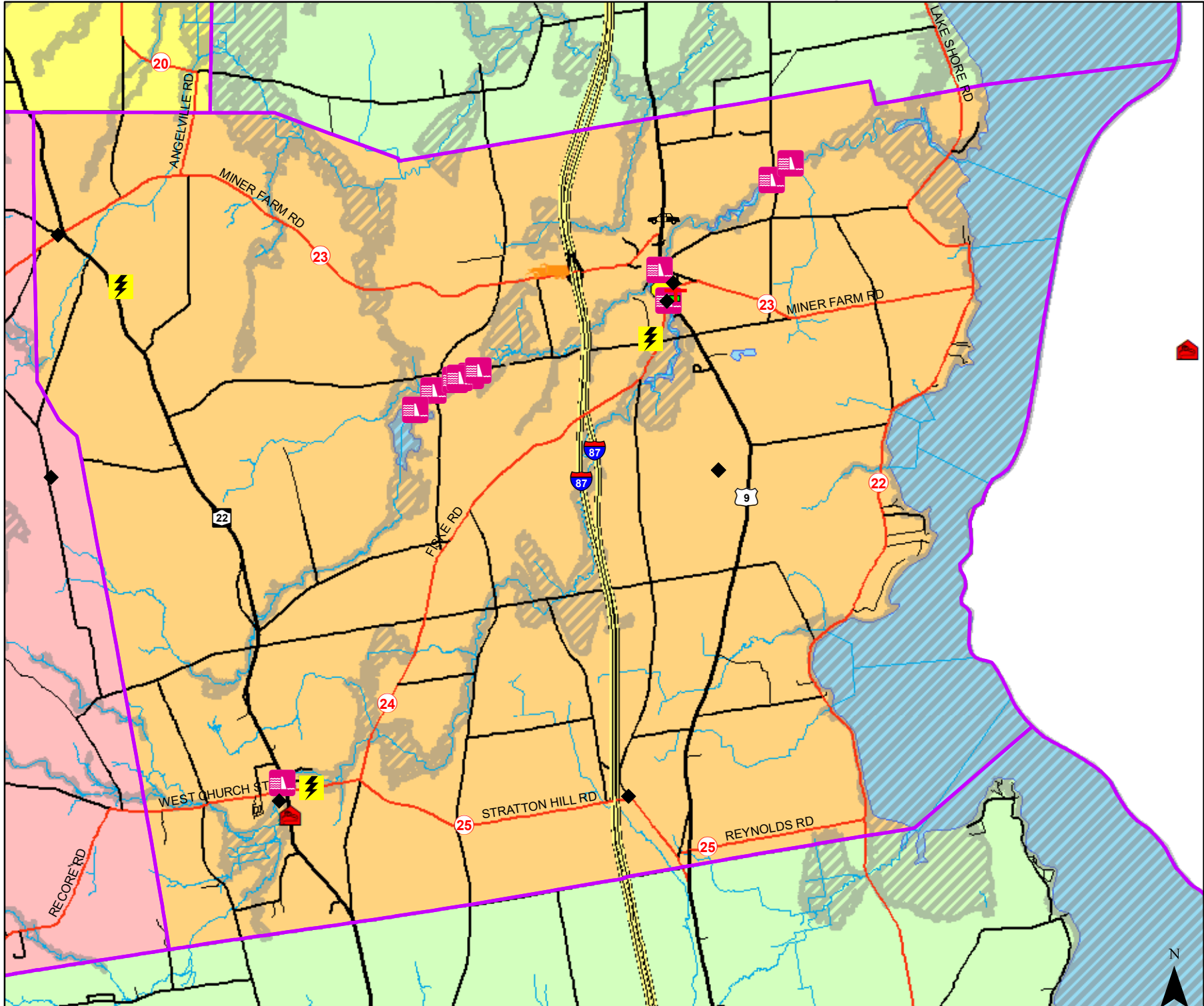
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-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
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-  Town_Municipal_Halls
-  Health_Centers



CHAZY CRITICAL FACILITIES

LEGEND

-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
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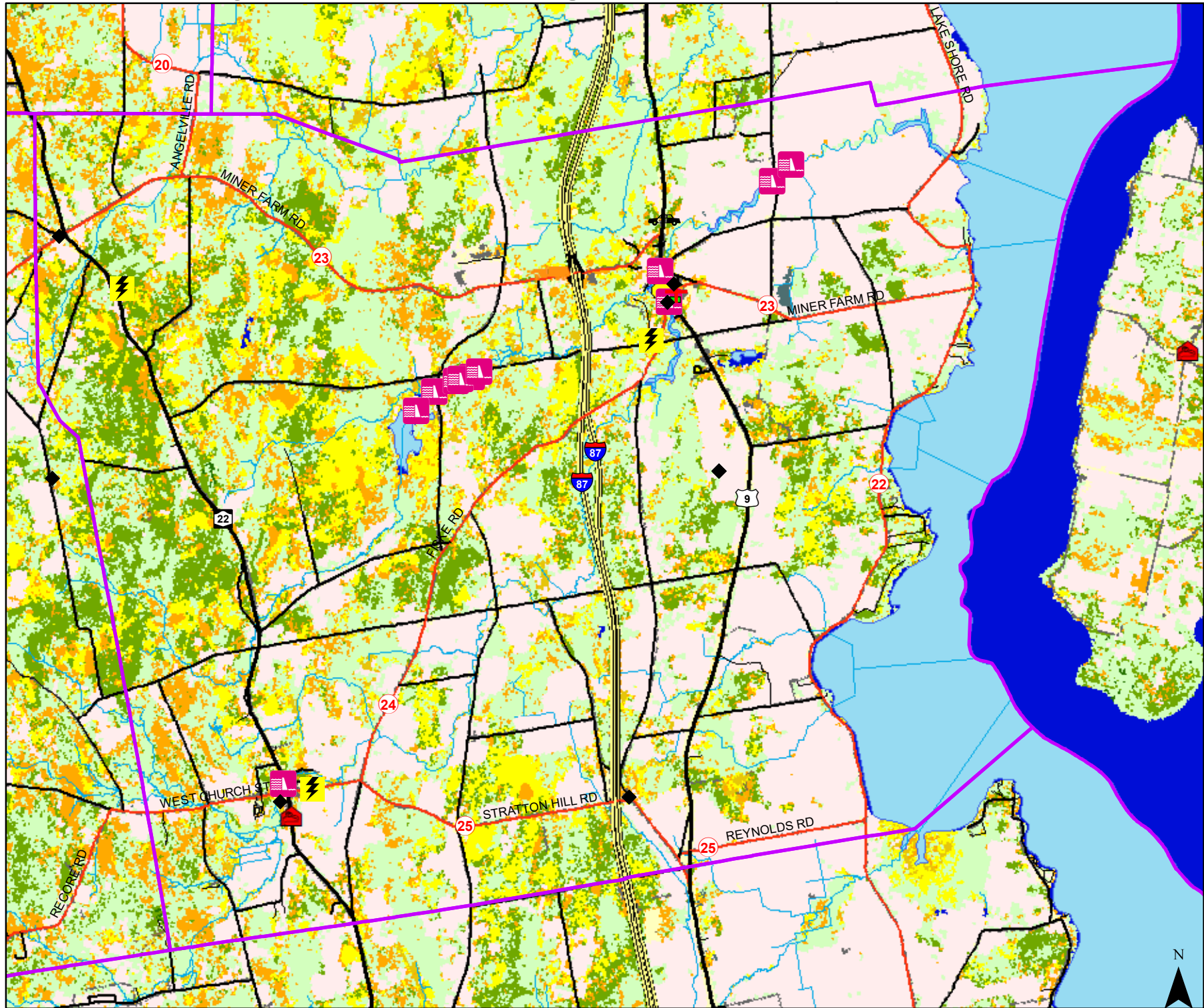
CHAZY WILDFIRE FUEL MAP

LEGEND

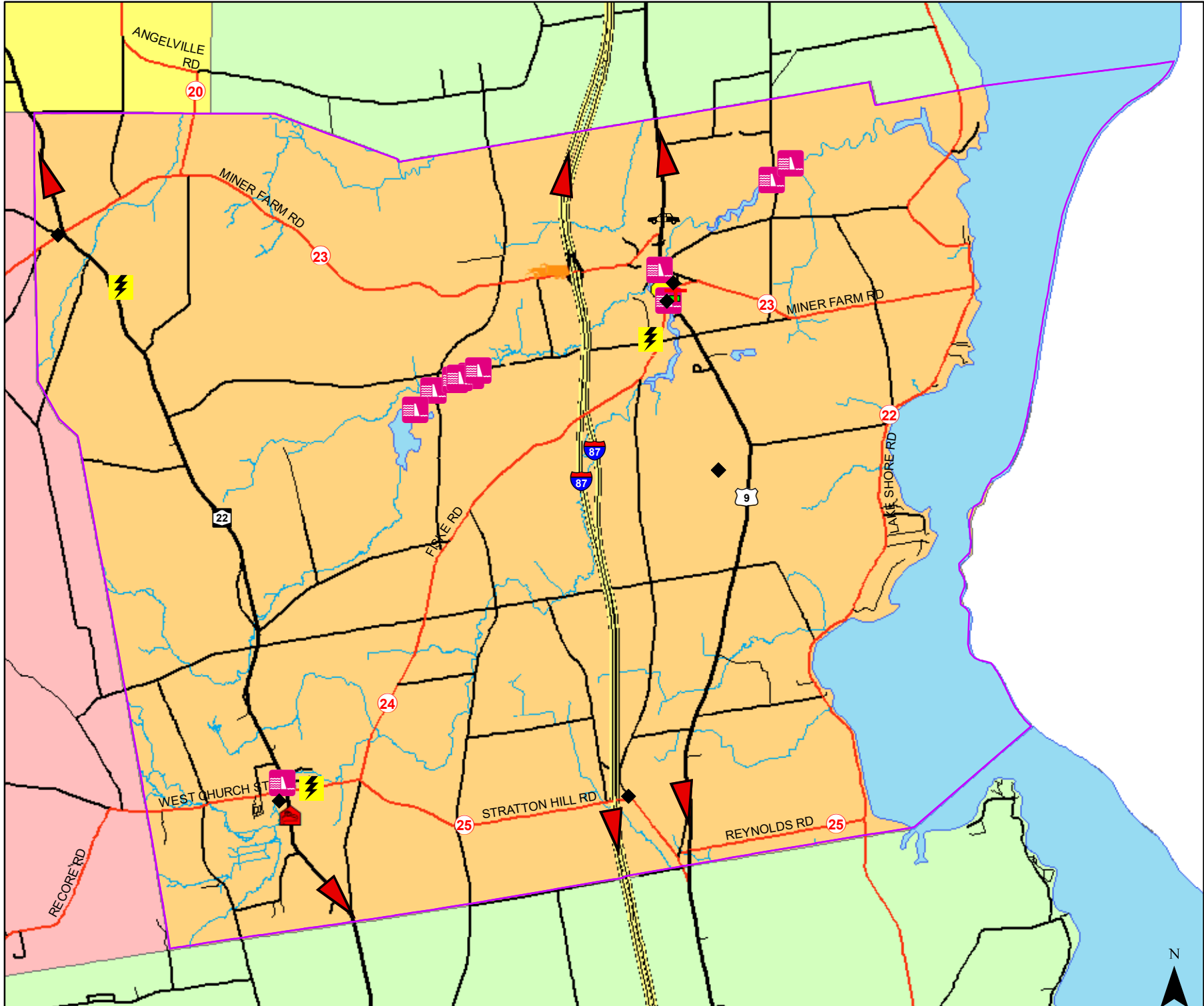
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FBFM13

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-  FBFM2
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-  FBFM4
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-  FBFM6
-  FBFM7
-  FBFM8
-  FBFM9
-  FBFM10
-  Urban
-  Agriculture
-  Water
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-  Fire_Stations
-  Airstrip



CHAZY EVACUATION ROUTES



LEGEND

- Evacuation Route
- Municipal Boundary
- Natural_Gas
- Hydro_Generation
- Flood_Control_Structure
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Town of Clinton

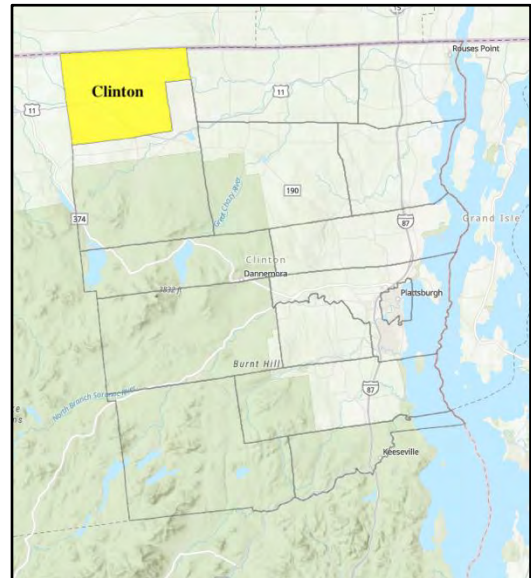
Introduction:

The Town of Clinton is located in the northwestern corner of Clinton County. It is bordered to the east by Mooers, to the south by Ellenburg, to the west by Franklin county (town of Chateaugay), and to the north by the Canadian border. Settled in the early 1800s the town was formed in 1845 when it separated from Ellenburg.

Along the border the Churubusco-Franklin Centre Border Crossing is one of the stations located in Clinton County. This station however only provides access southbound from Canada to the US as in 2011 Canada closed its port of entry at this location.

The Town of Churubusco is named after the Battle of Churubusco and 1847 battle in the Mexican-American war. Some of the individuals that fought for the US in the war moved to the area after the fight and the town was named in honor of those troops.

Frontier, a hamlet located along the Canadian border in the Town of Clinton is the oldest settlement in the town.



TOWN OF CLINTON TABLE OF FACTS	
Land Area	67.1 sq. miles (42,944 acres)
Incorporated Villages	N/A
Hamlets	Churubusco, Clinton Mills, Frontier
2010 Population Census	737
Population Density	10.98 people/sq. mile
Governance	Town Supervisor and Town Council
Total Assessed Valuation	\$ 62,594,800
Highest Elevation	1,168'
Largest Lake	N/A
Rivers	English River
Dams	0
Bridges	5
Interstate Highway	N/A
State Routes	11, 189
Land Classified: Agricultural	4,712.2 acres
Land Classified: Industrial	N/A
Land Classified: Residential	12,454.6 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Churubusco Volunteer Firemen
Schools	N/A
Railroads	N/A
Interstate Bridge	N/A
Law Enforcement	US Border Patrol
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Private wells
Emergency Shelters	Senior Center
Critical Facilities	Town Hall, Fire Department

Planning Process:

A meeting was held with officials and staff from the Town of Clinton on December 19th, 2019.

Capability Assessment:

The Town of Clinton has several planning mechanisms in place.

TOWN OF CLINTON PLANNING DOCUMENTS	
Document	Notes
Floodplain Regulations	
Capital Improvement Plan	
Farmland Protection Plan	
Building & Fire Codes	Use NYS established codes

The town is managed by a Town Supervisor that also serves as the Emergency Manager in times of need. There is no planning board, however, there is a Wind Board Committee that oversees the windmills in the town. There are over 100 wind turbines in the town, construction of the first turbines began in 2006/2007. Engineers and land surveyors are hired as needed. The DEC is used for scientific support regarding local hazards. There is a Code Enforcement Officer that manages the floodplains. The County Planning Department is used for GIS support. Grant writers and fiscal staff are hired as needed by the town.

Clinton uses a variety of sources for funding town programming and projects. Capital improvement programming has been used by the town. Community Development Block Grants (CDBG) have been used in the past for home repair and replacement. There are taxes collected for the Fire and Ambulance district. Shared services and partnering arrangements exist with the towns of Ellenburg and Chateaugay.

The town of Clinton has limited education and outreach. There is fire safety provided in partnership with schools. Hunting clubs are local citizen groups working toward environmental protection within the town.

A self-assessment was completed for the town in four areas. Planning and Regulatory capacity was rated as moderate. Administrative and technical, and financial capacities were rated as high. Education and Outreach was rated as limited with no plan on changing the current level of services to the community.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF CLINTON CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	No	No	Yes	Churubusco Volunteer Firemen
Critical Vehicle and Equipment Storage	No	No	Yes	Highway garage
Emergency Operations Center	No	No	Yes	Town Hall and Fire Station
Utility and Power Generating stations	No	No	No	Over 100 windmills located within the town.

The town hall serves as the communications center. There are no medical facilities within the town boundaries. No schools exist in the town, but there are private day cares. There are no utility facilities, though there are windmills in the town. There are no drinking water or wastewater treatment plants. No Drug and alcohol treatment centers, or homeless shelters are present within the town. Tier 2 facilities do not exist within the town of Clinton.

There is one location suited for housing of displaced residents, the town park does not have electricity (though it can be obtained), sewer or water, but it is a public park that would be available for temporary housing.

TOWN OF CLINTON TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Town Park	Public	N	Y	N	N

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Clinton. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are no repetitive loss properties in the Town of Clinton.

The Town of Clinton will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF CLINTON FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
0	0	1	\$22,733

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF CLINTON HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High		High Winds and Tornadoes, Ice Storms, Severe Winter Storms	
	Med			Drought, Floods, Thunderstorms
	Low		Transportation (truck)	Earthquake, Extreme Cold, Extreme Heat, Hail Storms, Hurricanes, Wildfires

Potential Loss:

Potential loss was calculated for the Town of Clinton. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the

number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 7 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture
- 200 Residential
- 300 Vacant Lands
- 400 Commercial
- 600 Community Services
- 800 Public Service
- 900 Forest, Conservation Lands, and Parks

TOWN OF CLINTON POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	4,712.2	21	\$1,597,700	2.1	\$159,770
200	12,454.6	340	\$18,978,000	34.0	\$1,897,800
300	20,192.6	17	\$2,171,000	1.7	\$217,100
400	45.6	8	\$1,007,300	0.8	\$100,730
600	8.5	8	\$745,600	0.8	\$74,560
800	574.8	5	\$13,806,500	0.5	\$1,380,650
900	4,121.5	12	\$292,200	1.2	\$29,220
TOTAL	42,109.8	411	\$38,598,300	41.1	\$3,859,830

The Town of Clinton does not have structures located within the SFHA.

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

The Town of Clinton reviewed the county project list from the 2014 plan. They have included a status of efforts in the Town of Clinton to advance on these county mitigation project. Projects listed in the 2014 plan specific to the Town of Clinton were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by the Town of Clinton as the plan was being updated in 2020.

TOWN OF CLINTON 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding/ ice jams	Install/ upgrade pipe under existing bridge Goal 1	Replace antiquated pip with two pipes each 60' long and 5' wide	H- \$15,000 per pipe	Town executive, county/ local DPW	2013-2014 ST	H	Will be replaced with a box culvert	In progress	
Reduce impact of flooding/ ice jams	Reduce flooding of homes and road washouts Goal 1	Install proper drainage, 6:24 in drainage with couplers	L- \$8,000	Town executive, county/ local DPW	2013-2014 ST	H		Not Completed	Lack of Funding
Reduce impact of flooding/ ice jams	Reduce road washouts and deterioration in low lying areas Goal 1	Clearing, cutting, clearing of brush and tree limbs	H- \$18,000 (current funding)	Town executive, county/ local Code Enforcement	Ongoing LT	L	Ongoing	Ongoing project	
Reduce impact of flooding/ ice jams, severe storms	Reduce road washouts and deterioration by ditching Goal 1	Clearing tree limbs, ditching, cleaning culverts on the following roads: Patnode, Whalen, LaFrance	H- \$50,000 (current funding)	Town executive, county/ local Code Enforcement	2013 ST	M	Culverts cleaned		

TOWN OF CLINTON MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Adopt the updated CEMP	Officially adopts the CEMP released by CCOES	Officially adopt the updated CEMP released by CCOES, to help coordinate mitigation actions on a regional level	All Hazards	Town Supervisor/ CCOES	L	2021	N/A	H	1. Local Plans and Regulations
2. Develop a tree maintenance plan for roadways/ power lines	Tree maintenance plan will assess and outline procedures to schedule elimination of vegetation near power lines. Continue current efforts until plan is developed	Clearing and cutting of brush and tree limbs to prevent damage to low lying roads and to power lines.	All	Town Supervisor, Code Officer, Town Highway	L	Ongoing	Town Budget	L	2. Structural and Infrastructure Projects

<p>3. Develop storm water conveyance system to mitigate flooding in town</p>	<p>New storm water plan will assess culverts and document cleaning of culverts to reduce flooding in town. Debris needs constant management to prevent roadway washout</p>	<p>Plan will assess culverts and develop plan for cleaning of culverts. Routine cleaning of culverts helps prevent road washout.</p>	<p>Flood</p>	<p>Town Supervisor, Code Officer, Town Highway</p>	<p>L</p>	<p>Ongoing</p>	<p>Town Budget</p>	<p>M</p>	<p>2. Structural and Infrastructure Projects</p>
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ArcGIS Maps for Town of Clinton:

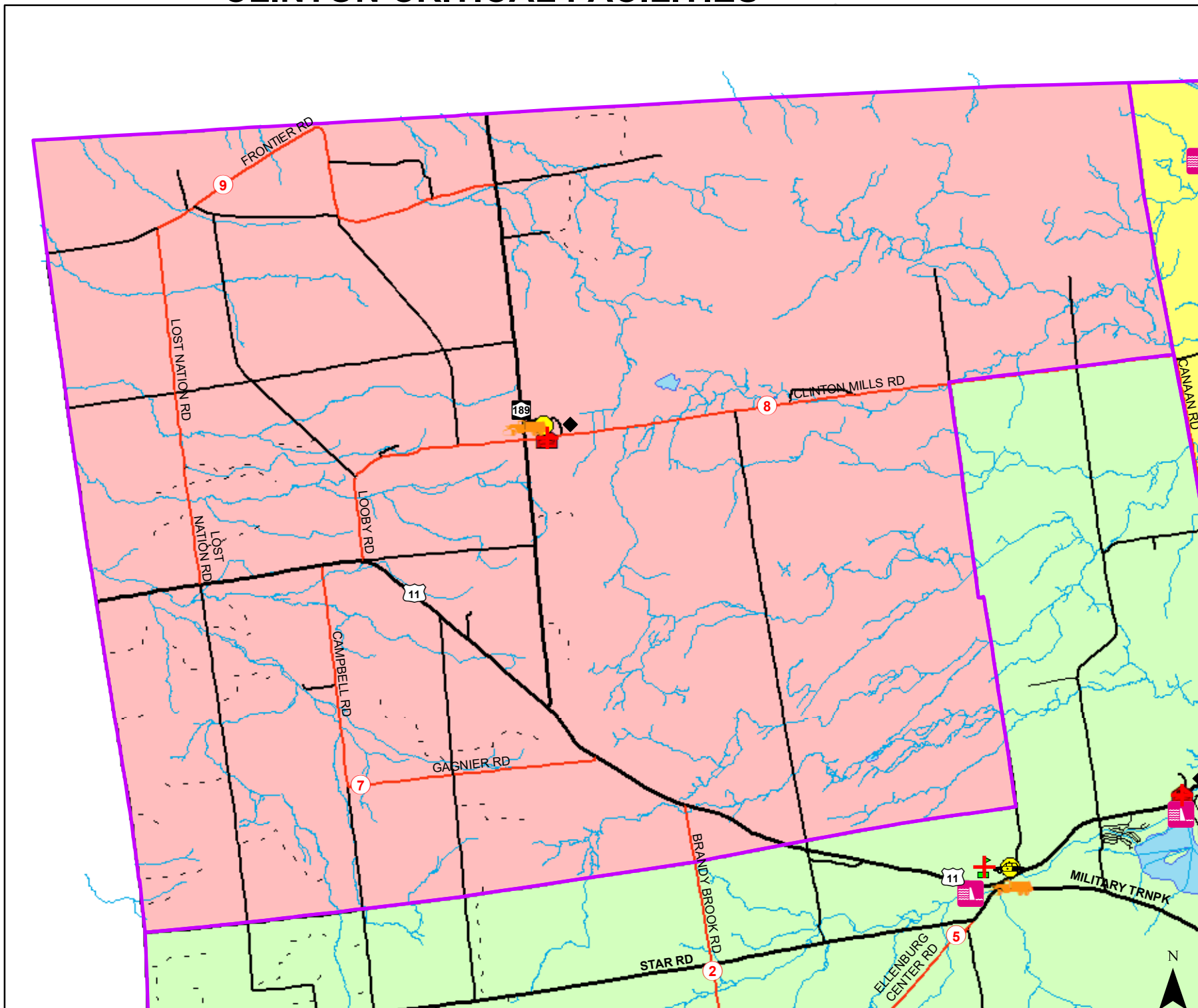
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

CLINTON CRITICAL FACILITIES





















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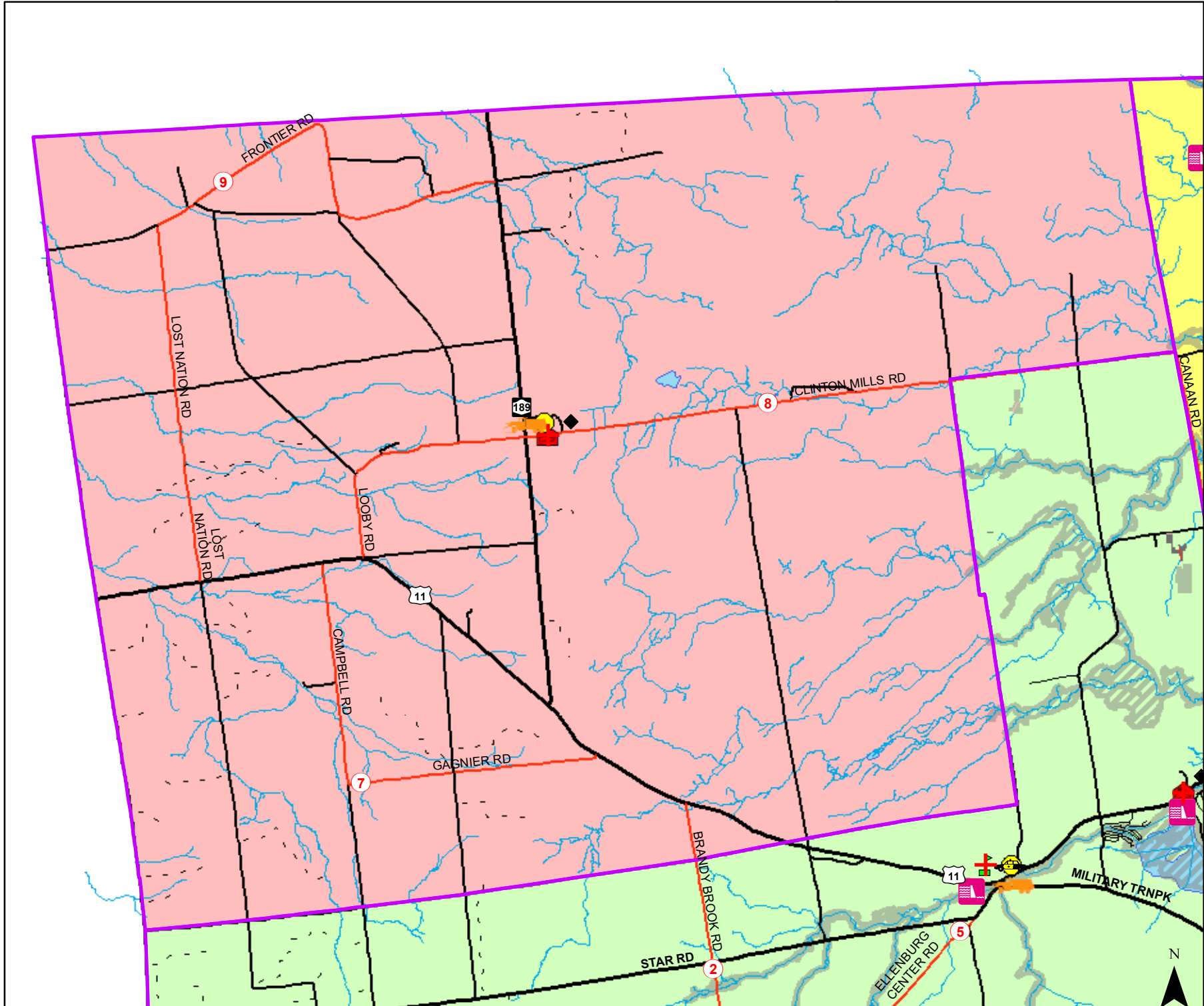
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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
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-  Health_Centers



CLINTON CRITICAL FACILITIES

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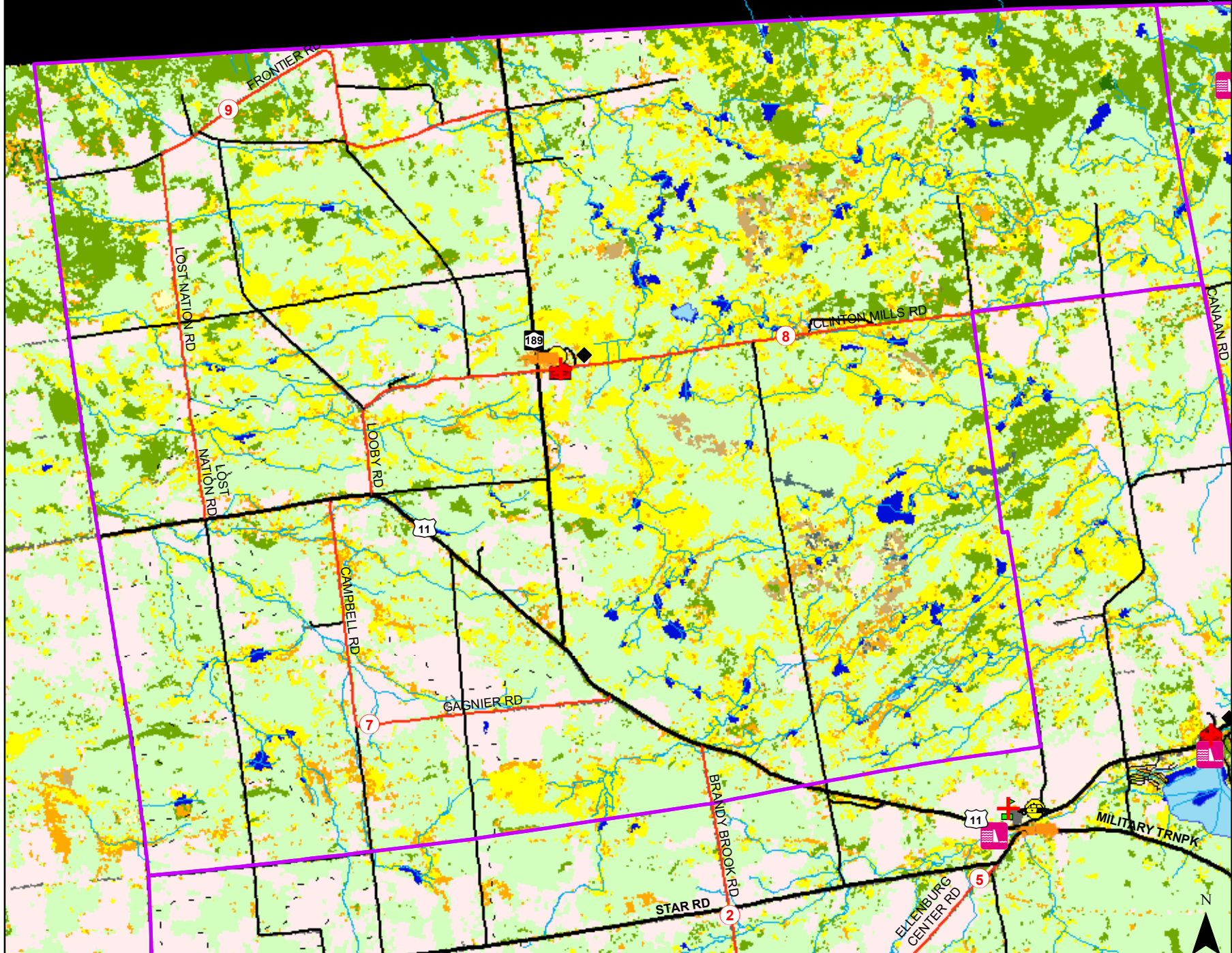
CLINTON WILDFIRE FUEL MAP

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







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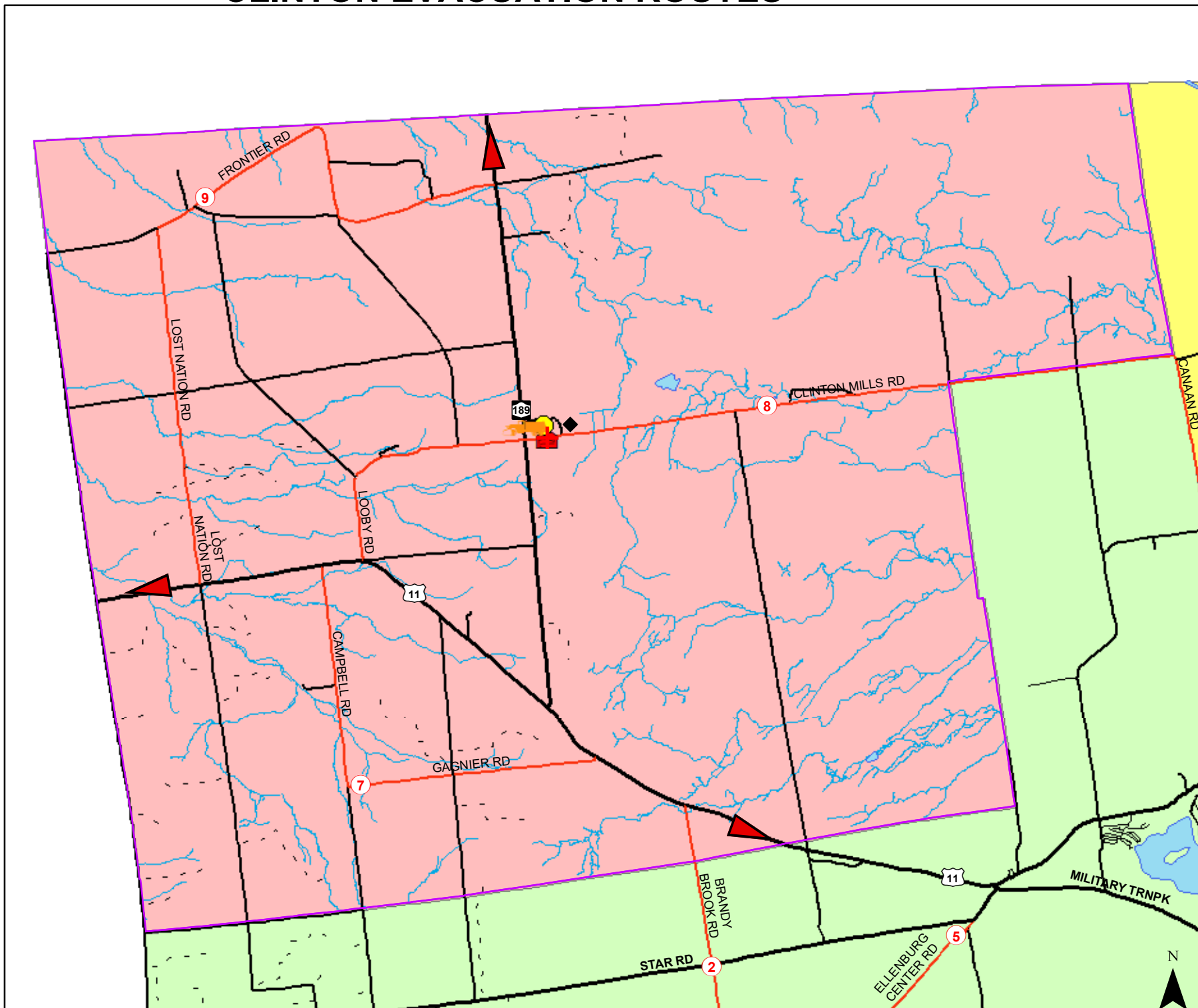
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- Airstrip



CLINTON EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
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-  Hydro_Generation
-  Flood_Control_Structure
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-  Town_Municipal_Halls



Town of Dannemora

Introduction:

The Town of Dannemora was first settled in 1838 and officially formed in 1854. The town is located in the mid-western part of the county, bordered to the north by Ellenburg and Altona, to the east by Beekmantown, to the south by the town of Saranac, and to the west by Franklin county. Dannemora is located within the Adirondack Park.

Lyon Mountain, located within the town, was once a company owned town focused on mining activities. Mining was an important industry in the early years of the Dannemora, and railroads brought ore from the mines through the town. The high school in Lyon Mountain was converted into a minimum security prison, which was closed in 2011. Currently the Lyon Mountain Mining and Railroad Museum holds artifacts and tells of the history of the small hamlet located in the town. Lyon Mountain is a popular hiking spot located in the Town of Dannemora, and there are two trails now leading to the summit which has a firetower. Lyon Mountain is also the highest point in Clinton County.

Chazy Lake located adjacent to Lyon Mountain, has a dam located at its northern end that was built by William Miner, an important figure in Clinton County's early history. In the late 19th and early 20th centuries there were a few hotels around the lake and a steam yacht that provided transport across the water. It was a popular location for summer vacations and camps, and there was even a railroad station located on the shores of the lake. Today the public beach located along the lake is a popular spot in the town, and the lake itself is stocked with rainbow trout, lake trout and salmon.



TOWN OF DANNEMORA TABLE OF FACTS	
Land Area	65.84 sq. miles (42,137.6 acres)
Incorporated Villages	Dannemora
Hamlets	Chazy Lake, Lyon Mountain,
2010 Population Census	4,898
Population Density	74.4 people/ sq. mile
Governance	Town Supervisor and Board
Total Assessed Valuation	\$ 142,782,899
Highest Elevation	3,830' (Lyon Mountain's Summit)
Largest Lake	Chazy Lake
Rivers	Saranac River
Dams	4
Bridges	5
Interstate Highway	N/A
State Routes	3, 374
Land Classified: Agricultural	N/A
Land Classified: Industrial	296.3 acres
Land Classified: Residential	3,830.4 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Dannemora Fire Department, Lyon Mountain Volunteer Fire Department
Schools	N/A
Railroads	N/A
Interstate Bridge	N/A
Law Enforcement	N/A
Correctional Facility	Clinton Correctional Facility
Power Utility Provider	NYSEG
Water Supply Sources	2 water districts (Lyon Mountain, Chazy Lake)
Emergency Shelters	Fire Departments, Town Offices
Critical Facilities	Town Offices

Planning Process:

The planning process was facilitated remotely for the Town of Dannemora, as the projected timeline for meeting with this town ended up falling during the COVID-19 pandemic in Clinton County. The Town Supervisor was contacted, and a video conference was set up on June 8th, 2020 to facilitate the collection of information for the town.

Capability Assessment:

The Town of Dannemora is in the process of developing planning documents.

TOWN OF DANNEMORA PLANNING DOCUMENTS	
Document	Notes
Economic Development Plan	Currently in development, completed by the end of 2020.
Building & Fire Codes	Use NYS established codes

The Town of Dannemora is governed by a Town Supervisor and a Town Board. The Town Supervisor functions as the emergency manager when needed. The Town Board makes planning and land use decisions when needed, but there are no zoning laws within the town. There is a part-time code enforcement officer. Engineers and land surveyors are hired as needed when projects require. Geographic Information Systems (GIS) support is provided by Clinton County's Planning Department. Grant writers and fiscal staff are hired as needed, and there are several individuals that the town has a working relationship with and continues to use for access to grant funding.

The Town of Dannemora has some varied funding streams. Capital Improvement Programming is managed by the town board in conjunction with consultants. Community Development Block Grants (CDBG) have been used in the past, most recently they were used to hook-up low income houses to a new water district in Chazy Lake. The town collects water and sewer fees. There are partnering arrangements as part of the Clinton County shared services. They specifically have a paving agreement with the Town of Saranac.

The two Fire Departments and Town Board provide public outreach regarding hazards in the town. There are two Lake Associations (Chazy Lake, and Chateaugay Lake) which provide public education regarding environmental hazards, and invasive species.

A self-assessment of capabilities was completed by the Town of Dannemora. Planning and Regulatory capabilities were ranked as limited, a need for zoning regulations and a possible noise ordinance were cited as potential improvements to increase their capacity. Administrative and Technical as well as Financial capabilities were ranked as high. Education and Outreach was ranked as moderate, interest was shown in obtaining StormReady and FireWise certification.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF DANNEMORA CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/Mitigation Actions
Fire Station	N	N	Y	Both fire stations have generators
Critical Vehicle and Equipment Storage	N	N	Y	
Communications Center	N	N	Y	Town Hall
Drinking water and Wastewater Treatment Plants	N	N	Y	There are 3 water districts and 2 sewer districts

There is a senior housing facility located in Lyon Mountain, there is a generator located on site. There are no drug and alcohol treatment programs or homeless shelters in the town. There are no tier 2 facilities. There are electric substations located in the town, that have generator backups. There are also two cell phone towers located on town property that generates income for the town and provides communications infrastructure.

Three locations were identified as suitable sites for displaced residents, and would be able to accommodate trailers and RVs.

TOWN OF DANNEMORA TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Town Park, Lyon Mountain	Public	N	Y	N	N
Town Park, General Leroy Manor Rd., Dannemora	Public	N	Y	N	N
Lyon Mountain Miners Baseball Field, Firehouse Ln, Lyon Mountain	Private	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Dannemora. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured

structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are no repetitive loss structures in the Town of Dannemora.

Dannemora will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF DANNEMORA FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
0	0	0	0

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF DANNEMORA HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Extreme Cold, Severe Winter Storms	Ice Storms, Transportation (Truck)	
	Med		Floods, High Winds/ Tornadoes, Land Subsidence, Thunderstorms, Wildfires	Earthquake
	Low	Dam Failure	Drought	Avalanche, Extreme Heat, Hail Storms, Hurricanes, Landslide

Potential Loss:

Potential loss was calculated for the Town of Dannemora. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 8 codes on the Clinton County Real Property Tax Services website:

200 Residential	300 Vacant Lands	400 Commercial
500 Recreation/ Entertainment	600 Community Services	700 Industrial
800 Public Service	900 Forest, Conservation Lands, and Parks	

TOWN OF DANNEMORA POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
200	3,830.4	836	\$69,330,500	83.6	\$6,933,050
300	4,680.5	50	\$339,400	5.0	\$33,940
400	172.0	14	\$2,210,900	1.4	\$221,090
500	79.2	7	\$377,300	0.7	\$37,730
600	94.3	17	\$6,211,600	1.7	\$621,160
700	296.3	1	\$22,400	0.1	\$2,240
800	87.4	5	\$948,399	0.5	\$94,840
900	26,938.8	5	\$1,486,800	0.5	\$148,680
Total	36,178.9	935	\$80,927,299	93.5	\$8,092,730

TOWN OF DANNEMORA STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	3	\$524,000
Total	3	\$524,000

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Dannemora reviewed the county project list from the 2014 plan. They have included a status of efforts in Dannemora to advance on these county mitigation project. Projects listed in the 2014 plan specific to Dannemora were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Dannemora as the plan was being updated in 2020.

TOWN OF DANNEMORA 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding/ ice jams	Reduce flooding of homes and road washouts Goal 1	Continue with action plan from 2009 to control dam at Chazy Lake	L- \$10,000	Town executive, county/ local DPW	Ongoing LT	H	Ongoing		
Reduce impact of wildfire	Reduce hazard around homes Goal 2	Encourage and assist homeowners to cut back wildlands from dwellings	L- \$10,000	Town executive, county/ local DPW	Ongoing LT	H	Ongoing		
Reduce impact of hurricane	Reduce hazard around homes Goal 2	New homes, additions built to NYS Building Code	L- \$10,000	Town executive, county/ local Code Enforcement	Ongoing LT	H	Ongoing		
Reduce impact of tornado	Reduce hazard to infrastructure Goal 1, 2	New home, additions built to NYS Building code	L- \$10,000	Town executive, county/ local Code Enforcement	Ongoing LT	H	Ongoing		
Reduce impact of earthquake	Reduce hazard to Chazy Lake	Continue action plan for Chazy	L- \$10,000	Town executive, county/	Ongoing LT	H	Not Complete		

	Dam and hamlet of Lyon Mountain Goal 1	Lake Dam Develop a plan for Lyon Mountain due to mines running under the hamlet		local DPW, Code Enforcement					
Reduce impact of subsidence	Reduce hazard to entire town due to miles of tunnels underground Goal 1	Develop action plan	H	Town executive, county/ local Planning, Code Enforcement	Ongoing LT	H	Not Complete		

TOWN OF DANNEMORA ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Economic Development Plan Document		Economic Planning Grant, targeting areas in the town to improve economics and tourism (i.e. beach at Chazy Lake, and old Lyon Mountain School/Prison)	All Hazards	Town of Dannemora, Town Board, Planning Grant Committee	\$100,000 (50/50)	2020	NYS Grant	M	#1 Local Plans
Update to Lyon Mountain Wastewater Treatment		Upgrading the wastewater facilities in Lyon Mountain to comply with changes in requirements	All Hazards	Town of Dannemora, AES	\$30,000 (Town \$8,000)	2020	DEC	H	#1 Local Plan

Creation of Chazy Lake Water District		Chazy Lake Water District installed to mitigate wells that had been contaminated with salt	Flood	Town of Dannemora,	approx. \$5Mil	started in 2017	NYSDO T		#2
Connect Low Income Houses to Water District		Hookup low income housing to new water district (Chazy Lake)		Town of Dannemora	\$100,000		CBDG	H	#2
Upgrade Town's Cellular Infrastructure		Cell Tower on town property, Verizon pays \$1,500/month		Town of Dannemora, Verizon	~	2016	Verizon	H	#2 Infrastructure
Upgrade Town's Cellular Infrastructure		Cell tower on town property, AT&T will pay \$1,500/mo.		Town of Dannemora, AT&T	~	2020	AT&T	H	#2

TOWN OF DANNEMORA MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1.Land subsidence study	Action plan is needed to address Land subsidence/sinkholes. Potential actions will be developed by an engineer	Develop action plan for Lyon Mountain to address land subsidence and sinkholes and develop a full understanding of risks to the area	Land subsidence, earthquake	Town of Dannemora	unknown	LT	?	H	#1 Local Plans
2.Upgrade wastewater treatment	Upgrade wastewater treatment facility	Wastewater treatment facility equipment is old and needs upgrading to meet standards, can be inundated during flood events which results in discharges of raw sewage	Flood	Town of Dannemora	unknown	2023	DEC	H	#2, #3

3. Geothermal Power Study	Determine the potential of Town buildings to use geothermal power	Establish a reliable and localized power source for important infrastructure, Town Hall, and HWD. This will allow Town functions to continue as normal during power outages in emergency events	All Hazards	Town of Dannemora	\$350,000	2021	NYSERDA	M	#2, #3
4. Upgrade Salt Shed	Improve town salt shed to reduce leaching of salt into water ways and town water supply	Make improvements to town salt shed.	Ice Storms, Severe Winter Storms	Town of Dannemora	\$1.2-1.3M	2021	NYS Grant Funded	H	#2, #3

ArcGIS Maps for Town of Dannemora:

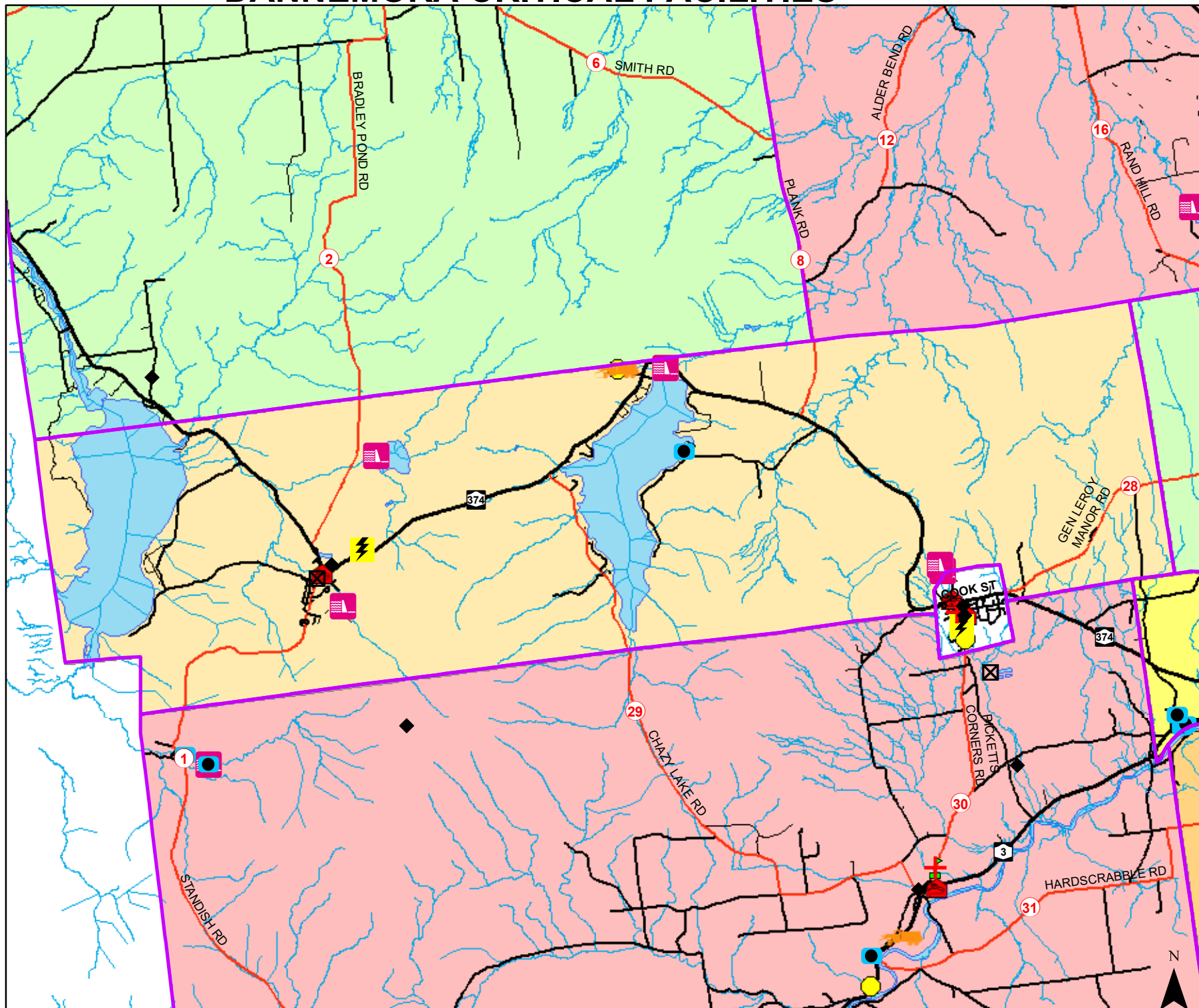
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DANNEMORA CRITICAL FACILITIES





















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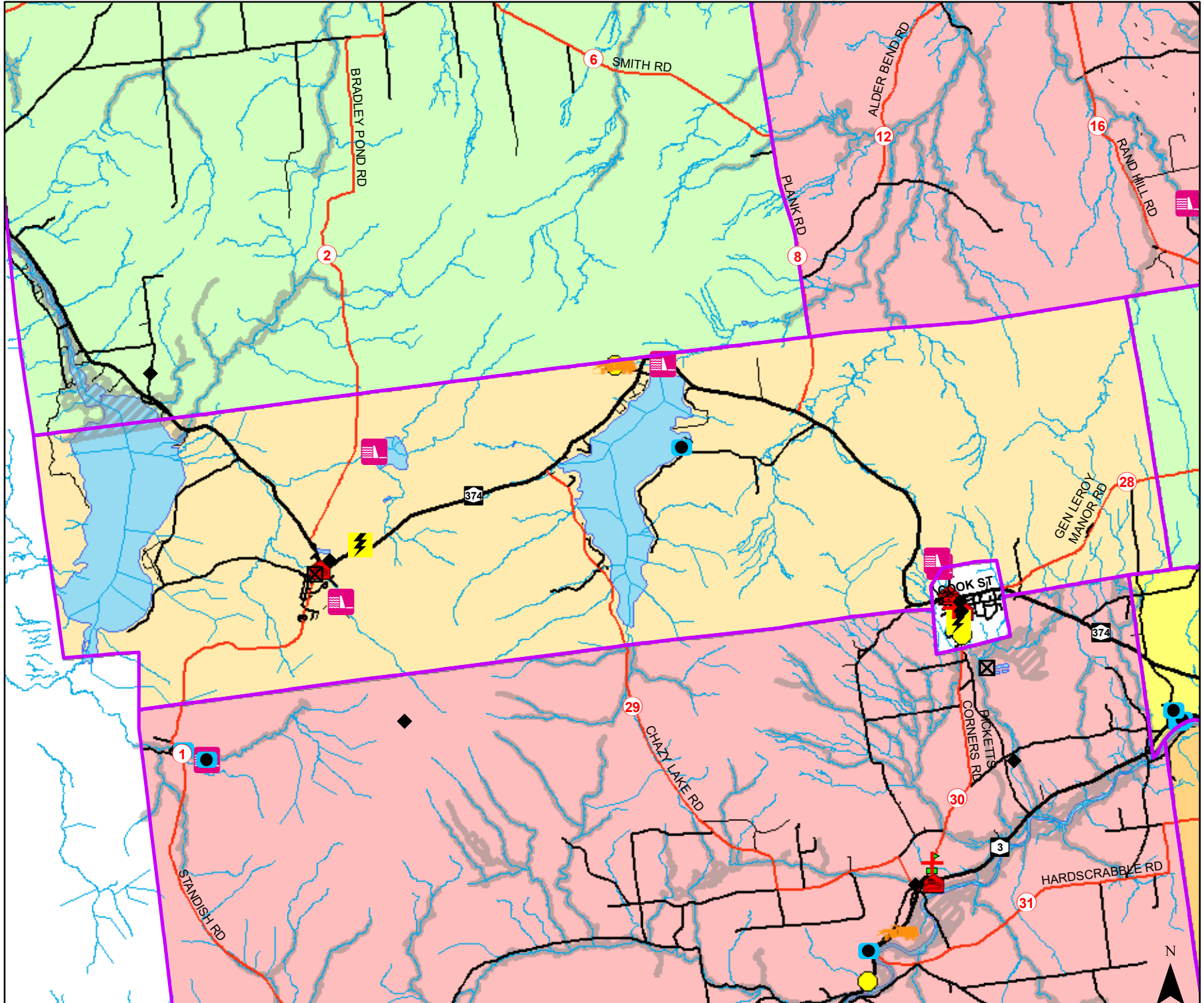
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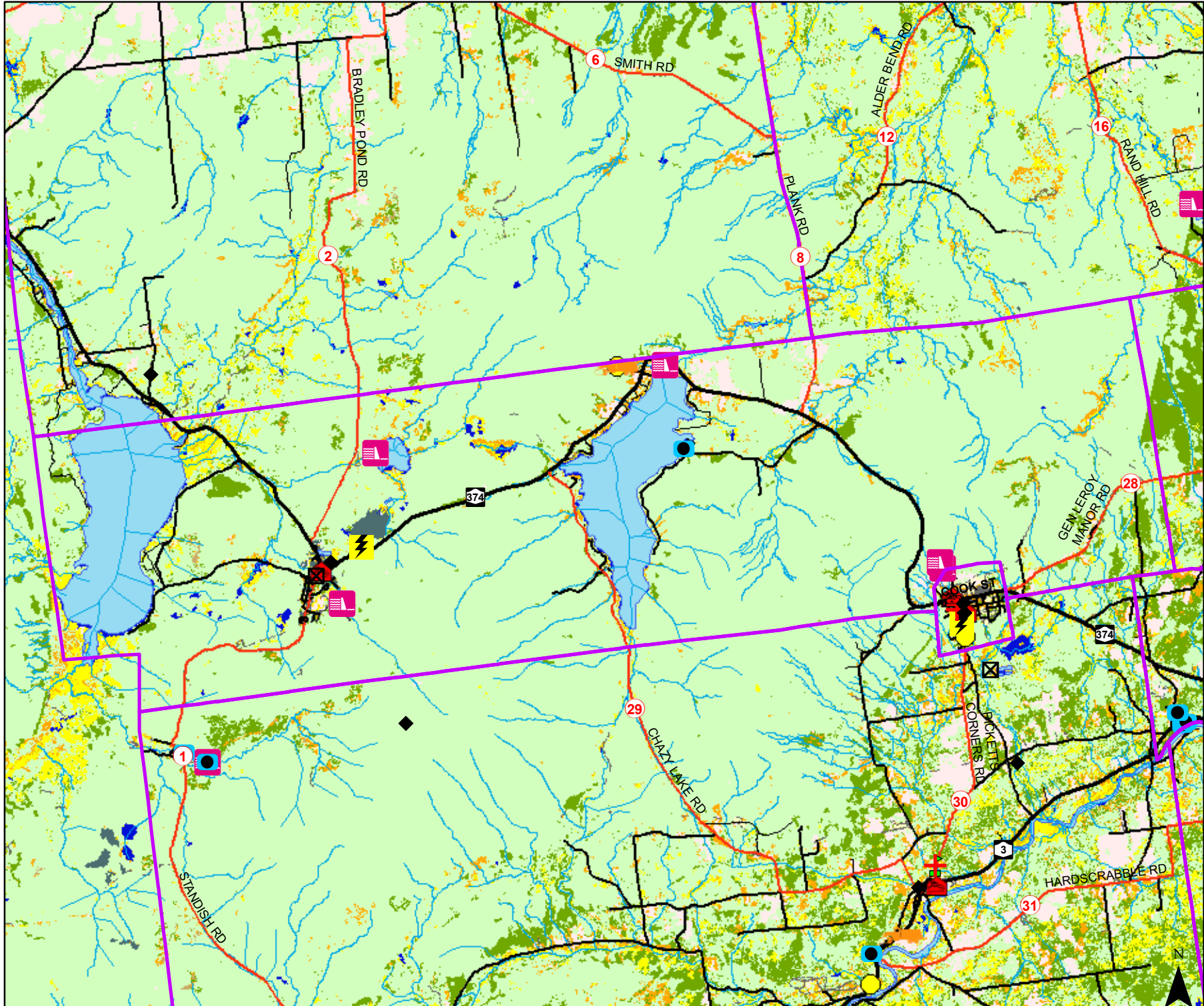
DANNEMORA WILDFIRE FUEL MAP

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









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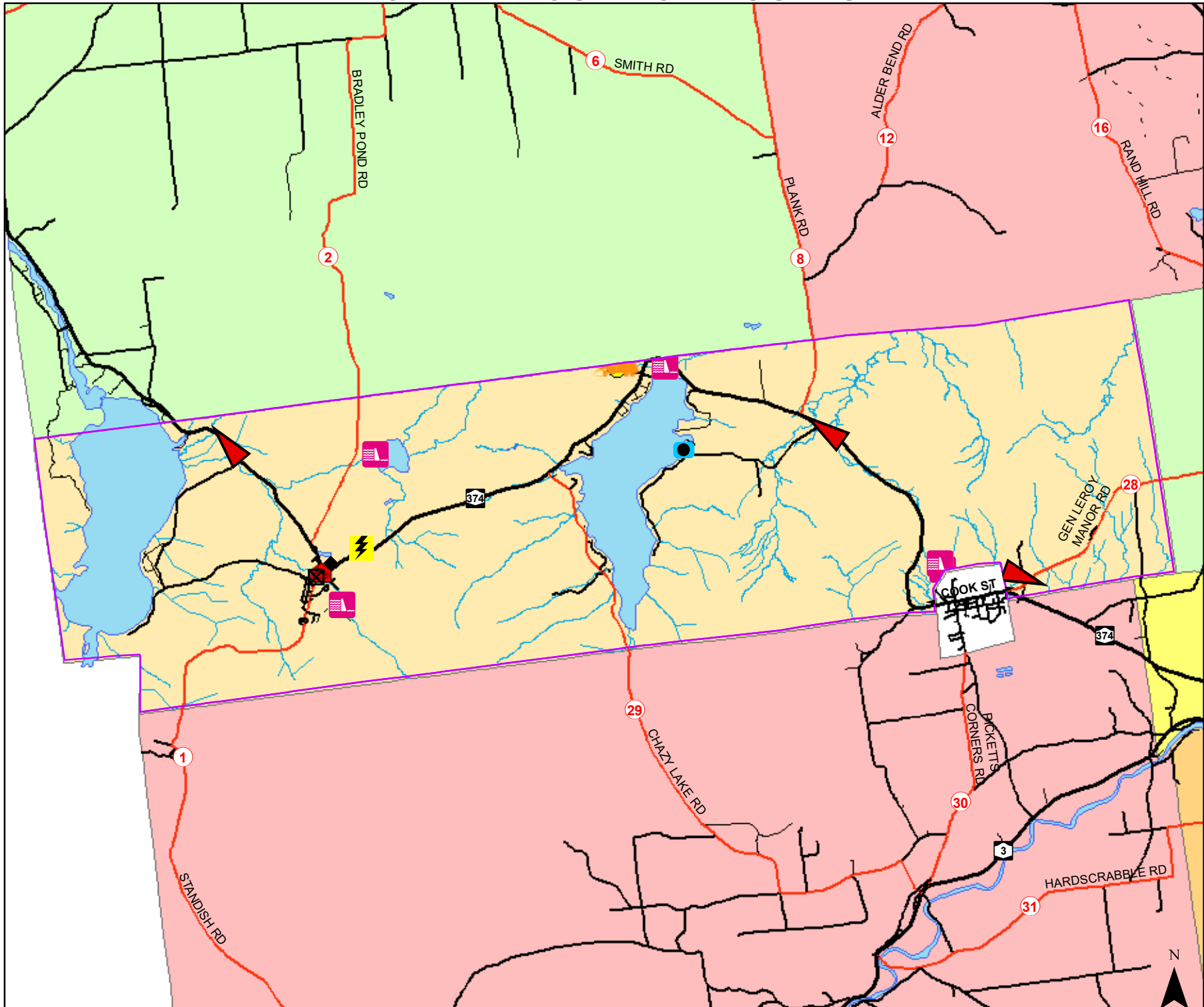
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DANNEMORA EVACUATION ROUTES

LEGEND

-  Evacuation Route
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Village of Dannemora

Introduction:

The Village of Dannemora was incorporated in 1901. The Village of Dannemora began as a mining town, after the discovery of iron. The entire village encompasses only 1.2 square miles.

The largest building in the village is the Clinton Correctional Facility, which is located alongside Route 374 in the northern part of the village. The prison has a capacity of 2,959 inmates. Clinton Correctional Facility was opened in 1845 for the purpose of providing convict labor to the local iron industry. The oldest parts of the prison were built by inmates. Currently, the prison inmates make up a majority of the Village of Dannemora's population count, and it employs roughly 1,425 individuals. This facility is managed by the New York State Department of Corrections (NYSDOC).



Located on the grounds of Clinton Correctional Facility is the Church of St. Dismas, a large church that was built from stones salvaged from the prison's first cell block and is on the National Register of Historic Places.

VILLAGE OF DANNEMORA TABLE OF FACTS	
Land Area	1.2 sq. miles (768 acres)
Incorporated Villages	N/A
Hamlets	N/A
2010 Population Census	3,936 (about 2,800-3,000 are inmates of CCF)
Population Density	3,280 people/sq. mile
Governance	Mayor and Board of Trustees
Total Assessed Valuation	\$ 41,036,276
Highest Elevation	1,414 ft.
Largest Lake	N/A
Rivers	N/A
Dams	N/A
Bridges	N/A
Interstate Highway	N/A
State Routes	374
Land Classified: Agricultural	N/A
Land Classified: Industrial	N/A
Land Classified: Residential	53.51 acres
Hospital/Medical Facility	None
Fire & Rescue	Partnership with Town of Saranac
Schools	N/A
Railroads	N/A
Interstate Bridge	N/A
Largest Employers	Clinton Correctional Facility
Law Enforcement	N/A
Correctional Facility	Clinton Correctional Facility
Power Utility Provider	NYSEG
Water Supply Sources	Underground Wells (NYS)
Emergency Shelters	Community Center, Fire Department
Critical Facilities	Community Center

Planning Process:

The planning process was facilitated remotely for the Village of Dannemora, as the projected timeline for meeting with this village ended up falling during the COVID-19 pandemic in Clinton County. A video call was held on April 16, 2020 with the Village Mayor.

Capability Assessment:

The Village of Dannemora has several planning mechanisms in place.

VILLAGE OF DANNEMORA PLANNING DOCUMENTS	
Document	Notes
Comprehensive Emergency Management Plan	Updated yearly, contains a continuity of operations plan, being updated as of April 2020
Zoning Regulations	Adopted in 1989, being updated as of April 2020
Subdivision Regulations	Adopted in 1989, being updated as of April 2020
Comprehensive Land Use Plan	Adopted in 1989, being updated as of April 2020
Open Space Management Plan	
Stormwater Management Plan	Part of the plan for the wastewater treatment plant
Capital Improvement Plan	
Economic Development Plan	Developing with the Clinton County Planning Department as of April 2020
Building & Fire Codes	Use NYS established codes

The Village of Dannemora is managed by a Mayor and a Board of Trustees. The mayor serves as the Emergency Manager. There is a volunteer planning board within the village, and they also receive supports from the county planning department when needed. Engineers are hired as needed, and the local code officer is able to provide expertise regarding construction practices. Land surveyors are hired as needed. The NYS DEC provides scientists and staff for community hazards, and they provide support for the wastewater treatment plan as well. The Clinton County Planning Department provides GIS support to the village. Grant writers and fiscal staff are hired as needed.

The Village of Dannemora uses various funding sources for programs and projects. The residents pay a Water and Sewer Rent which goes directly into funding upgrades and maintenance on the village sewage and water lines. Community Development Block Grants (CDBG) have been used in the past for housing and residential rehabilitation projects. Large projects in the past have been funded using bonds. There is an agreement with the Town of Saranac regarding Fire and EMS services.

The Fire Department is the predominant source of Education and Outreach in the Village of Dannemora. Several times a year they provide information to the public regarding fire safety, household preparedness and safety. The Village of Dannemora also uses Facebook as a way to reach residents regarding important issues. Within the Village, Saranac School and JCEO provide outreach and assistance to local individuals in need, such as access to food. During the COVID pandemic, the Clinton County Office of the Aging was providing outreach to local elderly residents.

The Village of Dannemora assessed capabilities in four dimensions. Planning and Regulatory capacity as well as financial capacity were both rated as high. Administrative and Technical, and Education and Outreach capacities were rated as moderate.

Critical facilities in the village were evaluated in regard to their flood vulnerability.

VILLAGE OF DANNEMORA CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Dannemora Volunteer Fire Department	N	N	Y	Hooked to state power (via Clinton Correctional Facility) which has a backup generator
Critical Vehicle and Equipment Storage Facility	N	N	Y	Fire station and public works garage.
Communication Center	N	N	Y	Community Center
Drinking Water and Wastewater Treatment Plant	N	N	Y	Drinking water provided by the state, WWTF village owned.

There are no schools currently located in the Village of Dannemora, there is a nursery school in the Village Community Center located at 40 Emmons Street. There are no medical facilities nor are there any drug/alcohol treatment centers. The Village of Dannemora does not have homeless shelters. No Tier 2 facilities exist within the village bounds.

VILLAGE OF DANNEMORA TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
North Country Shopping Center, Route 9	Private	N	Y	Y	Y
Plattsburgh RV Park, Route 9	Private	N	Y	Y	N

There are two locations suitable for temporary housing in the village. Both locations are publicly owned lands that are located outside of the floodplain, as there are no floodplains in the Village of Dannemora. Both would be suitable for temporary housing structures.

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

There are no floodplains located within the Village of Dannemora, and as such there are no NFIP data associated with the town according to FEMA.

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

VILLAGE OF DANNEMORA HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High		High Winds/Tornadoes	
	Med		Ice Storms	Severe Winter Storms, Thunderstorms
	Low		Extreme Cold, Floods, Hurricanes	Avalanche, Drought, Earthquake, Extreme Heat, Hailstorms, Landslides, Wildfires

Dam failure, seiche floods, and transportation accidents (both rail and truck) were determined to be not applicable for the Village of Dannemora. The railroad lines that exist in the Village of Dannemora were used in the area’s past mining ventures, however, have since been retired. There are no floodplains within the village, although there are small brooks and streams that have caused flooding issues in the past, particularly during severe storms. The village has a small land area, and it is mostly comprised of residential housing and Clinton Correctional Facility.

Potential Loss:

Potential loss was calculated for the Village of Dannemora. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to

determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 5 codes on the Clinton County Real Property Tax Services website:

200 Residential 300 Vacant Lands 400 Commercial
 500 Recreation/
 Entertainment 800 Public Service

VILLAGE OF DANNEMORA POTENTIAL LOSS					
Zoning Class Code	Acreage	Number by Code	Structure Value	Impacted Structures	Potential Loss
200	53.51	383	\$32,619,900	38.3	\$3,261,990
300	239.83	10	\$83,500	1	\$8,350
400	8.7	28	\$3,560,900	2.8	\$356,090
500	0	1	\$79,200	0.1	\$7,920
800	1.3	2	\$404,876	0.2	\$40,488
TOTAL	303.34	424	\$36,748,376	42.4	\$3,674,838

There are no structures in the Village of Dannemora in the SFHA.

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Dannemora reviewed the county project list from the 2014 plan. They have included a status of efforts in Dannemora to advance on these county mitigation project. Projects listed in the 2014 plan specific to Dannemora were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Dannemora as the plan was being updated in 2020.

VILLAGE OF DANNEMORA 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce impact of flash flooding to protect life and property Goal 1, 2, 3	Assist removing residents from danger and prevent property damage	H- Depending on severity of storm	Town Executive/ Village of Dannemora Fire Department	I	H	Ongoing		No event required the movement of village residents.
Reduce impact of severe snow/ice storm	Reduce impact of ice and snow, keeping roads clear and infrastructure operating Goal 1,3	Monitor and clear roads for the public emergency vehicles. Maintain Village infrastructure for emergency situations	H- Depending on severity of storm	Town Executive/ Village of Dannemora Department of Public Works	I	H	Ongoing	Generators tested on a regular basis.	

VILLAGE OF DANNEMORA ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Maintain culverts and stormwater drains	Reduce the impacts of flooding		Flooding	Village of Dannemora Public Works		Ongoing	Town Budget	High	#2 Structural and Infrastructure Projects
Culvert Replacement		Increased the size of some culverts within the village	Flooding/ Thunderstorms	Village of Dannemora Public Works			Grant		#2 Structural and Infrastructure Projects
Brush Truck		Purchased a brush truck for the Fire Department	Fires/Wildfires	Village of Dannemora			Loan		#2 Structural and Infrastructure Projects
Ambulance Upgrade		Purchased a new ambulance	All	Village of Dannemora		2010	Loan		#2 Structural and Infrastructure Projects
Snow Plow Purchase		Purchased new snow plows to be used to clear village roads.	Severe Winter Storms	Village of Dannemora		2016	General Fund		#2 Structural and Infrastructure Projects

Update Fire Department Equipment		Purchase new pagers/ radios for use by the Fire Department Staff				Ongoing	General Fund		#2 Structural and Infrastructure Projects
Public Work Department Upgrade		Replace the roof of the Public Works Department building				ST (2019)			#2 Structural and Infrastructure Projects
Fire Department Upgrade		Replace the roof of the Fire Department				ST (2010)			#2 Structural and Infrastructure Projects
Wastewater Treatment Plan Upgrades		New pump station installed at wastewater treatment facility							#2 Structural and Infrastructure Projects

VILLAGE OF DANNEMORA MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Study to determine most vulnerable pipes and purchase of Steam Jimmy	Pipes in village water system are in danger of damage due to extreme cold. Study and equipment purchase will address hazard	Purchase a Steam Jimmy to help mitigate freezing pipes	Extreme Cold/ Severe Winter Storm	Village of Dannemora	L	ST	Village General Funds		#2 Structure and Infrastructure Projects
2. Adopt the updated CEMP	Officially adopts the CEMP released by CCOES	Officially adopt the updated CEMP released by CCOES, to help coordinate mitigation actions on a regional level	All	Village of Dannemora / CCOES	L	ST	Village General Funds		#1 Local Plans and Regulations
3. Zoning Board Laws Update	Update zoning laws for the village	Update Zoning Laws for the Village to exclude hazard areas from development	All	Village of Dannemora / Clinton County Planning Department	L	ST	Village General Funds		#1 Local Plans and Regulations

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
4. Clark Steet Culvert Replacement	Replace and upgrade Clark St. Culvert to prevent future flooding and washouts	Upgrade culvert to allow more water to flow and reduce flooding/washout risk	Floods/ Thunderstorm	Village of Dannemora	\$10,000	ST	General Funds/ Grant		#2 Structure and Infrastructure Projects
5. Orchard Street Culvert Replacement	Replace and upgrade Orchard St. culvert to prevent future flooding and washouts	Upgrade culvert to allow more water to flow and reduce flooding/washout risk	Floods/ Thunderstorm	Village of Dannemora	\$10,000	ST	General Funds/ Grant		#2 Structure and Infrastructure Projects
6. Wastewater Treatment Plant diaphragm replacement	Diaphragm pumps are used in various steps of water treatment process.	Replace the diaphragm in wastewater treatment plant	Flooding/ Severe Rain Storm	Village of Dannemora	\$30,000	ST	Sewer Fund		#2 Structure and Infrastructure Projects
7. Wastewater Treatment Plant Maintenance	Maintain the wastewater treatment plant	Dredge the lagoons for the wastewater treatment plant	Flooding/ Severe Rain Storm	Village of Dannemora	L	LT	DEC/ New York State	H	#2 Structure and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
8. Orchard Street curbing installation.	Keep water on the street instead on yards, direct to storm drains.	Install curbing to manage flow of storm water on Orchard St.	Flooding/ Severe Rain Storm	Village of Dannemora	L	ST	Village General Funds		#2 Structure and Infrastructure Projects
9. Study waterline replacement and determine priority for replacement of lines	Upgrade waterlines in village	Continue with ongoing project that upgrades waterlines in the village.	All	Village of Dannemora	H	Ongoing	Water Fund		#2 Structure and Infrastructure Projects
10. Conduct study to determine EMS building needs, construct new building	EMS service in village needs new building	Construct a new and larger building that will house all need vehicles and equipment for EMS service	All	Village of Dannemora	H	LT	Still looking		#2 Structure and Infrastructure Projects

ArcGIS Maps for Village of Dannemora:

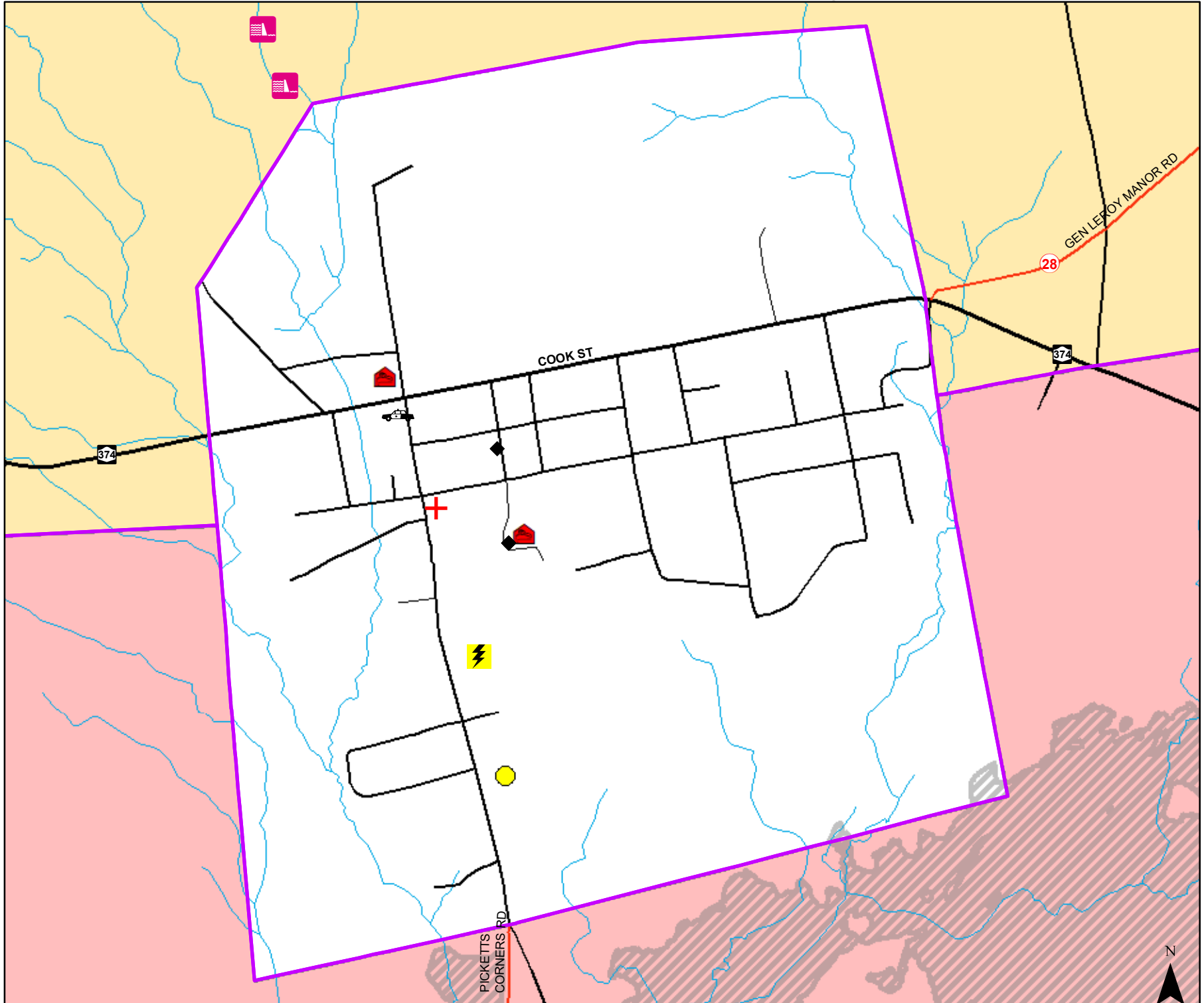
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

DANNEMORA VILL CRITICAL FACILITIES

LEGEND

- Municipal Boundary
- Natural_Gas
- Hydro_Generation
- Flood_Control_Structure
- Water_Supply
- Communications
- Sewage_Water_TX
- EOC_Locations
- Red_Cross_Shelters
- Schools
- Electric_Substation
- Dams2019
- Police_stations
- Nursing_Homes
- Airport_Terminal
- Bus_Station
- Ferry_Dock
- Highway_Garages
- Town_Municipal_Halls
- Health_Centers


























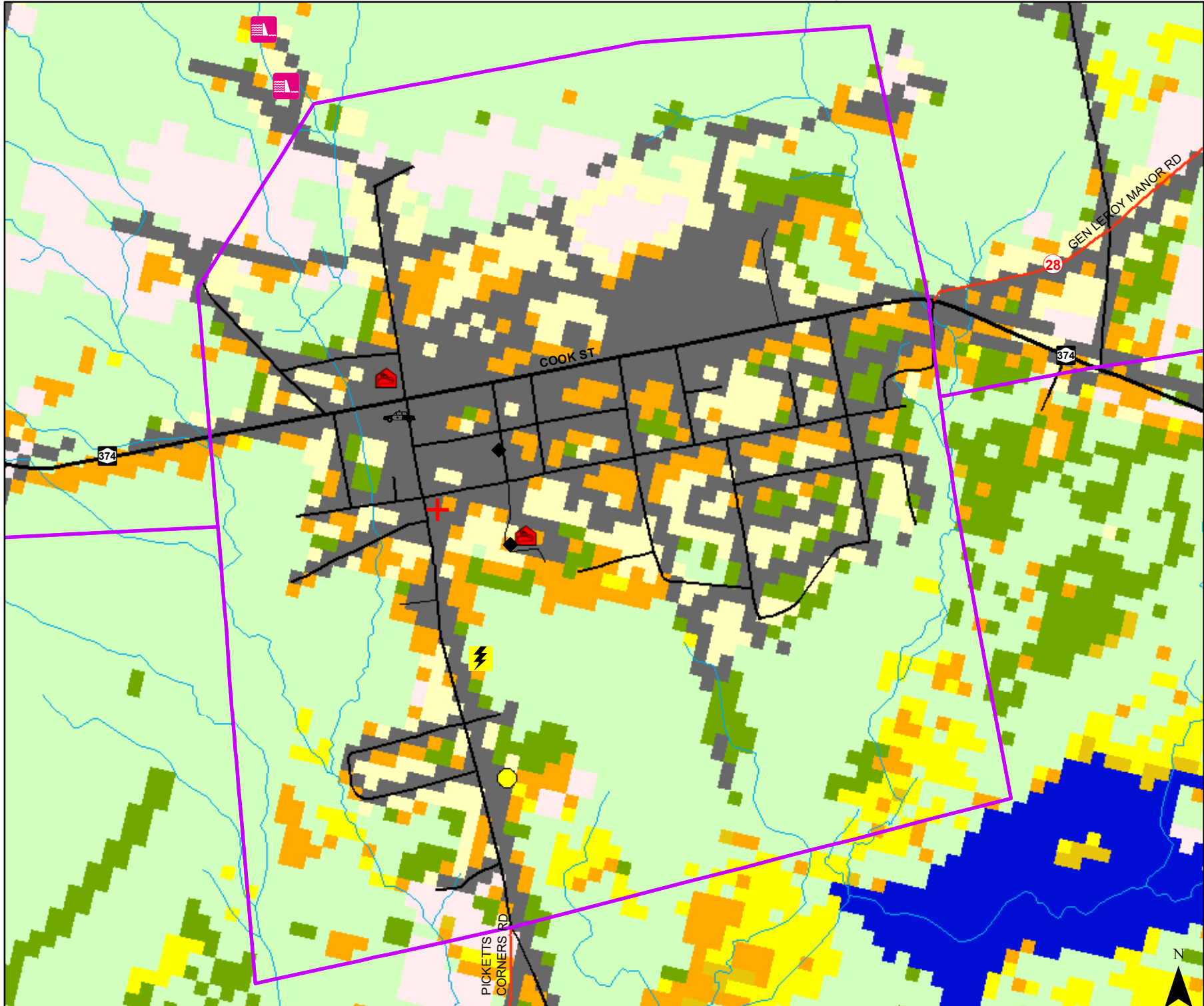
DANNEMORA VILL WILDFIRE FUEL MAP

LEGEND

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FBFM13

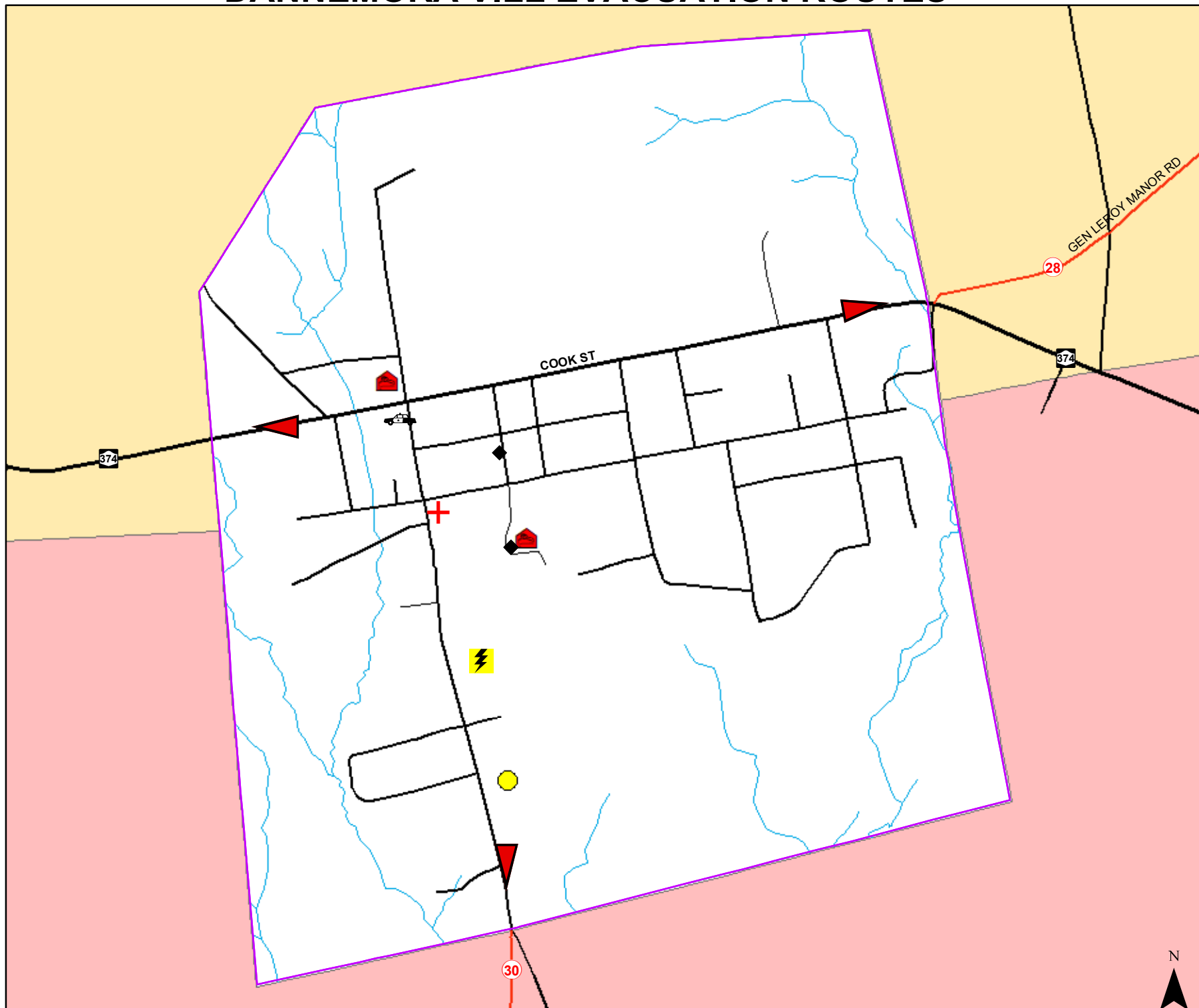
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-  FBFM5
-  FBFM6
-  FBFM7
-  FBFM8
-  FBFM9
-  FBFM10
-  Urban
-  Agriculture
-  Water
-  Barren
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers
-  Fire_Stations
-  Airstrip



DANNEMORA VILL EVACUATION ROUTES

LEGEND

- Evacuation Route
- Municipal Boundary
- Natural_Gas
- Hydro_Generation
- Flood_Control_Structure
- Water_Supply
- Communications
- Sewage_Water_TX
- EOC_Locations
- Red_Cross_Shelters
- Schools
- Electric_Substation
- Dams2019
- Police_stations
- Nursing_Homes
- Airport_Terminal
- Bus_Station
- Ferry_Dock
- Highway_Garages
- Town_Municipal_Halls



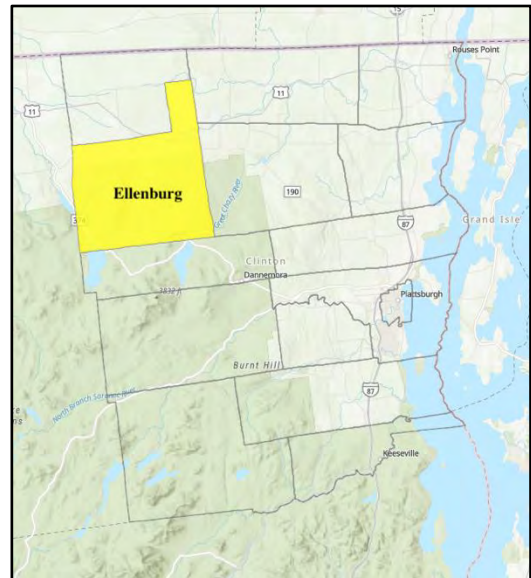
Town of Ellenburg

Introduction:

The Town of Ellenburg was first settled around 1800 and officially formed in 1830. It is located in the northwestern part of Clinton County, it is bordered to the north by Clinton, to the east by Mooers and Altona, to the south by Dannemora and to the west by Franklin County. The early history of the town was characterized by settlers' confrontations with wild animals, particularly wolves.

During the Cold War the town was the location of two Atlas ICMB missile silos, operational between 1962 and 1965. Currently, the Town is the site of the one of the wind farms within the northeastern portion of the county. There are 54 turbines located in Ellenburg that produce 81 megawatts of electricity.

The southern part of the town is located within the Adirondack park. The town has a mix of lakes, mountains and valleys making it a scenic area to visit. Upper Chateaugay Lake is a popular area for summer and vacation homes. On the lake there is a DEC maintained boat launch. The lake is a popular area for fishing as well, trout, salmon, bass, pike, and perch can be found within its waters. The lake is stocked with salmon and lake trout annually.



TOWN OF ELLENBURG TABLE OF FACTS	
Land Area	107.46 sq. miles (68,774.4 acres)
Incorporated Villages	N/A
Hamlets	Ellenburg, Ellenburg Center, Ellenburg Depot, Harrigan, Merrill
2010 Population Census	1,743
Population Density	16.2 people/ sq. mile
Governance	Town Supervisor and Board
Total Assessed Valuation	4 150,195,400
Elevation	1,398'
Largest Lakes	Upper Chateaugay Lake, Lake Roxanne
Rivers	Great Chazy River
Dams	3
Bridges	12
Interstate Highway	N/A
State Routes	11, 190, 374
Land Classified: Agricultural	10,857.1 acres
Land Classified: Industrial	12.9 acres
Land Classified: Residential	17,237.4 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Ellenburg Center Volunteer Fire Department, Ellenburg Depot Volunteer Fire Department
Schools	Northern Adirondack Central School (K-12)
Railroads	N/A
Interstate Bridge	N/A
Largest Employers	Northern Adirondack Central School
Law Enforcement	Sheriff Substation
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Private Wells
Emergency Shelters	Municipal Center, Fire Stations (2)
Critical Facilities	Town Hall, Municipal Center, Fire Stations

Planning Process:

The planning process was facilitated remotely for the Village of Dannemora, as the projected timeline for meeting with this village ended up falling during the COVID-19 pandemic in Clinton County. A video call was held on June 29, 2020 with the Town Supervisor.

Capability Assessment:

The Town of Ellenburg has several planning documents

TOWN OF ELLENBURG PLANNING DOCUMENTS	
Document	Notes
Zoning Regulations	Includes floodplain regulations
Comprehensive Land Use Plan	Adopted in the 1990s
Capital Improvement Plan	Updated annually
Historic Preservation Plan	There is a Historical Board in the Town
Building & Fire Codes	Use NYS established codes

The Town is managed by a Supervisor and Town Board. The Town Supervisor and the Code Officer are both able to function as the Emergency Manager in times of need. There are no planners not engineers employed by the Town. The Code Enforcement Officer functions as the Floodplain Manager, and the position is part time. The DEC and County provide scientific expertise when the support is needed. The County Planning Department provides GIS support when needed. Grant writers and fiscal staff to administer large grants are hired as needed.

The Town uses a variety of funding sources for projects and programming. A Capital Improvement Programming grant is currently being used to upgrade the Town's salt shed. Community Development Block Grants have been used to upgrade HUD housing in the Town. There are three lighting districts within the Town of Ellenburg and they have associated fees. They partner with neighboring towns for various services and shared equipment.

The Town of Ellenburg has a variety of education and outreach taking place. The two Fire Departments provide various programs and outreach to the local school. Within the town the JCEO has a full-time position that provides support to the local residents. There is also the Chateaugay Lake Foundation which provides stewardship to the local lake, and has a mission to protect the environmental quality of the lake. The do fundraising activities and coordinate cleanup efforts which focus on invasive species.

A self-assessment of the Town's capabilities was discussed and the town was ranked in four different areas. The Town's Planning and Regulatory capacity was seen as limited. Administrative and Technical, as well as Financial capabilities were ranked moderate. The Town's Education and Outreach was ranked as high, as both the JCEO and local school are highly active in the community.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF ELLENBURG CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Police Station	N	N	Y	(substation)
Fire Station	Y(1)	N	Y (both)	Large box culvert on Rte.11 to prevent flooding
Critical Vehicle and Equipment Storage	N	N	N	
Utility and Power Generating Stations	N	N	?	Windfarm located in town.
Schools and Day Care Facilities	N	N	Y	K-12

The Town of Ellenburg does not provide water treatment or wastewater treatment to its residents. There are no drug and alcohol treatment programs nor are there any homeless shelters located within the town. There are no Tier 2 facilities within the Town of Ellenburg.

Two locations were identified in the town as being suitable for RV and trailers as temporary housing.

TOWN OF ELLENBURG TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Rec Park, Church St.	Public	N	Y	N	N
Ellenburg Center Fire Department, Church St.	Public	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Ellenburg. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured

structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 4 repetitive loss structures in the Town of Ellenburg.

Ellenburg will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF ELLENBURG FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
4	10	8	\$192,053

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF ELLENBURG HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Extreme Cold, Severe Winter Storms,		
	Med	Dam Failure, Transportation (truck)	Floods, Wildfires	Drought
	Low			Earthquake, Extreme Heat, Hail Storm, High Winds/ Tornadoes, Hurricanes, Thunderstorms

Potential Loss:

Potential loss was calculated for the Town of Ellenburg. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the

number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture 200 Residential 300 Vacant Lands
- 400 Commercial 500 Recreation/ Entertainment 600 Community Services
- 700 Industrial 800 Public Service 900 Forest, Conservation
Lands, and Parks

TOWN OF ELLENBURG POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	10,857.1	51	\$4,661,000.00	5.1	\$466,100.00
200	17,237.4	874	\$57,179,900.00	87.4	\$5,717,990.00
300	10,631.5	51	\$412,900.00	5.1	\$41,290.00
400	2,190.3	31	\$3,885,900.00	3.1	\$388,590.00
500	311.9	8	\$2,373,000.00	0.8	\$237,300.00
600	192.5	17	\$21,765,400.00	1.7	\$2,176,540.00
700	12.9	0	0	0	0
800	12.1	5	\$526,400.00	0.5	\$52,640.00
900	26,306.9	17	\$273,600.00	1.7	\$27,360.00
TOTAL	67,752.5	1,054	\$91,078,100.00	105.4	\$9,107,810.00

TOWN OF ELLENBURG STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	57	\$4,815,500
300	2	\$21,600
400	3	\$427,800
500	1	\$291,900
Total	63	\$5,556,800

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Ellenburg reviewed the county project list from the 2014 plan. They have included a status of efforts in Ellenburg to advance on these county mitigation project. Projects listed in the 2014 plan specific to Ellenburg were reviewed to determine if any progress has been made on implementing these projects, status and progress are included in the table. New mitigation projects were developed by Ellenburg as the plan was being updated in 2020.

TOWN OF ELLENBURG 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding/ ice jams	Reduce flooding of homes and road washouts Goal 1	Install larger culverts of LaBombard Road and Sears Road at Smith's Farm	H-\$50,000 per road	Town executive, county/local DPW	2013-2014 LT	H	Completed		
Reduce impact of flooding/ ice jams	Reduce flooding of homes and road washouts Goal 1	Install new bridge on Spear Hill Road	H-\$200,000	Town executive, county/local DPW	2013-2014 LT	H	Not Completed?	?	
Reduce impact of flooding/ ice jams	Reduce flooding of homes and road washouts Goal 1	Add to shoulder on Cashman Road along Chazy River	L-\$10,000	Town executive, county/local DPW	2013-2014 LT	H	Completed		

TOWN OF ELLENBURG ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Updated Zoning		Zoning regulations in the town updated	All-Hazards	Town of Ellenburg		2015			1. Local Plans and Regulations
Updated materials for code enforcement officer			All-Hazards	Town of Ellenburg		2020			1. Local Plans and Regulations
Annual Culvert replacement		Routine replacement of culverts in the town	Flood	Town of Ellenburg/ Town Highway Department		Ongoing	HWD		2. Structural and Infrastructure Projects
Plow Trucks Purchased		Purchased two plow trucks to be used for road maintenance in winter	Severe Winter Storms/ Ice Storms	Town of Ellenburg			Town Budget		2. Structural and Infrastructure Projects

Excavator Purchased		Purchased excavator to use for disaster preparedness and cleanup	All-Hazards	Town of Ellenburg			Town Budget		2. Structural and Infrastructure Projects
Bulldozer Purchased		Purchased bulldozer to use for disaster preparedness and cleanup	All Hazards	Town of Ellenburg			Town Budget		2. Structural and Infrastructure Projects
Road Elevation		Elevate Sharrett Road to protect from flooding from various creeks	Flood	Town of Ellenburg/ Town Highway Department			Town Budget		2. Structural and Infrastructure Projects

TOWN OF ELLENBURG MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Conduct study to determine how to best upgrade salt shed	Improving town salt shed will reduce leaching of salt into waterways and drinking water	Salt Shed improvements that will protect groundwater from salt contamination	Flood/Winter Storms	Town of Ellenburg/Clinton County Health Department	1.2 MIL	2022	State Funding	H	2. Structural and Infrastructure Projects, 3. Natural Systems Protection
2. Purchase Generator for Key Infrastructure	Purchase generator for key buildings in town	Obtain generator for Critical Vehicle and Equipment Storage	All Hazards	Town of Ellenburg	\$10,000	2020-2025	Town/Grant funding	M	2. Structural and Infrastructure Projects
3. Purchase Generator for Key Infrastructure	Purchase generator for key buildings in town	Purchase generator for Town Hall to enable emergency shelter functions	All	Town of Ellenburg	\$10,000	2020-2025	Town/Grant funding	M	2. Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
4. Purchase Generator for Key Infrastructure	Purchase generator for key buildings in town	Purchase generator for HWD, does not currently have one.	All	Town of Ellenburg	\$10,000	2020-2025	Grant Funding	H	2. Structural and Infrastructure Projects
5. Purchase Generator for Key Infrastructure	Purchase generator for key buildings in town	Upgrade generator for municipal center to support emergency shelter functions (designated evac site for school)	All	Town of Ellenburg	\$10,000	2020-2025	Grant Funding	M	2. Structural and Infrastructure Projects





















ArcGIS Maps for Town of Ellenburg:

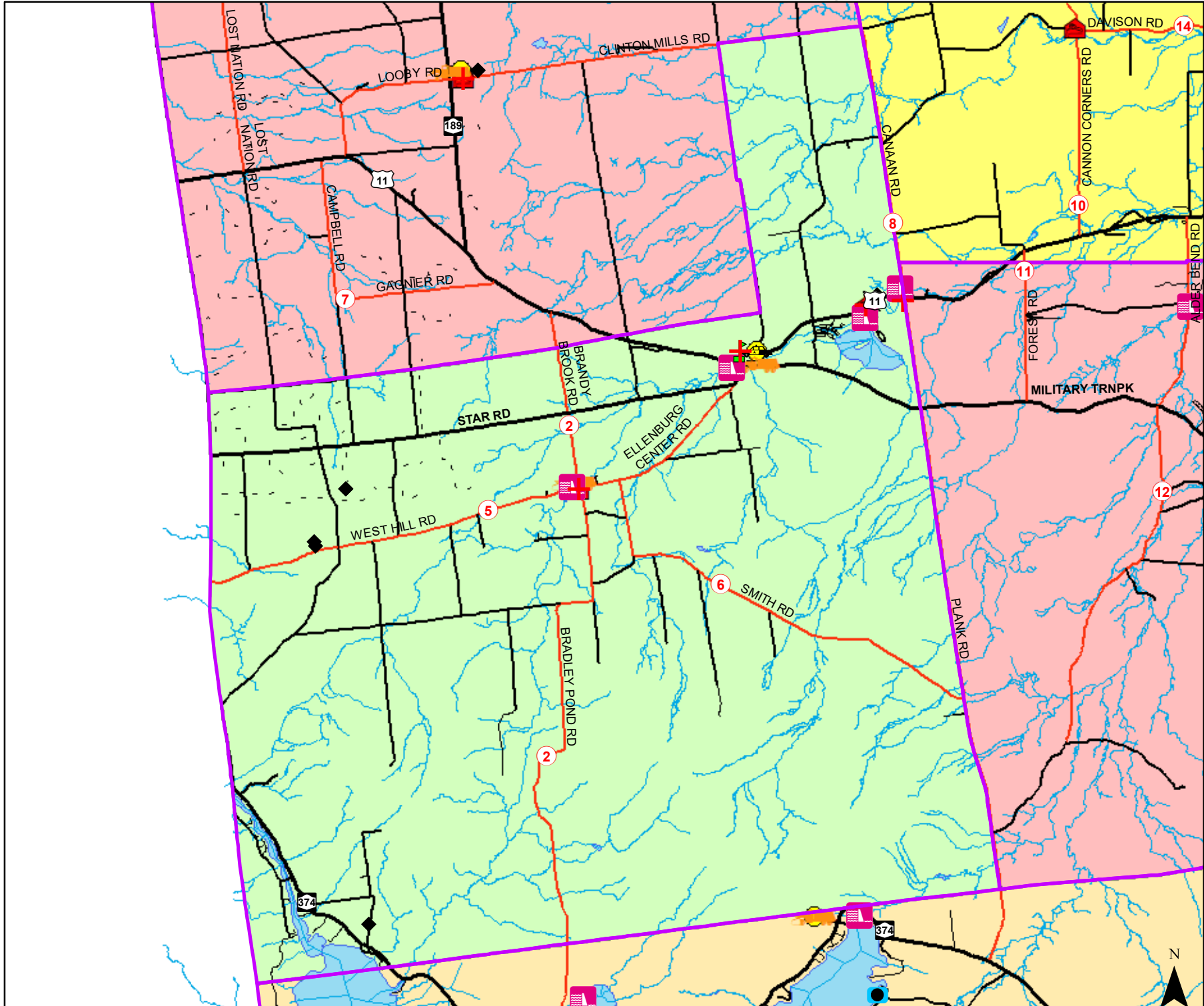
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

ELLENBURG CRITICAL FACILITIES





















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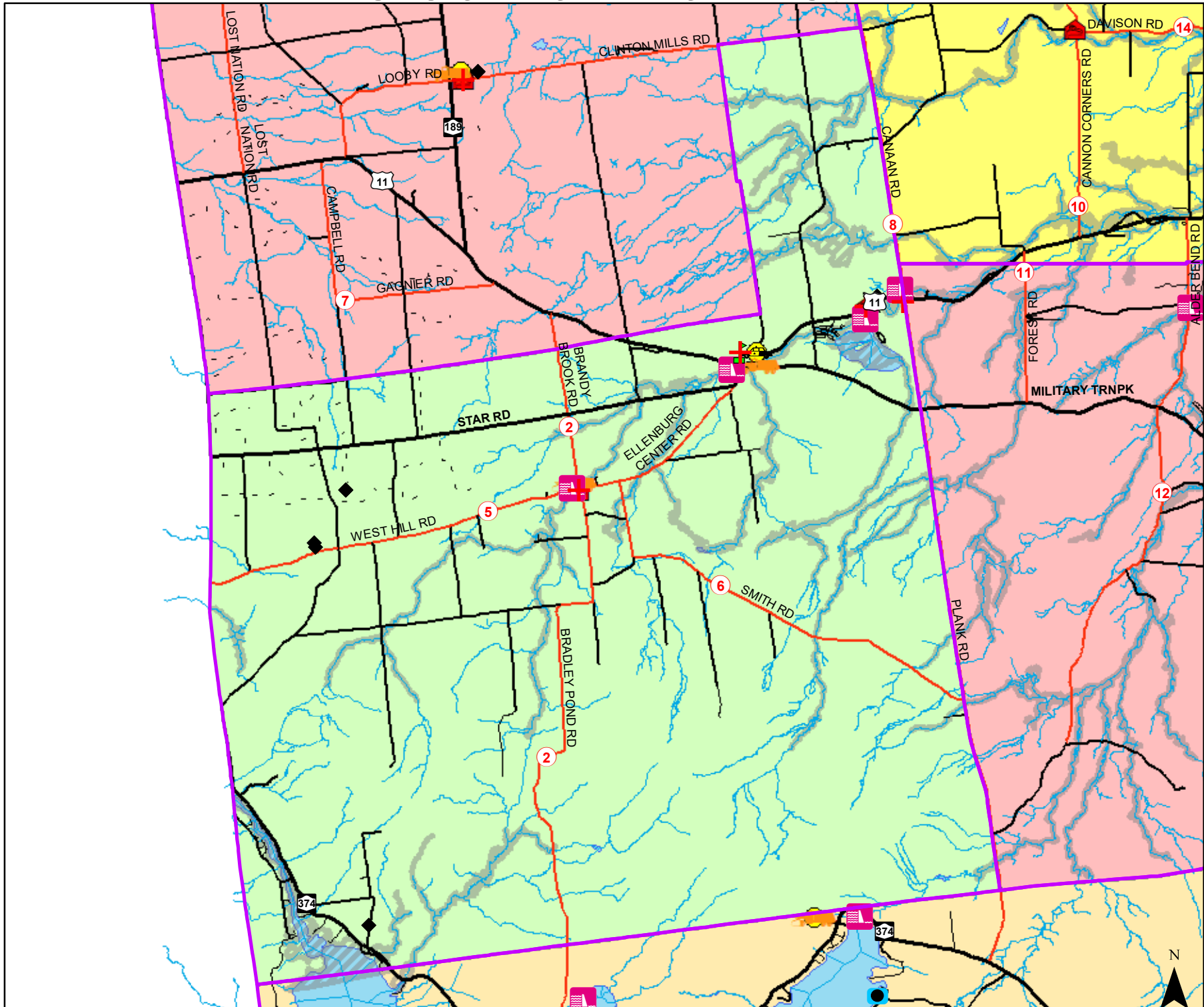
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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
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-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
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-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers



ELLENBURG CRITICAL FACILITIES

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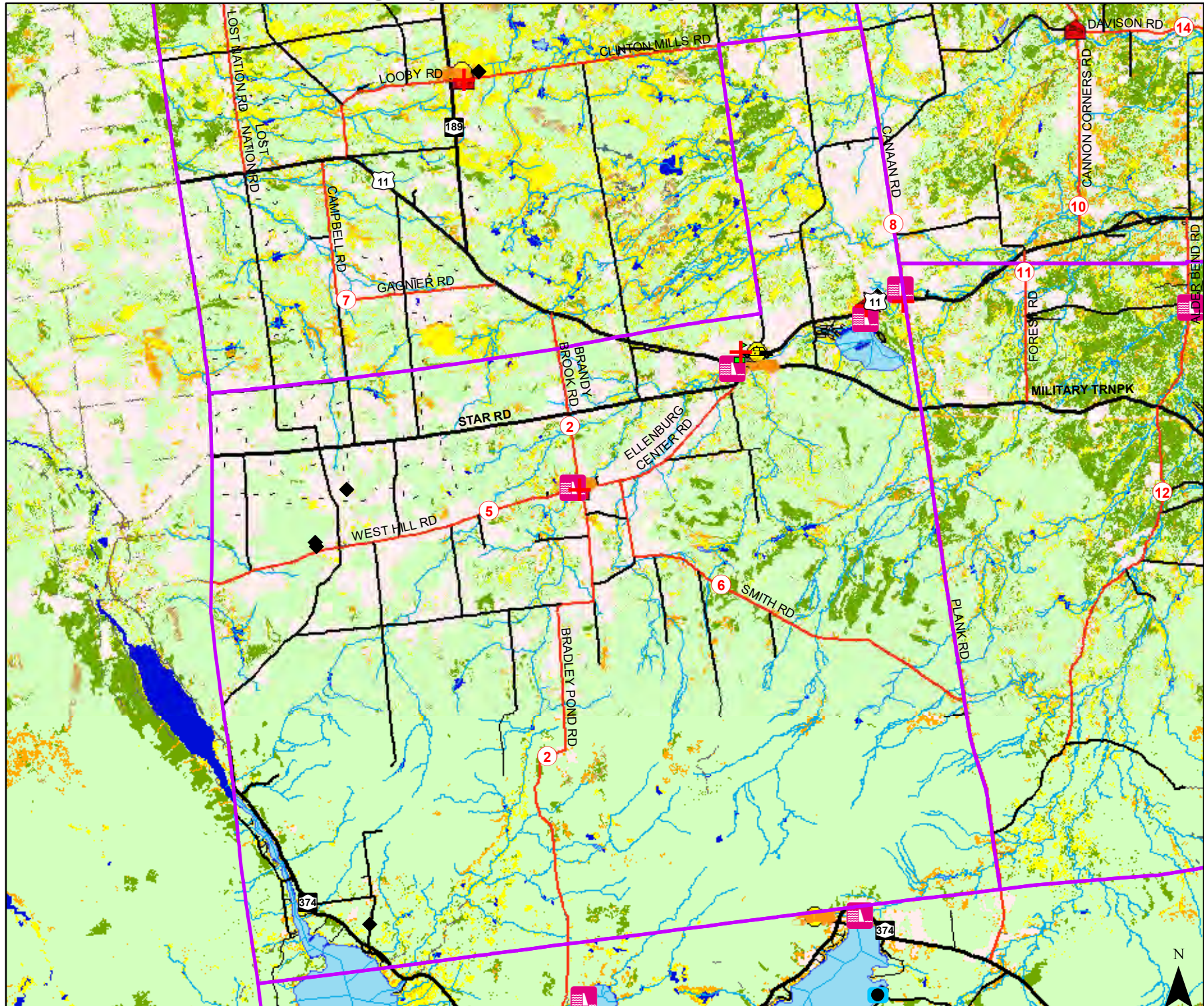
ELLENBURG WILDFIRE FUEL MAP

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
















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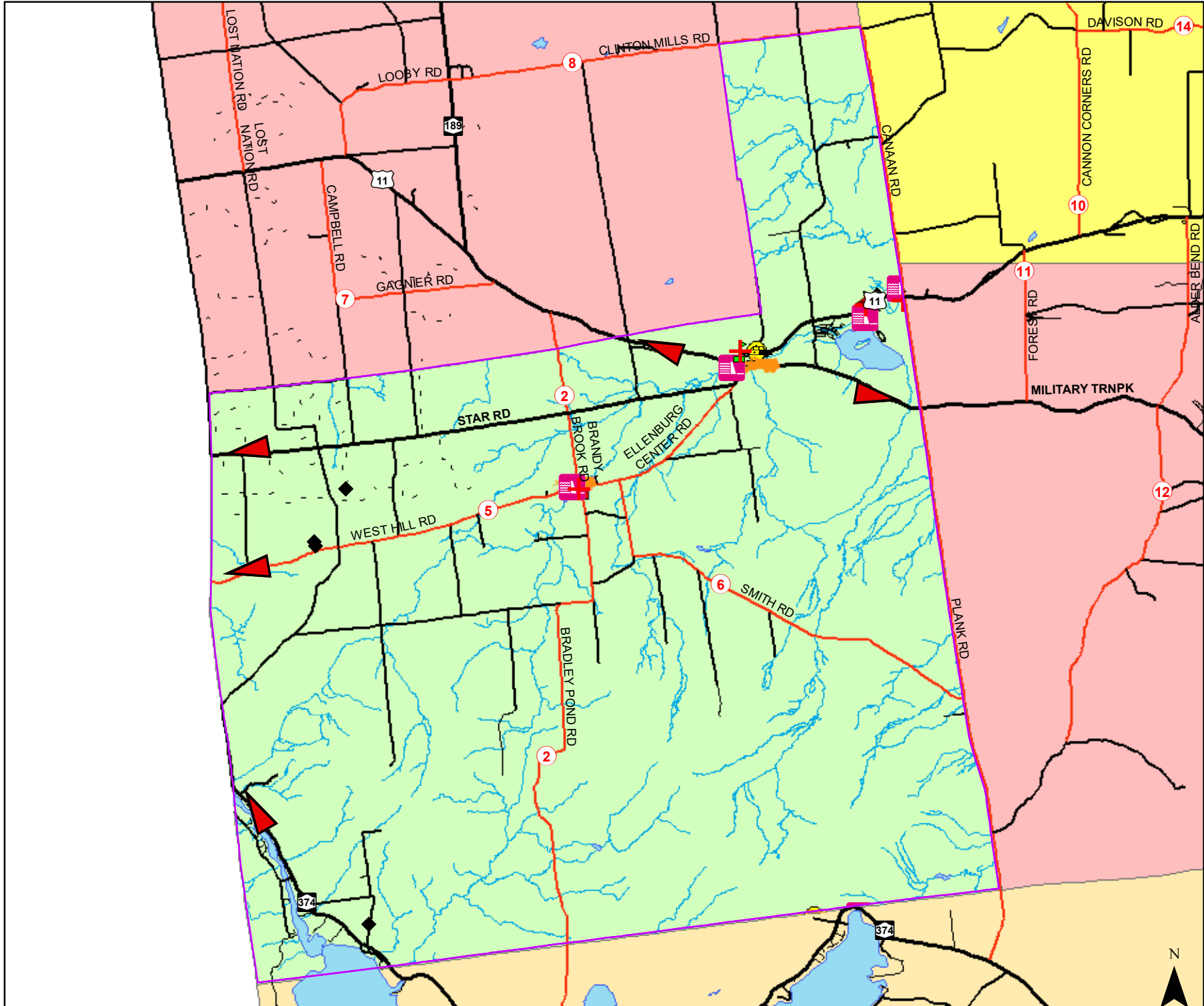
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- Airstrip



ELLENBURG EVACUATION ROUTES

LEGEND

-  Evacuation Route
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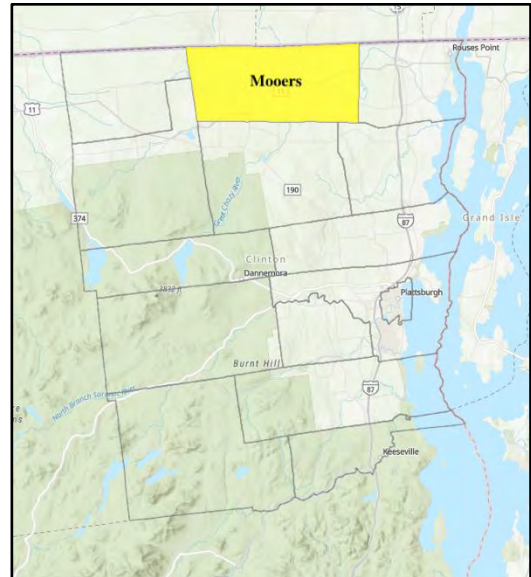
Town of Mooers

Introduction:

The Town of Mooers was formed in 1804. It is located along the northern border of Clinton County, it is bordered to the east by the Town of Champlain, to the south by Chazy and Altona, to the west by Ellenburg and Clinton, to the north by the US-Canadian Border and the province of Québec. There is a border crossing that connects Mooers, NY with Hemmingford QC. During prohibition this crossing was part of the Rum Trail as bootlegged liquor was brought from Canada into the United States. The border crossing itself was established in 1935, after prohibition was repealed.

The town was initially settled by refugees from Canada and Nova Scotia who had fought in the Revolutionary War with the Colonies. Though not many individuals took advantage of this opportunity.

The Riverside Cemetery located in Mooers is on the National Register of Historic Places. Within this cemetery is General Benjamin Mooers, who commanded the militia in the Battle of Plattsburgh in 1814. He is also the individual for which the town is named.



TOWN OF MOOERS TABLE OF FACTS	
Land Area	87.92 sq. miles (56,268.8 acres)
Incorporated Villages	N/A
Hamlets	Cannon Corners, Mooers, Mooers Forks, Twin Bridges, Whitney Corners, Woods Falls
2010 Population Census	3,592
Population Density	40.9 people/ sq. mile
Governance	Town Supervisor and Council
Total Assessed Valuation	\$ 175,700,201
Elevation	280'
Largest Lake	N/A
Rivers	Great Chazy River
Dams	2
Bridges	24
Interstate Highway	N/A
State Routes	11, 22
Land Classified: Agricultural	7,273.1 acres
Land Classified: Industrial	1,251.9 acres
Land Classified: Residential	22,386.2 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Mooers Volunteer Fire Department (#1, and #2), Champlain EMS
Schools	Mooers Elementary
Railroads	N/A
Interstate Bridge	N/A
Law Enforcement	N/A
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Private Wells
Emergency Shelters	Fire Departments
Critical Facilities	Fire Departments, Town Hall, Town Garage

Planning Process:

The planning process was facilitated remotely for the Town of Mooers, as the projected timeline for meeting with this town ended up falling during the COVID-19 pandemic in Clinton County. The Town Secretary was contacted through email, and a video conference was set up on 5/7/2020 to facilitate the collection of information and answer questions for the town.

Capability Assessment:

The Town of Mooers has several planning documents in place.

TOWN OF MOOERS PLANNING DOCUMENTS	
Document	Notes
Floodplain Regulations	
Zoning Regulations	Updated in 2012
Comprehensive Land Use Plan	Includes Open Space Management Plan
Building & Fire Codes	Use NYS established codes

There are no planners employed by the Town of Mooers, the Code Enforcement Officer and the Zoning Board does most of this work with support provided by the Clinton County Planning Department. The Town Supervisor functions as the Emergency Manager in times of need. Engineers are hired as needed when there is work, there are certain agencies that are routinely accessed for this type of work. The DEC provides scientific expertise about community hazards. The Town Assessors and Code Enforcement use GIS. Grant writers are hired as needed.

The town has used a variety of funding sources for projects and programming. Community Development Block Grants (CDBG) have been used for housing rehabilitation. CDBG have been used specifically to assist residents whose homes were damaged by storm events. The town shares Fire Department coverage with Ellenburg. They plow county and state roads in the winter months.

Within the town the Fire Department does outreach and education at the local elementary school. There is a food shelf at the Wesleyan Church on Hemingford Road. Northeastern Clinton School has been providing lunches to school children during the closure. The town participates in LifeFlight, a nonprofit that provides helicopter transport to local hospitals. The County Office of the Aging provides support to elderly residents in the town of Mooers. There is also a free library within the town for the use of residents and allows free access to the internet.

A self-assessment was conducted in various areas of capability for the town. The four dimensions, Planning and Regulatory, Administrative and Technical, Education and Outreach, and Financial were all ranked as moderate.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF MOOERS CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	N	N	Y	Also share services with Ellenburg
Critical Vehicle and Equipment Storage	N	N	Y	Town Garage
Communications Center	N	N	Y	Town Hall generator is automatic
Schools and Day Cares	N	N	Y	Mooers Elementary
Public and Private Utility Facilities	N	N	?	Solar Farm

There are no drug/alcohol treatment programs located in the town, nor is there a homeless shelter. A Tier 2 facility is located in the town, Vaincourt Fuels, though now closed is still a storage site.

There are 4 locations in the town suitable for displaced residents

TOWN OF MOOERS TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS						
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?	
Lazy Days Campground, 111 Lazy Days Lane	Private	N	Y	Y	Y	
Town Garage, 72 Atlas Road	Public	N	Y	N	N	
Mooers Elementary, 16 School Street	Public	N	Y	Y	Y	
Mooers Rec Park, Park Lane	Public	N	Y	Y	Y	

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Mooers. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured

structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 2 repetitive loss structures in Mooers.

Mooers will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF MOOERS FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
2	4	8	\$27,099

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF MOOERS HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High			
	Med			
	Low			Avalanche, Dam Failure, Drought, Earthquake, Extreme Cold, Extreme Heat, Floods, Hail Storms, High Winds/ Tornadoes, Hurricanes, Ice Storms, Landslides, Severe Winter Storms, Thunderstorms, Transportation (Truck & Rail), Wildfire

Potential Loss:

Potential loss was calculated for the Town of Mooers. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture 200 Residential 300 Vacant Lands
- 400 Commercial 500 Recreation/ Entertainment 600 Community Services
- 700 Industrial 800 Public Service 900 Forest, Conservation
Lands, and Parks

TOWN OF MOOERS POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	7,273.1	27	\$2,406,500	2.7	\$240,650
200	22,386.2	1,457	\$104,426,300	145.7	\$10,442,630
300	21,262.5	74	\$401,080	7.4	\$40,108
400	233.9	47	\$5,216,300	4.7	\$521,630
500	97.3	1	\$211,800	0.1	\$21,180
600	112.8	18	\$5,969,700	1.8	\$596,970
700	1,251.9	3	\$69,300	0.3	\$6,930
800	342.7	8	\$4,456,800	0.8	\$445,680
900	1,668.9	4	\$18,200	0.4	\$1,820
TOTAL	54,629.3	1,639	\$123,175,980	163.9	\$12,317,598

TOWN OF MOOERS STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	10	\$585,600
300	2	\$2,400
Total	12	\$588,000

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Mooers reviewed the county project list from the 2014 plan. They have included a status of efforts in Mooers to advance on these county mitigation project. Projects listed in the 2014 plan specific to Mooers were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Mooers as the plan was being updated in 2020.

TOWN OF MOOERS 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding/ flash floods	Reduce flooding of homes and road washouts Goal 1	Install overflow culverts at the bridge on Scriver Road	H-\$200,000	Town executive, county/local DPW	2013-2014 LT	H	Ongoing		

TOWN OF MOOERS MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Adopt the Updated CEMP	Officially adopts the CEMP released by CCOES	Officially adopt the updated CEMP released by CCOES, to help coordinate mitigation actions on a regional level	All	Town Supervisor/ CCOES	-	2021	Town Budget	H	1. Local Plans and Regulations
2. Develop storm water conveyance system plan to mitigate flooding	New storm water plan will assess culverts and develop a cleaning/replacement plan to reduce flooding	Perform routine cleaning of culverts in town, assess culverts for need of upgrading/replacement	Flood	Town Supervisor and Highway Department	L	Ongoing	Town Budget		2. Structural and Infrastructure Projects





















ArcGIS Maps for Town of Mooers:

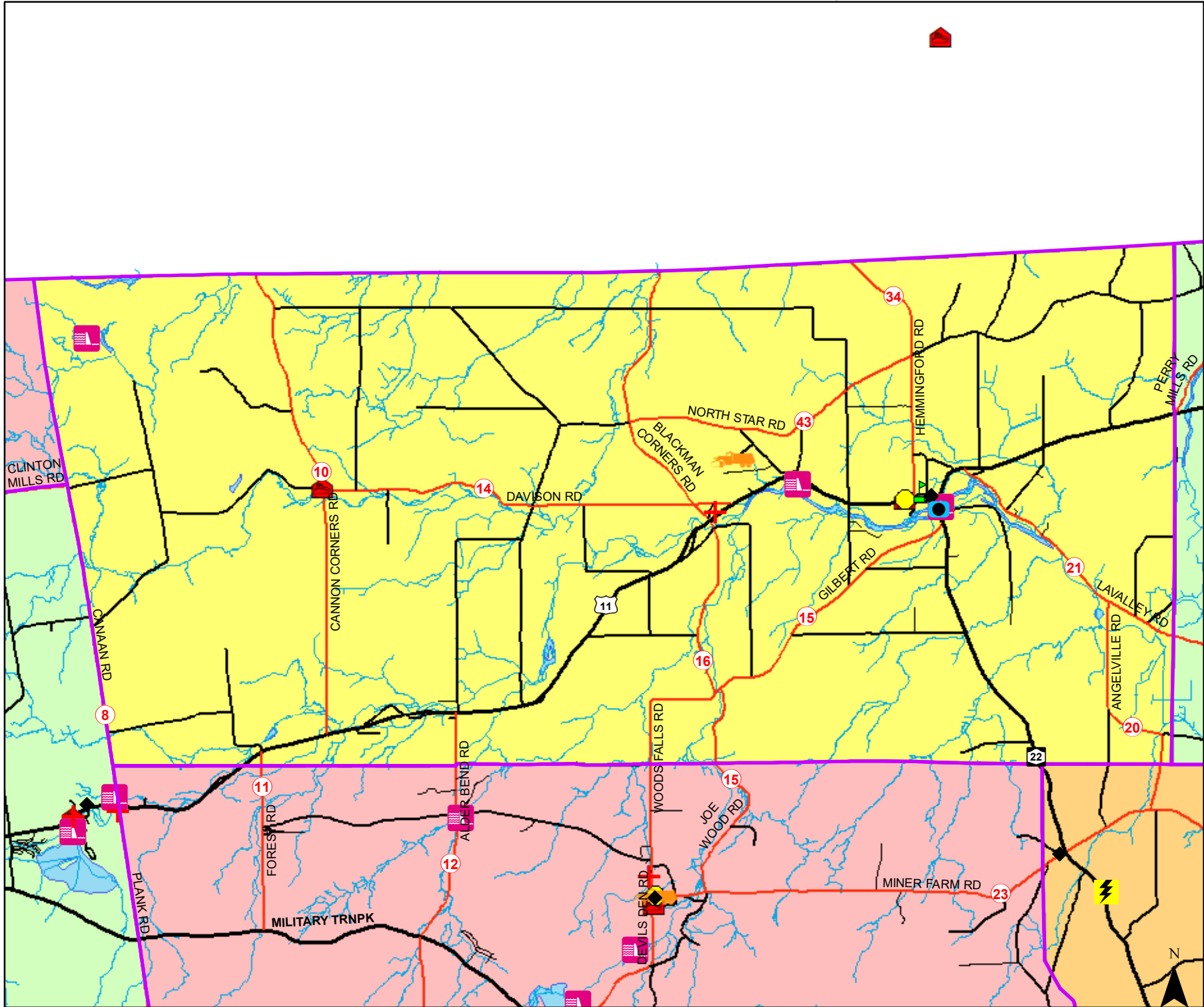
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1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

MOOERS CRITICAL FACILITIES





















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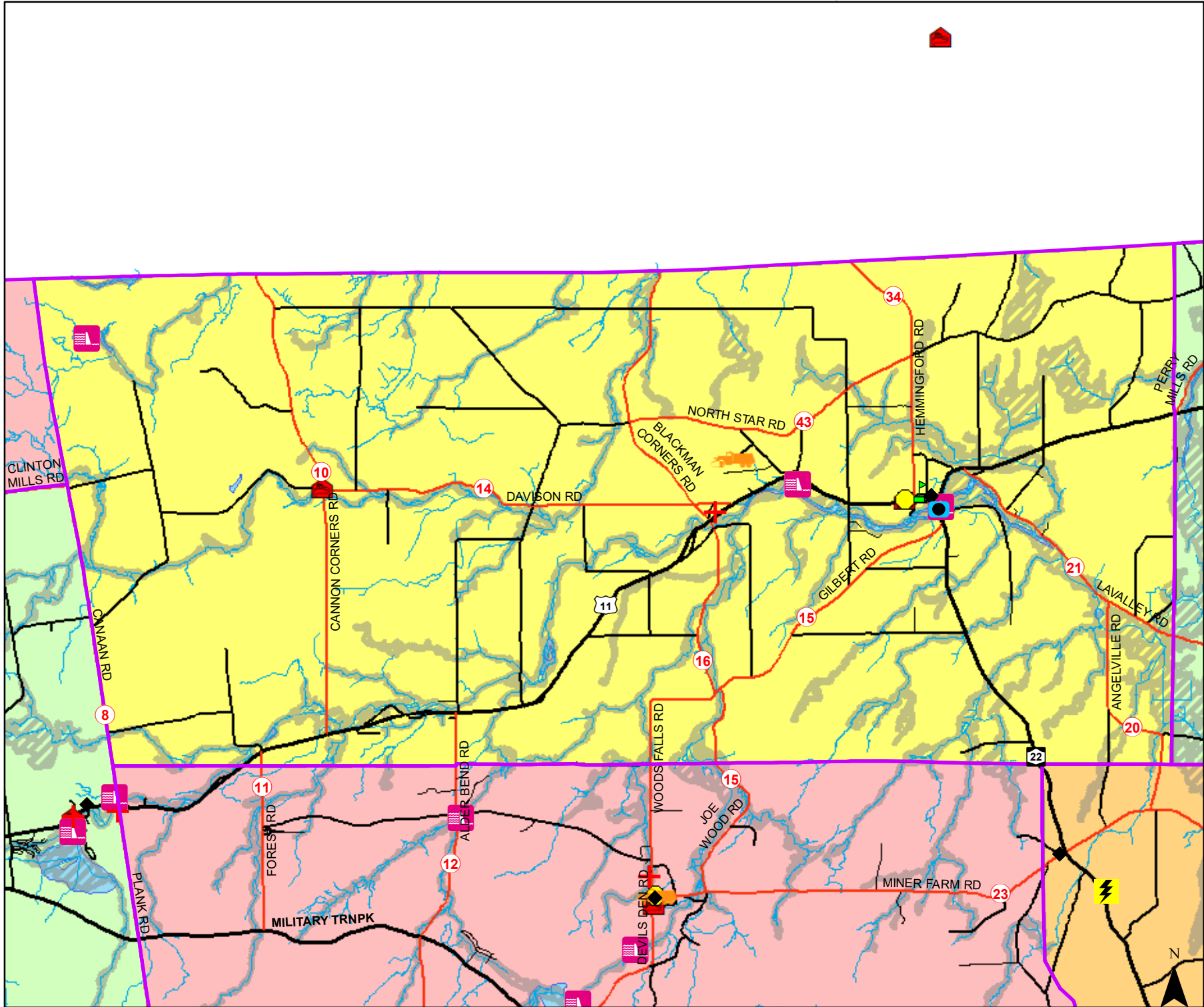
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MOOERS CRITICAL FACILITIES

LEGEND

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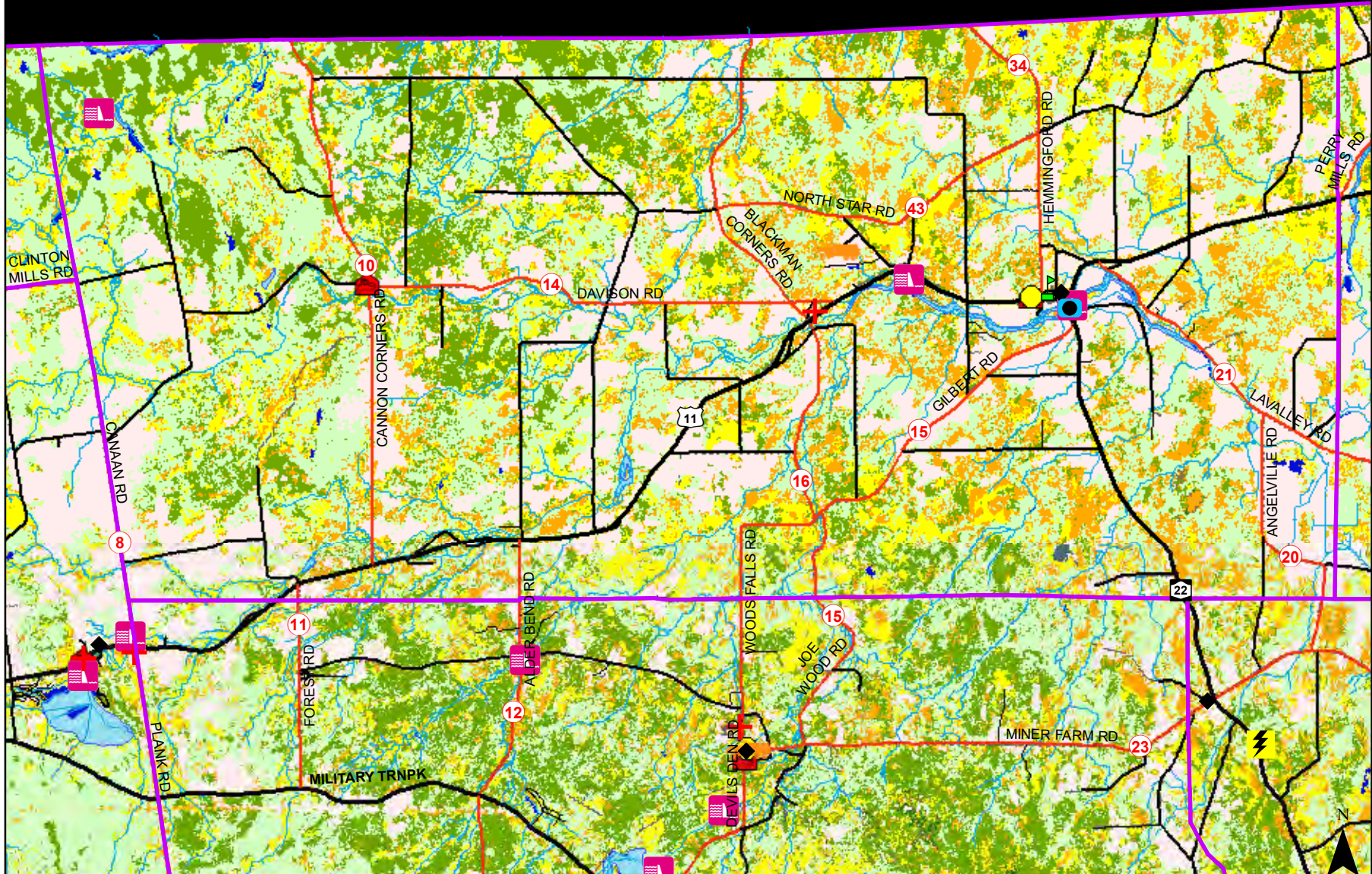
MOOERS WILDFIRE FUEL MAP

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







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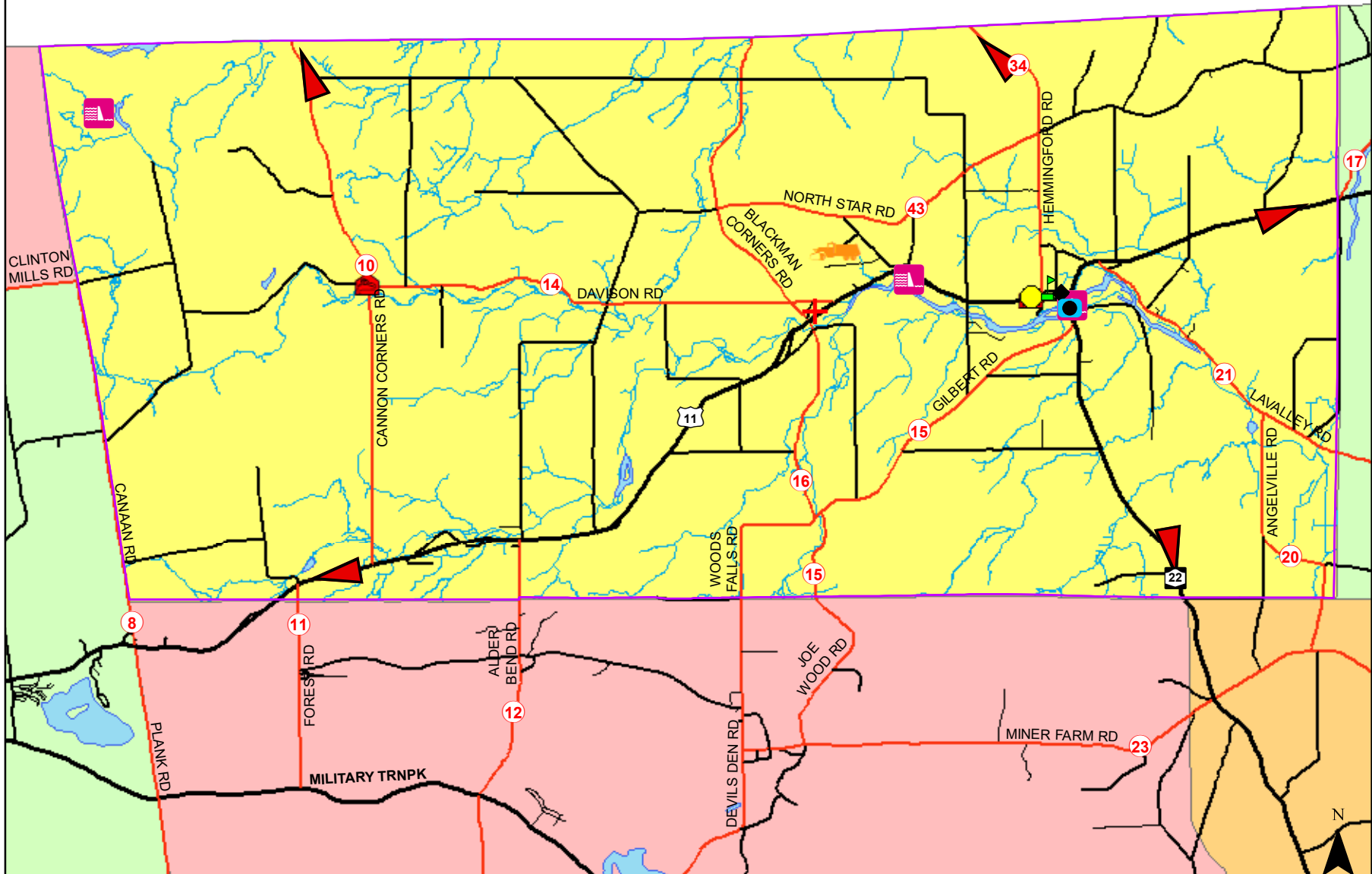
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MOOERS EVACUATION ROUTES

LEGEND

-  Evacuation Route
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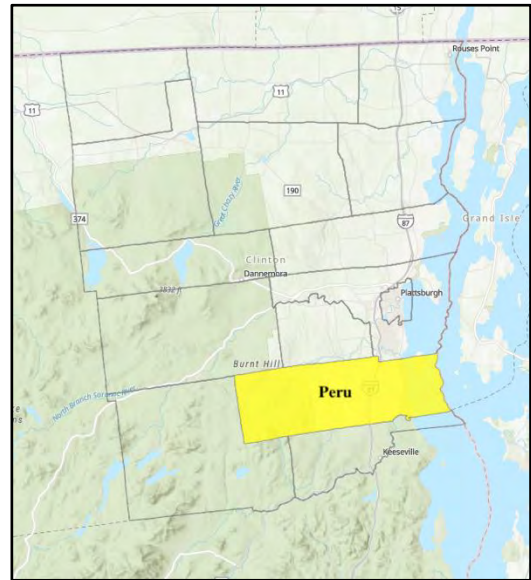
Town of Peru

Introduction:

The Town of Peru established in 1792 is located in the southeastern portion of the county. It is bordered to the north by Schuyler Falls, the Town of Plattsburgh, and Saranac, to the west by Black Brook, to the south by Ausable, and the east by Lake Champlain. The earliest settlers in the Town of Peru were Quakers that settled the Keese homestead a historic location in the town.

The majority of Valcour Island, the site of a pivotal battle in the Battle of Plattsburgh, is located within the town boundaries. It is the fourth largest island in Lake Champlain. On the island is Bluff Point Light a historic lighthouse that once guided ships through the narrow channel between the island and the New York State. The lighthouse is now a historical museum operated by the Clinton County Historical Association and is located within the Adirondack State Park. The island is also part of the Chazy Fossil Reef National Landmark, an exposed Ordovician fossil reef ranging from 450-480 million years old. There is a high variety of fossils that can be observed in exposed portions of the sedimentary rock and is evidence of a geological time when the Champlain valley was under an ocean.

The town's industry was rooted in sawmills, Hayworth Village (now a park) was the former site of one of the major sawmills located in the heart of the town between the late 1800s until its closure in 1972. Predominantly an area now defined by agriculture, there are several apple orchards and dairy farms located within the town's borders.



TOWN OF PERU TABLE OF FACTS	
Land Area	92.38 sq. miles (59,123.2 acres)
Incorporated Villages	N/A
Hamlets	Lapham's Mills, Peru, South Junction, Valcour
2010 Population Census	6,998
Population Density	75.8 people/sq. mile
Governance	Town Supervisor and Council
Total Assessed Valuation	\$ 503,817,622
Highest Elevation	436'
Largest Lake	Adjacent to Lake Champlain
Rivers	AuSable River, Little AuSable River
Dams	3
Bridges	19
Interstate Highway	I-87
State Routes	9, 22, 22B, 442
Land Classified: Agricultural	7,766.6 acres
Land Classified: Industrial	299 acres
Land Classified: Residential	14,358.9 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Peru Fire Department
Schools	Peru Central School
Railroads	Canadian-Pacific Rail Line
Interstate Bridge	5
Largest Employers	Peru Central School District (K-12)
Law Enforcement	State Police (I-87 station)
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Town Reservoir (Furnace Brook), Little AuSable Reserve
Emergency Shelters	Peru Central School
Critical Facilities	NYS Police, Peru Fire Department, Town Hall, Peru Central School

Planning Process:

The planning process was facilitated remotely for the Town of Peru, as the projected timeline for meeting with this town ended up falling during the COVID-19 pandemic in Clinton County. The Town Supervisor was contacted through email, and a video conference was set up on May 18th, 2020 to facilitate the collection of information for the town.

Capability Assessment:

The Town of Peru has several planning mechanisms in place.

TOWN OF PERU PLANNING DOCUMENTS	
Document	Notes
Zoning Regulations	Amended in 2013
Floodplain Regulations	
Comprehensive Land Use Plan	Adopted in 2011/2012, includes open space management and farmland preservation
Stormwater management Plan	Used a lot by the zoning/planning board
Building & Fire Code	Use NYS established code
Wastewater and Water Treatment Vulnerability Assessment Plan	Used for grant funding opportunities

The Town of Peru is governed by a Town Supervisor and Council. The Supervisor acts as the Emergency Manager in times of need. There are no planners on staff, but there is a Planning Board that establishes committees when needed, uses the Clinton County Planning Department for supports, and hires outside contractors as needed. Engineers are hired as needed, and there are some currently contracted with the town. There is a full-time floodplain manager/code enforcement officer, who is also skilled in GIS. Land surveyors are hired as needed. The DEC and the Army Corps provide scientific expertise regarding local hazards when needed. Grant writers and fiscal staff are hired when there are large complex grants.

Several sources of funding are used by the town. Capital improvement planning has been used for hazard mitigation projects and will be used for an upcoming water/sewer project in the town. Community Development Block Grant (CDBG) funds were used for a sewer project in a mobile home park located in the town. There are water and sewer fees used for system maintenance and upgrades collected by the town. There are also shared services agreements with other towns and Clinton County.

The Peru Fire Department does education and outreach in the local schools, they talk about fire prevention and also have “project prom” in the spring to highlight risks of underage drinking and driving. This annual even enlists local students from Peru High School to play parts in a scene that depicts a tragedy on prom night as a result of a drunk driving accident.

The Town of Peru assessed its capabilities in four areas. They ranked their Planning and Regulatory capacity, Administrative and Technical, and Financial capacities as high. Their Education and Outreach they ranked as moderate.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF PERU CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Police Station	N	N	Y	Substation located on I-87 Northbound
Fire Station	N	N	Y	
Critical Vehicle and Equipment Storage Facility	N	N	Y	
Communications Center	N	N	Y	Also Verizon Comm Building behind Town Hall
Schools	N	N	Y	
Wastewater and Water Treatment Plants	N	N	Y	The wastewater treatment plant is within close proximity of the floodplain of the Little AuSable River

There are no drug and alcohol treatment centers, or medical facilities in the town. There are no homeless shelters. There is a Tier 2 facility MX Fuels located on the corner of Chamberlain Rd where it intersects with Dashnaw Rd. This facility stores fuel and propane and is a distribution hub for the company. NYSEG also has substations in town for electricity.

There were 6 locations identified for temporary housing.

TOWN OF PERU TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Peru Central School, School St.	Public	N	Y	Y	Y
St. Augustine's School (Closed), 32 N. Main St	Private	N	Y	Y	Y
Iroquois Campground and RV Park, 270 Bear Swamp Rd	Private	N	Y	Y	Y
AuSable Pines Campground, 3281 Lakeshore Rd (Rte. 9)	Private	N	Y	Y	Y
AuSable Point Campground, 3346 Lakeshore Drive (Rte. 9)	Public	Y	N	Y	Y
Macomb State Reservations, 201 Campsite Rd.	Public	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Peru. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 8 repetitive loss structures in the Town of Peru.

Peru will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF PERU FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
8	8	23	\$424,454

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF PERU HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Hailstorms		
	Med	Floods, Transportation (Rail)	Extreme Cold, Extreme Heat, Ice Storm, Severe Winter Storms, Thunderstorms, Wildfires	
	Low	Dam Failure, Drought, Hurricane	Earthquake, Transportation (Truck)	Landslides, Seiche Floods

Hail is of particular concern to the Town of Peru, if it causes scarring when the apple crop is still growing, those scars will make the entire crop ineligible to be sold as whole fruit and will instead have to be sold to make sauce or juice. Some orchards have installed hail netting to help mitigate damages suffered from severe thunderstorms that produce hail in the summer months. Another concern is the large amount of truck traffic that travels through the center of town when the State Police establish their checkpoint on I-87. The main road used is right through the center of town where there is the most traffic and populations density. The contents of these trucks are unknown and therefore pose a unknown hazard to residents.

Potential Loss:

Potential loss was calculated for the Town of Peru. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

100 Agriculture	200 Residential	300 Vacant Lands
400 Commercial	500 Recreation/ Entertainment	600 Community Services
700 Industrial	800 Public Service	900 Forest, Conservation Lands, and Parks

TOWN OF PERU POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	7,766.6	24	\$8,262,700	2.4	\$826,270
200	14,358.9	2,372	\$288,689,700	237.2	\$28,868,970
300	8,503.2	50	\$523,200	5	\$52,320
400	652.0	89	\$19,131,400	8.9	\$1,913,140
500	535.5	13	\$2,818,700	1.3	\$281,870
600	128.8	26	\$24,286,400	2.6	\$2,428,640
700	299.0	0	0	0	0
800	195.3	13	\$4,176,922	1.3	\$417,692
900	16,882.7	12	\$372,200	1.2	\$37,220
TOTAL	49,322.0	2,599	\$348,261,222	259.9	\$34,826,122

TOWN OF PERU STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	3	\$206,800
300	1	\$65,400
600	1	\$480,000
Total	5	\$752,200

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Peru reviewed the county project list from the 2014 plan. They have included a status of efforts in Peru to advance on these county mitigation project. Projects listed in the 2014 plan specific to Peru were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Peru as the plan was being updated in 2020.

TOWN OF PERU 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding/ flash flooding	Reduce flooding of homes and road washouts Goal 1	Replace culvert pipes with box culverts on Fuller Road	H-\$275,000	Town executive, county/local DPW	2014 LT	H	Completed		Army Corps would not allow box culvert due to restrictions for trout movement, increased project cost by \$48,000.

TOWN OF PERU ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
waterplant upgrade		back up generator, tank mixers upgraded, building.	All Hazards	Town of Peru	\$3.62mil	2012	bond (EFC)		#2 Structural and Infrastructure Projects
South Acres		Sewer upgrade to mobile home park		sponsored by Town of Peru		2011	CDBG		#2 Structural and Infrastructure Projects
Salt shed upgrade			Severe Winter Storms	Town of Peru			Town Budget		#3 Natural Systems Protection
box culvert		Patton Rd.	Flooding	Town of Peru			Town Budget		#2 Structural and Infrastructure Projects
New Firetruck			All Hazards	Peru Fire District		2019	Fire Dist. Budget		#2 Structural and Infrastructure Projects

Plow Trucks (x2)		Purchased two new plow trucks to help clear roads	Ice Storm, Severe Winter Storms	Town of Peru/ Highway Department		2019	Town budget		#2 Structural and Infrastructure Projects
Grade-all		Purchased new grade-all for town.		Highway Dept.		2016	Town Budget		#2 Structural and Infrastructure Projects
vac truck/ sewer jet truck		Purchased new equipment for town use.	All Hazards	Town of Peru		2016	Town Budget		#2 Structural and Infrastructure Projects
Back up generator for Town hall		Automatic generator for Town Hall installed	All Hazards	Town of Peru		2020	Town Budget		#2 Structural and Infrastructure Projects
Equipment Storage		Upgraded equipment storage shed.	All Hazards	Town of Peru		2015	Town Budget		#2 Structural and Infrastructure Projects

TOWN OF PERU MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Develop wastewater treatment plant plan	Replace the two lift stations and develop a plan to identify component that need to be repaired, replaced or upgraded	Replace two lift stations and develop a plan to assess the needs of the wastewater treatment plant	All Hazards	Town of Peru	\$5mil	ST	USRD, EFC (wiiia grant)	H	#2 Structural and Infrastructure Projects
2. Wastewater upgrade	Upgrade needed to meet current DEC requirements	Upgrade wastewater treatment plant to meet current DEC standards and protect local water resources	All Hazards	Town of Peru	\$7-8mil	by 2025	None identified yet	H	#2 Structural and Infrastructure Projects
3. Upgrade road infrastructure	Upgrade culverts to prevent washout/collapse	Replace/upgrade culvert on Telegraph Rd.	All Hazards	Town of Peru, Army Corps	\$1.4 mil	LT	Town Budget	H	#2 Structural and Infrastructure Projects

4.Upgrade road infrastructure	Upgrade bridge on Telegraph Rd. to prevent collapse	Bridge on Telegraph needs to be replaced and upgraded to be able to withstand farm equipment and future flood events	All Hazards	Town of Peru, Army Corps	\$700K-\$1mil	LT	County Highway Dept.	H	#2 Structural and Infrastructure Projects
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ArcGIS Maps for Town of Peru:

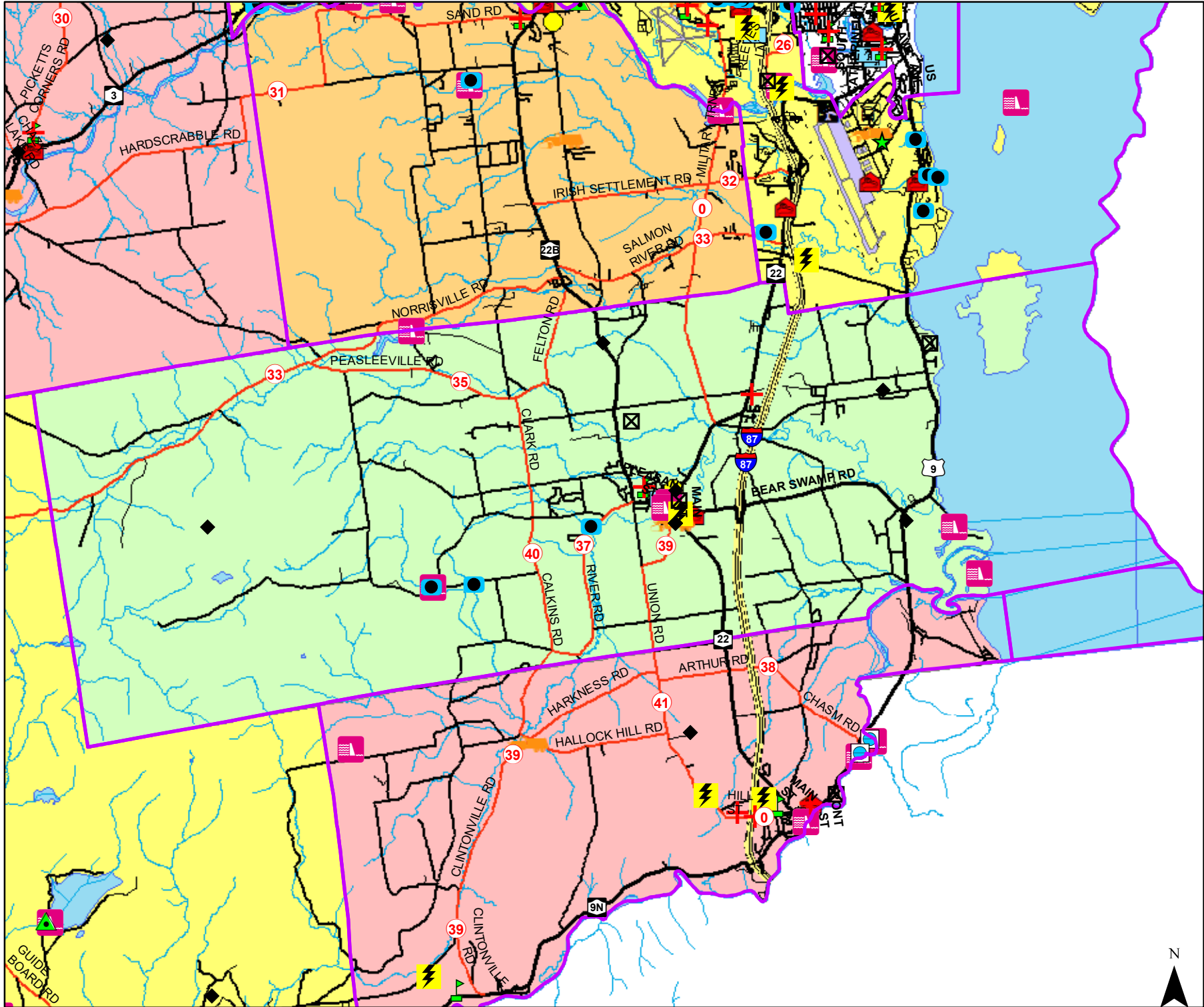
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

PERU CRITICAL FACILITIES





















LEGEND

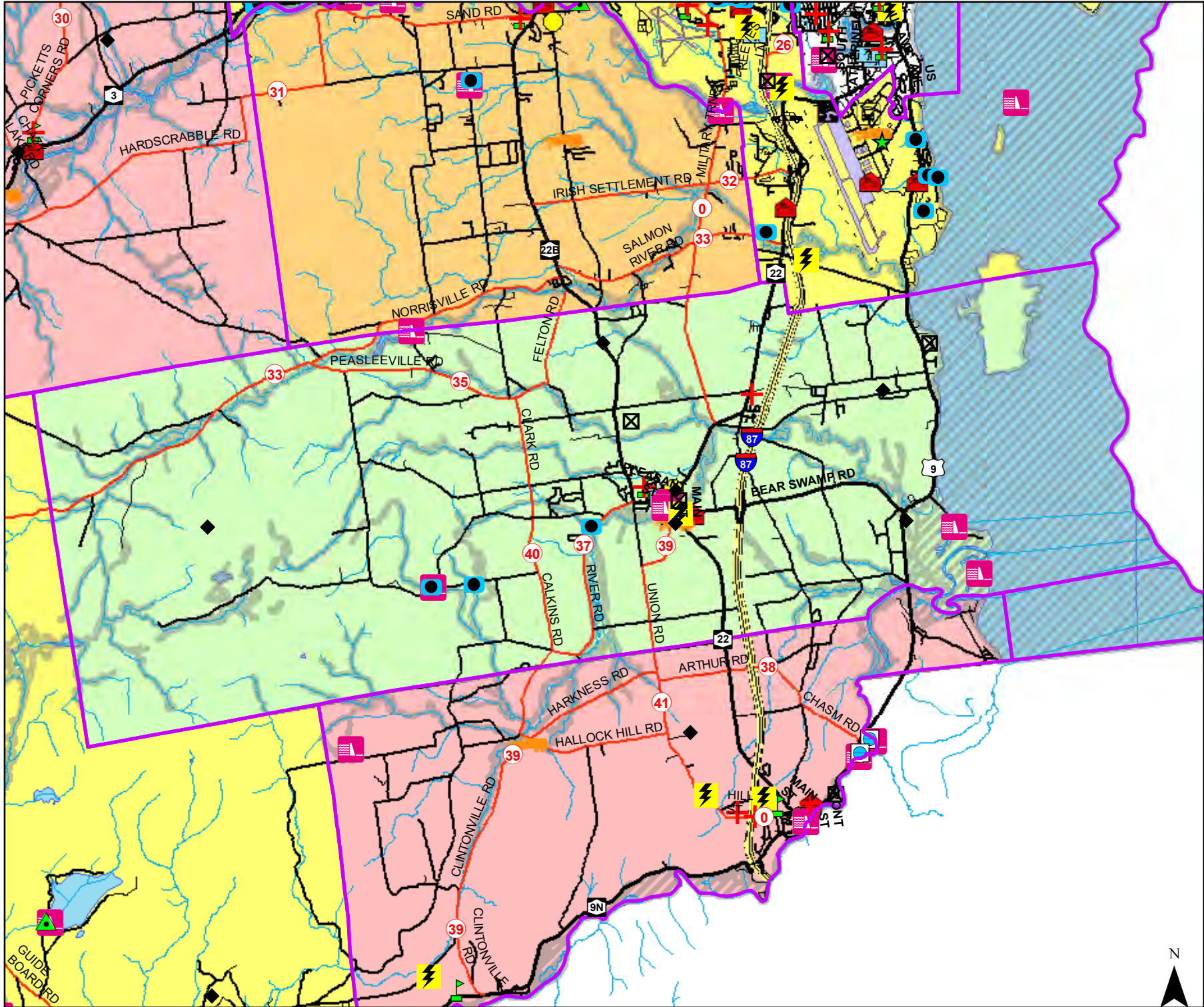
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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers



PERU CRITICAL FACILITIES

LEGEND

-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
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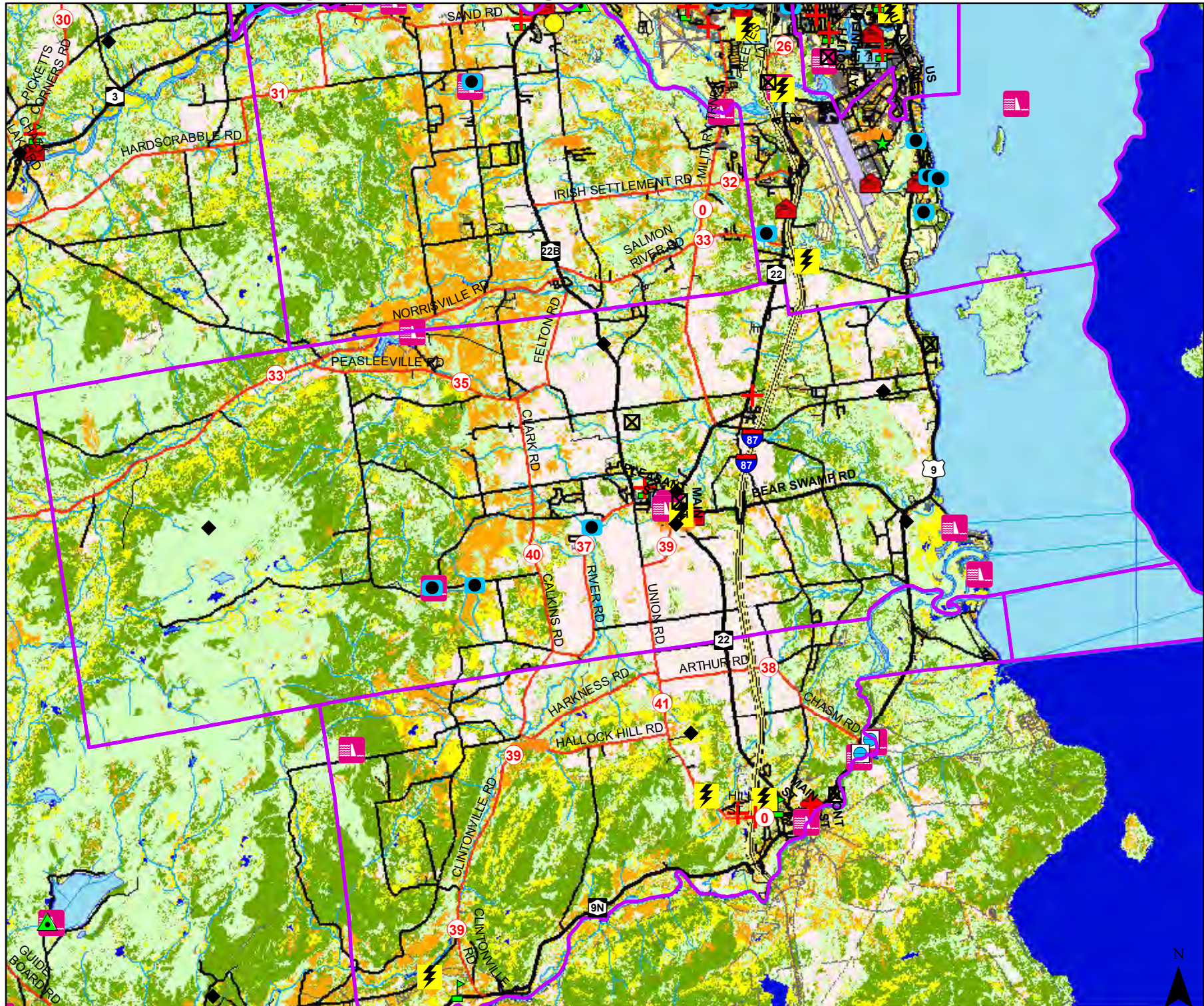
PERU WILDFIRE FUEL MAP

LEGEND

us_110fbfm13





















FBFM13

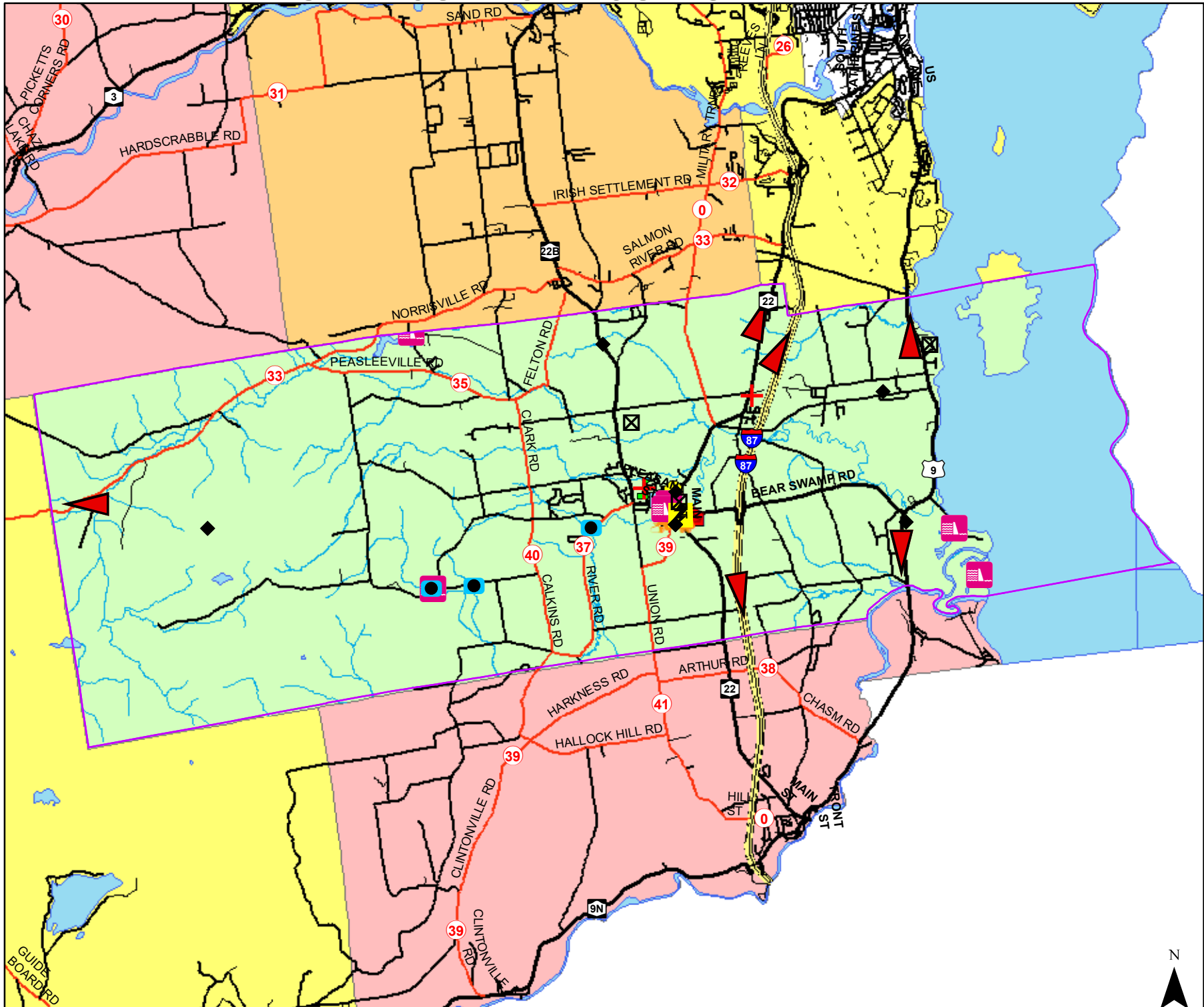
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- FBFM1
- FBFM2
- FBFM3
- FBFM4
- FBFM5
- FBFM6
- FBFM7
- FBFM8
- FBFM9
- FBFM10
- Urban
- Agriculture
- Water
- Barren
- Municipal Boundary
- Natural_Gas
- Hydro_Generation
- Flood_Control_Structure
- Water_Supply
- Communications
- Sewage_Water_TX
- EOC_Locations
- Red_Cross_Shelters
- Schools
- Electric_Substation
- Dams2019
- Police_stations
- Nursing_Homes
- Airport_Terminal
- Bus_Station
- Ferry_Dock
- Highway_Garages
- Town_Municipal_Halls
- Health_Centers
- Fire_Stations
- Airstrip



PERU EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
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-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls



City of Plattsburgh

Introduction:

The City of Plattsburgh was settled in 1785, incorporated as a village in 1815 and then as a city in 1902. It is located completely within the Town of Plattsburgh along the shore of Lake Champlain. The Saranac River runs through the city and empties into Cumberland Bay next to the city's wastewater treatment facility. The river was once important to local industry, however, now is predominantly useful for recreation. The Saranac River Trail runs alongside the Saranac River from the city's downtown district to the SUNY college campus, and is a paved trail offering benches and an accessible treehouse along the river.

The City of Plattsburgh is the seat of Clinton County, being the most populous and densely populated area within the county. Several historic landmarks, and monuments are located within the city as well the city played an important role in the Battle of 1812. The Battle of Plattsburgh was a mixture of land and amphibious battle that halted the British progression into the United States. The largest monument in the city the MacDonough monument is a 135-foot tall memorial with a large copper eagle on top commemorating the victory in the Battle of Plattsburgh.

The SUNY Plattsburgh campus is located within the city limits, it began as the Plattsburgh Normal School in 1889. The college offers a variety of undergraduate and graduate degrees, there are typically around 5,700 students with roughly 5,200 being undergraduate students. The campus spans 256 acres and has a total of 36 buildings. Hawkins Hall located on Beekman Street is the most distinctive building on campus and was replaced the Plattsburgh Normal School after it was destroyed by a fire in 1929.

Also located within the city is the UVM-Champlain Valley Physicians Hospital the largest medical facility in Clinton County. The hospital is a level III trauma center with approximately 300 patient beds (14 in the ICU) and employs over 2,000 people. There is a 24 hour Emergency Care Center on site, that provides a variety of services to the northeast region of the state.



CITY OF PLATTSBURGH TABLE OF FACTS	
Land Area	6.6 sq. miles (4,224 acres)
Incorporated Villages	N/A
Hamlets	N/A
2010 Population Census	19,989
Population Density	3,028 people/sq. mile
Governance	Mayor and City Council
Total Assessed Valuation	\$1,458,703,680
Highest Elevation	138'
Largest Lake	Lake Champlain (located on shores of)
Rivers	Saranac River
Dams	3
Bridges	7
Interstate Highway	I-87
State Routes	3, 9, 22
Land Classified: Agricultural	N/A
Land Classified: Industrial	261.1 acres
Land Classified: Residential	117.2 acres
Hospital/Medical Facility	UVM-CVPH
Fire & Rescue	City of Plattsburgh Fire Department
Schools	Plattsburgh City School District
Railroads	Canadian-Pacific Rail Line
Interstate Bridge	1
Largest Employers	SUNY Plattsburgh, UVM-CVPH
Law Enforcement	Plattsburgh City Police, SUNY Plattsburgh University Police
Correctional Facility	N/A
Power Utility Provider	City of Plattsburgh Municipal Services
Water Supply Sources	Mead Reservoir, West Brook Reservoir, Saranac River (surface water)
Emergency Shelters	SUNY Plattsburgh Field House, Plattsburgh City Schools
Critical Facilities	City Hall, City Fire Departments, Hospital, City Police Station

Planning Process:

The planning process was facilitated remotely for the City of Plattsburgh, as the projected timeline for meeting with this municipality ended up falling during the COVID-19 pandemic in Clinton County. The City Planner and other City Officials were contacted through email, and a video conference was set up on May 7th, 2020 to facilitate the collection of information for the various departments.

Capability Assessment:

The City of Plattsburgh has several planning mechanisms in place.

CITY OF PLATTSBURGH PLANNING DOCUMENTS	
Document	Notes
Floodplain Regulations	FEMA forms are used along with building permits
Zoning Regulations	Last updated 2001, being updated in 2020. Used for all building and development. Includes subdivision regulations, and economic development plan.
Comprehensive Land Use Plan	Being updated in 2020. This is a vision document used to guide economic and social growth.
Open Space Management Plan	Last one completed in 1971
Capital Improvement Plan	Fluid document that is updated yearly
Historic Preservation Plan	Regulates the rehabilitation preservation and development of historic structures. SHPO programmatic agreement for the US Oval Historic District.
Building & Fire Code	Use NYS established codes
Local Waterfront Revitalization Plan	In the process of being finalized, began document creation process in 2016

The City of Plattsburgh has the following administrative and technical capabilities. There is a full-time planner that is part of the Community Development Office which has 4 full-time positions. The Community Development Office provides both GIS expertise, and grant writing and fiscal management of large grants. Both the Municipal Lighting Department and The Wastewater Treatment Plant have engineers that oversee operations, but their expertise is only used in their respective departments. There are lab techs employed at both the wastewater and water treatment facilities. When needed DPW, Codes, and Planning hire third party engineers for support. The Mayor would serve as the Emergency Manager in times of need. There is a full-time floodplain manager/code enforcement officer that has two individuals working underneath him. There are no land surveyors directly employed by the city.

There have been a variety of funding sources used by the city of Plattsburgh. Capital Improvement Programming has been used in the past to repair roads and purchase equipment. Community Development Block Grants have been used to support a revolving loan fund that is targeted as housing rehab and façade loans. The City collects electric and water utility fees. There is a waterline agreement with the Town of Plattsburgh for sewer. Notably the City of Plattsburgh was selected as one of the recipients of a \$10 million grant as part of Governor Cuomo's Downtown Revitalization Initiative. This grant was obtained with the goal of using the money to help transform the City's downtown district.

The City of Plattsburgh has education and outreach activities provided by a few different agencies. The Plattsburgh City School District provides natural disaster and safety related school programming. The Police and Fire Chiefs provide public education regarding fire safety and household preparedness. Food banks are provided by the Salvation Army, JCEO and The Clinton County Office of the Aging.

The City self-assessed capabilities in Planning and Regulatory and Education and Outreach capabilities as being limited. Low staffing levels that exist within the city were cited as the reason for the ranking. Administrative and Technical capacity was ranked as moderate. Financial capability was unrated.

Critical facilities in the city were evaluated in regard to their flood vulnerability.

CITY OF PLATTSBURGH CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Police Station	Y	N	Y	River being dredged as part of coal tar sediment removal.
Fire Station	N	N	Y	
Critical Vehicle and Equipment Storage	N	N	N	
Utility and Power Generating Stations	N	N	Y	
Medical Facility	N	N	Y	UVM-CVPH
Schools	N	N	Y	5 Buildings in various locations in city
Public and Private Utility Facilities	N	N	Y	
Drinking and Wastewater Treatment Plants	N	N	Y	

There are no alcohol and drug treatment centers, nor are there any homeless shelters located in the city. No tier 2 facilities exist within the City of Plattsburgh.

There were two located identified that were deemed appropriate for the placement of temporary housing such as RVs and trailers:

CITY OF PLATTSBURGH TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Melissa Penfield Park, 139 Boynton Ave.	Public	N	Y	Y	Y
City Boat Launch Parking Lot, Dock St.	Public	Y	Y	N	N

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the City of Plattsburgh. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 5 repetitive loss structures in the City.

The City of Plattsburgh will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, code enforcement, and the community development office to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

CITY OF PLATTSBURGH FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
5	36	27	\$1,309,895

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

CITY OF PLATTSBURGH HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Extreme Cold, Floods, Severe Winter Storms		
	Med	Ice Storms	Dam Failure, High Winds/ Tornadoes, Seiche Floods, Thunderstorms	Earthquake
	Low	Transportation (Rail)	Hurricanes	Avalanche, Drought, Extreme Heat, Hail Storms, Landslides, Transportation (Truck), Wildfires

The City of Plattsburgh has a train station located near the city’s downtown district adjacent to the Plattsburgh Boat launch, there is potential for the city marina and boat launch to be cut off from access in the event of a train malfunction. The Saranac River runs through the city, and has high ice jam potential in the winter, which has caused problems with structures located in the floodplain.

Potential Loss:

Potential loss was calculated for the City of Plattsburgh. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 8 codes on the Clinton County Real Property Tax Services website:

- 200 Residential 300 Vacant Lands 400 Commercial
- 500 Recreation/ 600 Community Services 700 Industrial
Entertainment
- 800 Public Service 900 Forest, Conservation
Lands, and Parks

CITY OF PLATTSBURGH POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
200	117.2	3,934	\$503,043,900	393.4	\$50,304,390
300	260.4	46	\$398,700	4.6	\$39,870
400	322.5	778	\$305,302,892	77.8	\$30,530,289
500	115.3	15	\$10,119,000	1.5	\$1,011,900
600	640.2	70	\$368,812,200	7.0	\$36,881,220
700	261.1	17	\$43,726,200	1.7	\$4,372,620
800	71.5	32	\$40,435,552	3.2	\$4,043,555
900	140.3	9	\$6,659,900	0.9	\$665,990
TOTAL	1,928.4	4,901	\$1,278,498,344	490.1	\$127,849,834

CITY OF PLATTSBURGH STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	18	\$1,781,800
400	73	\$105,987,700
500	2	\$1,512,200
600	1	\$123,600
700	13	\$3,250,000
800	7	\$143,687,300
900	4	\$12,615,000
Total	118	\$268,957,600

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

The City of Plattsburgh reviewed the county project list from the 2014 plan. They have included a status of efforts in the City of Plattsburgh to advance on these county mitigation project. Projects listed in the 2014 plan specific to the City of Plattsburgh were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by the City of Plattsburgh as the plan was being updated in 2020.

CITY OF PLATTSBURGH 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce impact of flooding to protect life and property Goal 1	Ensure reservoir dams are stable and functioning properly by replacing or repairing dams and spillways	H- \$10 million	City executive/ City of Plattsburgh Environmental Manager	ST	H	On hold	Not started	Additional analysis of dam stability is being performed. Also performing an investigation of potential groundwater well installation.
Reduce impact of flooding	Reduce impact of flooding to protect life and property Goal 1	Provide advance notice of dams overtopping by installation of remote level monitoring equipment	H- \$50,000	City executive/ City of Plattsburgh Environmental Manager	ST	H	On hold	Not started	Additional analysis of dam stability is being performed.

Reduce impact of flooding	Reduce impact of flooding to protect life and property Goal 1	Ensure dams can be operated and maintained during storms by improving access roads and bridge	H-\$500,000	City executive/ City of Plattsburgh Public Works	ST	H	On hold	Not started	Other project has priority over this one.
Reduce impact of multi-hazards	Reduce impact of multi-hazards to protect life and property Goal 1, 3	Maintain reliable, safe drinking water and for fire protection with installation of emergency generator at water filtration plant	H-\$500,000	City executive/ City of Plattsburgh Public Works	ST	H	On hold	In the process of doing preliminary work to complete this project.	

CITY OF PLATTSBURGH ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Underwood Trailer Park Renovations		Replace and raise trailers that were damaged in January 2018 flood	Flooding	City of Plattsburgh/Community Development Office	H	Complete	Federal Funding	H	#2 Structural and Infrastructure Projects
Underwood Trailer Park Renovations		Reinforce the berm that was damaged in the January 2018 flood	Flooding	City of Plattsburgh/Community Development Office	H	Complete	Federal Funding	H	#2 Structural and Infrastructure Projects

CITY OF PLATTSBURGH MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1.LWRP finalization and project implementation	Finalize LWRP and implement projects identified in plan	Finalize the development of the Local Waterfront Revitalization Plan and implement identified projects	Flood	City of Plattsburgh	\$25,000	18 months	DOS	H	#1 Local Plans and Regulations
2. Comprehensive Plan and Zoning Ordinance Update	Update CMP and Zoning to coincide with changing city goals	Update Comprehensive Plan and Zoning Ordinance Documents to coincide with new goals	All Hazards	City of Plattsburgh	\$100,000	18 months	DOS	H	#1 Local Plans and Regulations
3. Mead Dam Stability Analysis	Determine the needs for this crucial component of the city reservoir	Conduct analysis of the stability of the Mead Dam, the city water reservoir	Flood	City of Plattsburgh	\$21,000	12 months	NYS WIIA	H	#2 Structural and Infrastructure Projects
4. Groundwater Well Development	Develop a groundwater drinking source for city. Wells will provide consistent quality and quantity.	Investigate and develop groundwater wells to be used as primary drinking water source for city	Flood	City of Plattsburgh	\$5 Million	12 months	NYS WIIA	H	#2 Structural and Infrastructure Projects





















ArcGIS Maps for City of Plattsburgh:

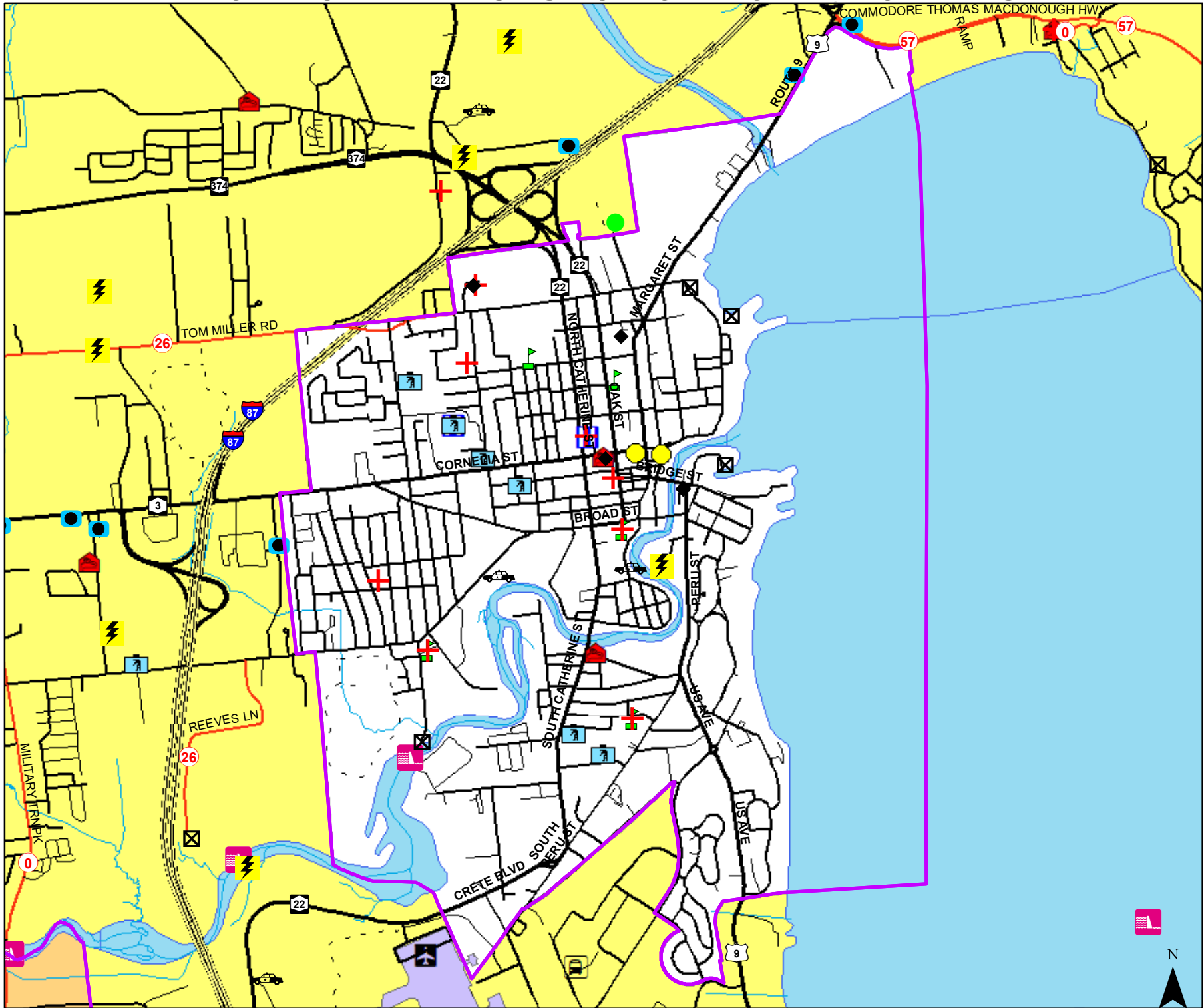
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

CITY OF PLATTSBURGH CRITICAL FACILITIES





















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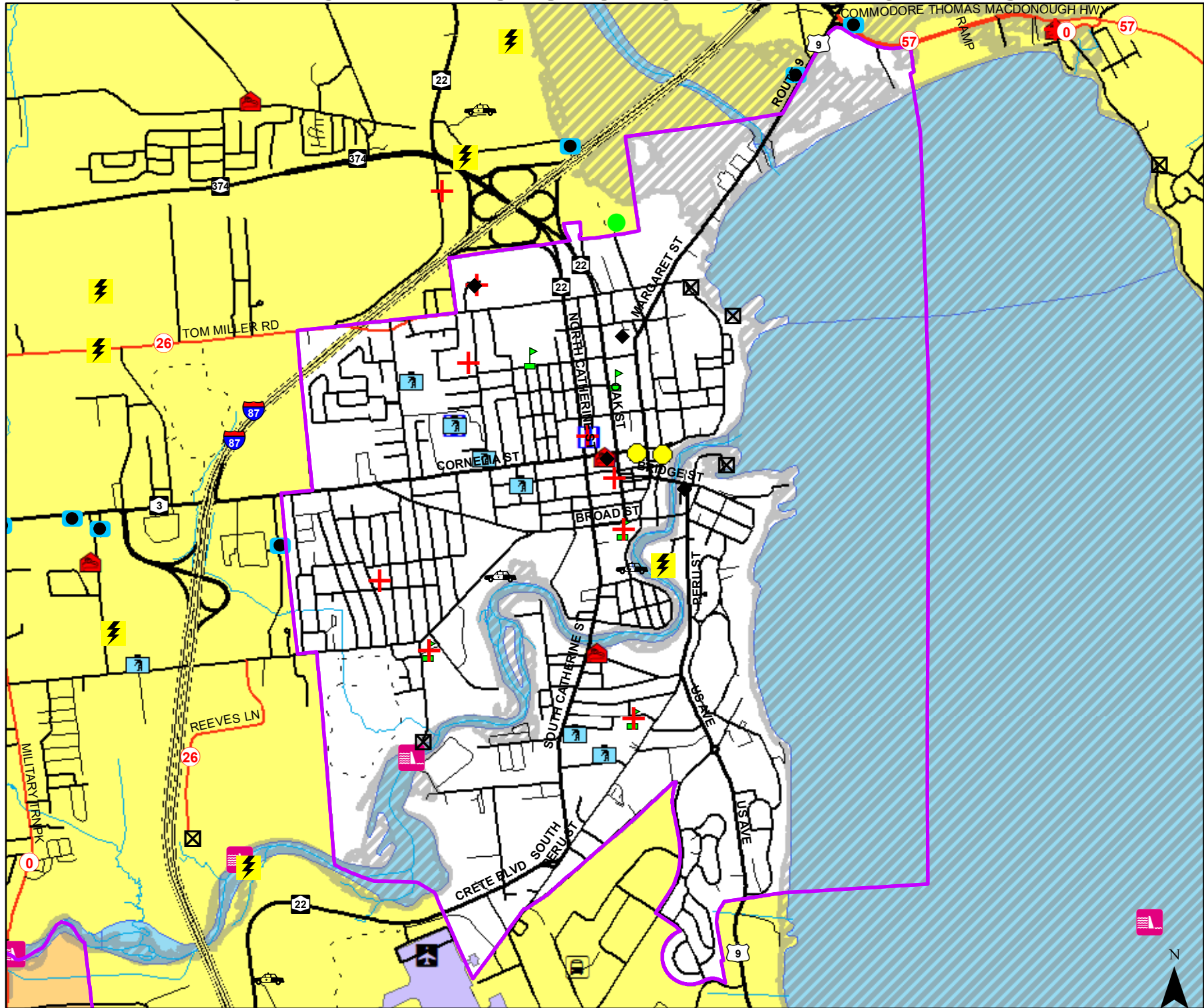
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-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
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-  Health_Centers



CITY OF PLATTSBURGH CRITICAL FACILITIES

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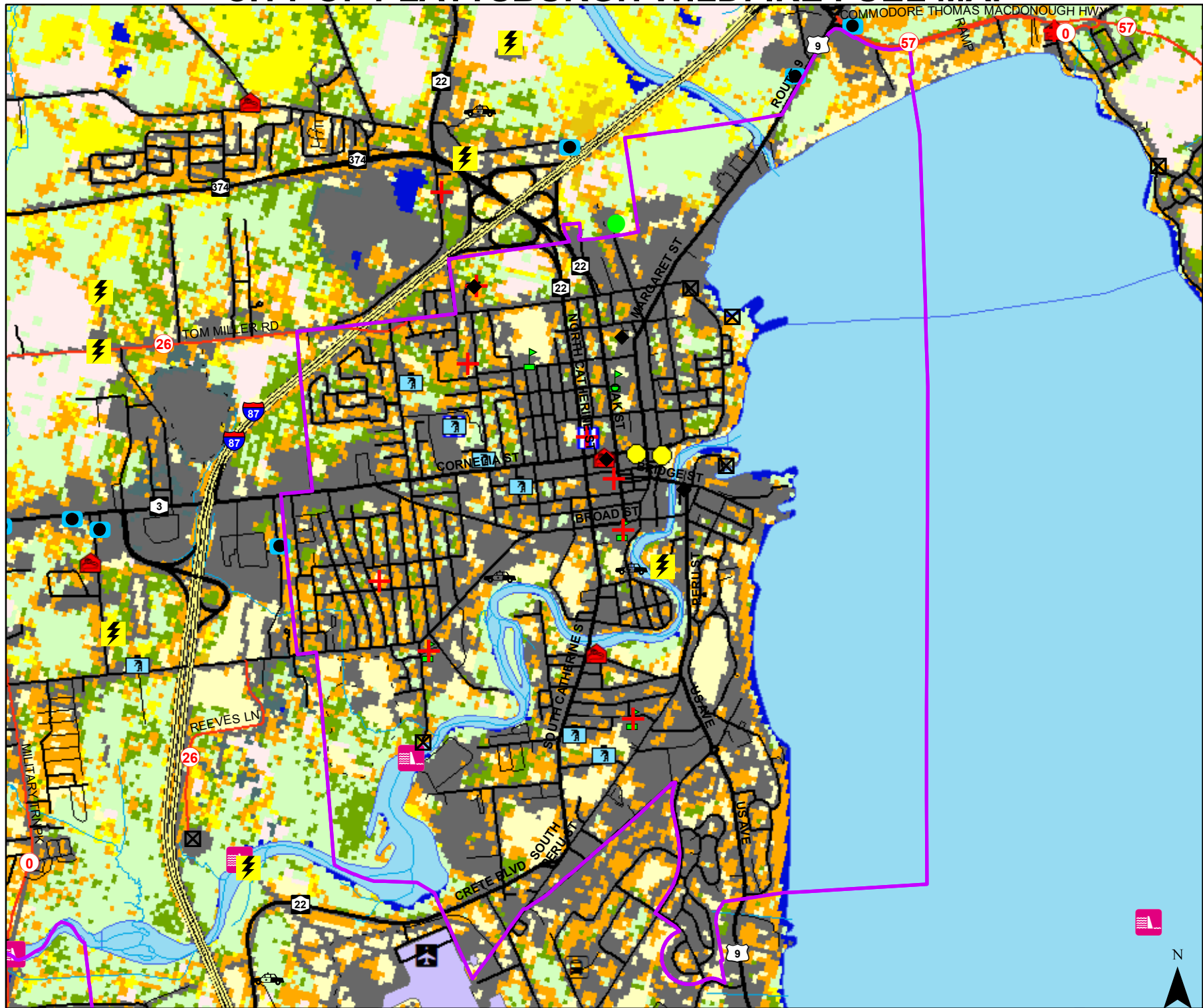
CITY OF PLATTSBURGH WILDFIRE FUEL MAP

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
















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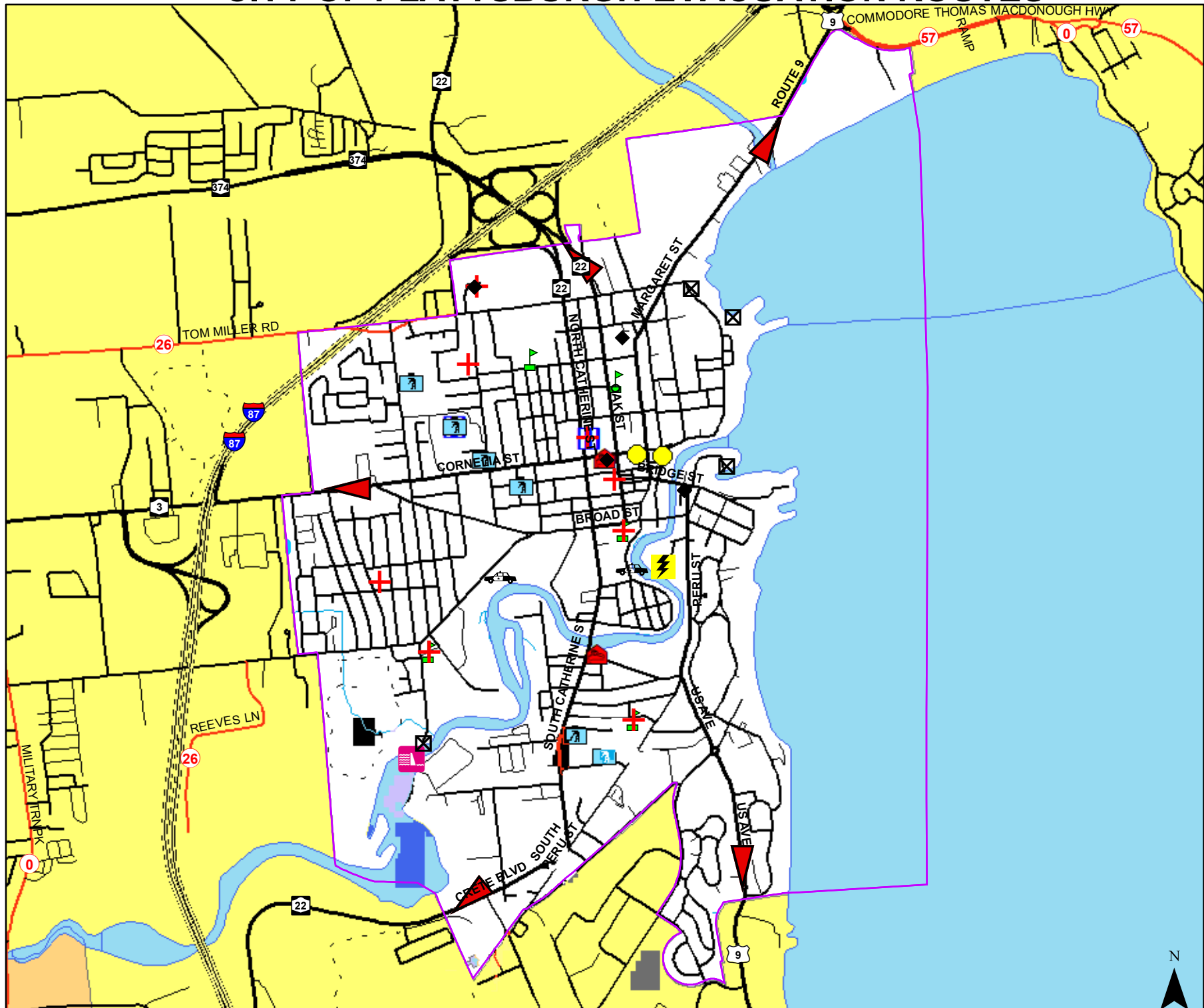
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CITY OF PLATTSBURGH EVACUATION ROUTES

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Town of Plattsburgh

Introduction:

The Town of Plattsburgh is in the eastern-central portion of the county. It surrounds the City of Plattsburgh which is a separate municipality. To the north the town is bordered by Beekmantown, to the east by Lake Champlain and the City of Plattsburgh, to the south by Schuyler Falls and Peru, and to the west by Saranac. The town was established in 1785, and later parts were removed to establish the other surrounding towns.

Within the Town of Plattsburgh is the Plattsburgh International Airport. The airport was created on the former Plattsburgh Air Force Base and as such has a considerable amount of space and potential for growth. The runway itself is large enough to be one of the East Coast Abort Landing sites for the Space Shuttle system. The two story airport supported over 150,000 flights in 2018. It is an important link to other airports, as well as providing direct flights to other states for individuals wishing to travel.

Cumberland Bay State Park is located in the Town of Plattsburgh. The park provides both day-use and camping opportunities and has a large natural sand beach. There are 134 campsites available for use, with showers (handicap accessible) and bathrooms available on site.

Clinton Community College is located in the southeastern portion and has a campus that overlooks Lake Champlain. CCC offers a combination of career and transfer degrees (in partnership with SUNY Plattsburgh) and typically has around 700 full-time and 900 part-time students enrolled at any given time.



TOWN OF PLATTSBURGH TABLE OF FACTS	
Land Area	68.2 sq. miles (43,648 acres)
Incorporated Villages	N/A
Hamlets	Cadyville, Champlain Park, Elsinor, Halseys Corners, Lawless Corners, Morrisonville, Pleasant Ridge Corners, Rocky Point, South Junction, South Plattsburgh, West Plattsburgh
2010 Population Census	11,870
Population Density	174 people/sq. mile
Governance	Supervisor and Town Board
Total Assessed Valuation	\$ 1,388,272,982
Elevation	276'
Largest Lake	Woodruff Pond
Rivers	Saranac River
Dams	6
Bridges	24
Interstate Highway	I-87
State Routes	3, 9, 22, 22B, 190, 374,
Land Classified: Agricultural	1,844.3 acres
Land Classified: Industrial	468.5 acres
Land Classified: Residential	6,021.7 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Schuyler Falls Fire Department, Cumberland Head Fire Department, Cadyville Fire Department, Morrisonville Ambulance Station
Schools	Morrisonville Elementary School
Railroads	Canadian Pacific Railroad
Interstate Bridge	11
Largest Employers	
Law Enforcement	New York State Police
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Wells, public and private
Emergency Shelters	Morrisonville School, Fire Departments, Town Hall
Critical Facilities	Cumberland Head Fire Department, Schuyler Falls Fire Department

Planning Process:

The planning process was facilitated remotely for the Town of Plattsburgh, as the projected timeline for meeting with this town ended up falling during the COVID-19 pandemic in Clinton County. The Town was contacted through email, and a video conference was set up on April 24th, 2020 with town officials.

Capability Assessment:

The Town of Plattsburgh has several planning mechanisms in place.

TOWN OF PLATTSBURGH PLANNING DOCUMENTS	
Document	Notes
Comprehensive Emergency Management Plan	Developed with Clinton County Emergency Services Director
Floodplain Regulations	
Zoning & Subdivision Regulations	Last revised in Nov 2012, used by Town Codes Enforcement & planning to guide development. Town has over 50 years of planning experience
Comprehensive Land Use Plan	Document was adopted in Dec 2010 and is routinely updated and is part of the 2019 Smart Growth Plan. Also, within this plan is the farmland preservation.
Stormwater Management Plan	Stormwater regulations are found in the zoning ordinance, and 3 rd parties are used to review site plans
Capital Improvement Plan	Plan covers improvements and expenditures, as well as budget forecasting
Economic Development Plan	Guidance document for orderly and sustainable economic development
Department of Health Water, ERP, VRP and CySec	These documents are used to evaluate the emergency response, the vulnerabilities and mitigations, as well as the cybersecurity of the town water system.
Waterfront Revitalization Plan	Adopted in 2016, this plan guides development along the Saranac and Lake Champlain waterfronts.
Smart Growth Plan	Adopted in 2019 it includes land use, as well as a vision to continue to develop the town.
Building & Fire Codes	Use NYS established codes

The Town of Plattsburgh is managed by a Town Board with a Town Supervisor. The board consists of 4 councilors. In the event of an emergency the Town Supervisor is the emergency manager.

There are two full-time planners employed by the town, they are responsible for implementing the Comprehensive Plan strategies, conducting site plans and subdivision reviews, along with grant management. There are two engineers employed by the town responsible for the oversight of water and wastewater treatment, there are also scientists involved with operations that are aware of hazards in the community. There is a code enforcement officer. The Town of Plattsburgh's planner utilizes GIS on a daily basis and has high capabilities in this area, there are also supports available from the county planning department. There are Planning and Finance/Accounting offices in the town that are responsible for fiscal management and the application and administration of large and complex grants.

The Town uses various funding streams for projects and programming. Capital Improvement Programming as Well as Community Development Block Grants (CDBG) have been used in the past for water and wastewater system improvements. Department of State funding is often used to support planning projects within the town, it has been used in the past for the development of various planning documents (i.e. Smart Growth, Comprehensive Plan, Waterfront Development Plan). There are also special taxes and minimum use fees associated with the water and wastewater districts. The Town of Plattsburgh has agreements with Beekmantown and Schuyler Falls regarding the provision of drinking water and sewage treatment lines. There is a base district tax associated with stormwater utility. Development Impact fees exist in the form of Recreation Fees, and Solar Development Fees. Funding has also been secured through the NYS Economic Development Authority for improvements located on the former county airport's lands (adjacent to the Clinton county fairgrounds)

Education and outreach in the Town of Plattsburgh is limited to fire safety, household preparedness. The schools are responsible for outreach to families in the time of crisis in the form of providing food to school children during the school district shutdown as a result of the New York State on Pause order responding to COVID-19. JCEO does outreach in the community for families in need. The Department of Health and the Office of the Aging do outreach in the Town of Plattsburgh as well. United Way is an important organization with the Town of Plattsburgh in times of crisis providing community supports.

A self-assessment of the capabilities of the Town of Plattsburgh's resource was performed. The town rated it's Planning and Regulatory capacity, Administrative and technical resources, and the financial capability as high. Their Education and Outreach capabilities they ranked as limited. They plan on increasing capacity for Education and Outreach through the use of interns from SUNY Plattsburgh. The interns will be used to assist with the town's website (development and maintenance) and will be assisting with general PR/social media duties to help increase the town's connection to its residents.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF PLATTSBURGH CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Station	Y	Y	Y	Cumberland Head, Cadyville and Schuyler Falls. Generator placed above 103’.
Critical Vehicle and Storage Equipment Facility	Y	N	N	
Utility and Power Generation Stations	?	?	?	Saranac Power, Primelink
Communications Center	?	?	?	
Schools	N	N	?	Cumberland Head Elementary School
Public and Private Utility Facilities	Y	N	Y	NYSEG, ENEL, Verizon, AT&T, Primelink
Drinking Water and Wastewater Treatment Plants	Y	Y	Y	Cadyville, Wastewater lift stations. Emergency generators placed above 103’

Located within the Town of Plattsburgh on the former Airforce base there is MHAB life skills campus, a transitional supportive housing facility for individuals in recovery. Also located on the former Airforce Base is a Tier 2 facility managed by Paramount Enterprises Inc., utilizing buildings that were part of the former Plattsburgh Airforce Base. The Airforce Base was closed in 1995 and this area has become a prime location for industrial and commercial development.

There are several locations around the Town of Plattsburgh that would be possible locations to place mobile homes and RVs in the event of an emergency. Many lots are former retail locations that have since been demolished and are now vacant parking lots. All locations offer power and water, though not all locations have sewer available. Throughout the town there are also multiple town owned parks that would be available for temporary housing. See the list below for the various temporary housing sites identified by the town:

TOWN OF PLATTSBURGH TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
North Country Shopping Center, Route 9	Private	N	Y	Y	Y
Plattsburgh RV Park, Route 9	Private	N	Y	Y	N
Former Clinton County Airport, Industrial Blvd.	Public	N	Y	Y	N
Clinton County Fairgrounds, Route 22B	Public	N	Y	Y	N
Former Ames Plaza, Route 3	Private	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Plattsburgh. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 2 repetitive loss properties in the Town of Plattsburgh.

The Town of Plattsburgh will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF PLATTSBURGH FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
2	38	41	\$536,098

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF PLATTSBURGH HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Dam Failure, Floods, High Winds/Tornadoes, Hurricanes, Ice Storms, Seiche Floods, Severe Winter Storms, Transportation (truck, and rail)	Extreme Cold, Extreme Heat, Hail Storms, Thunderstorms	
	Med		Drought, Earthquake, Landslides, Wildfires	
	Low			Avalanche

Potential Loss:

Potential loss was calculated for the Town of Plattsburgh. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture
- 200 Residential
- 300 Vacant Lands
- 400 Commercial
- 500 Recreation/ Entertainment
- 600 Community Services
- 700 Industrial
- 800 Public Service
- 900 Forest, Conservation Lands, and Parks

TOWN OF PLATTSBURGH POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	1,844.3	6	\$606,600	0.6	\$60,660
200	6,021.7	3,973	\$471,261,450	397.3	\$47,126,145
300	8,919.5	77	\$1,498,700	7.7	\$149,870
400	2,314.5	447	\$257,038,200	44.7	\$25,703,820
500	705.9	15	\$5,521,300	1.5	\$552,130
600	451.1	43	\$80,653,300	4.3	\$8,065,330
700	468.5	20	\$33,188,300	2.0	\$3,318,830
800	4,637.5	53	\$86,100,232	5.3	\$8,610,023
900	989.3	9	\$1,145,300	0.9	\$114,530
TOTAL	26,352.3	4,643	\$937,013,382	464.3	\$93,701,338

TOWN OF PLATTSBURGH STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	12	\$1,363,400
400	1	\$119,200
500	17	\$1,951,600
700	1	\$855,700
800	4	\$7,689,800
Total	35	\$11,979,700

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

The Town of Plattsburgh reviewed the county project list from the 2014 plan. They have included a status of efforts in the Town of Plattsburgh to advance on these county mitigation project. Projects listed in the 2014 plan specific to the Town of Plattsburgh were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by the Town of Plattsburgh as the plan was being updated in 2020.

TOWN OF PLATTSBURGH 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Prevent flooding of I-87 wastewater lift station Goal 1	Raise infrastructure and retaining wall	Town executive, county/local planning	H- \$100,000	ST	H	In Progress	Bid Awarded 2020	Lack of funding,
Reduce impact of flooding	Prevent flooding of Rt.9 & Beach wastewater lift station Goal 1	Raise infrastructure and retaining wall	Town executive, county/local planning	H- \$100,000 per lift station	ST	M	Will be completed in 2021		½ done
Reduce impact of flooding	Protect wellheads from river flooding Goal 1	Raise wellheads, Gougeville Springs Wells #1 & #2	Town executive, county/local planning	H- \$60,000	ST	M	Completed		
Reduce impact of drought	Additional water supply Goal 1	Develop additional groundwater resources	Town executive	H- \$150,000	I	H	In Progress	Withdrawl Permit Obtained	Will go to bid once DOH approval
Reduce impact of earthquake	Monitor impact to well casing and water quality Goal 1	Install inline turbidity meter and actuating valves	Town executive	H- \$50,000	ST	M	In Capital Plan 2021	Existing plant will be renovated	

Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce the impact of flooding on Algonquin Park Road Goal 1	Install 15 in. pipe and replace the existing 12 in. pipe	Town executive/ Highway Department	L- \$9,500	ST	H	Ongoing		
Reduce impact of flooding	Reduce roadside erosion and washouts Goal 1	Install seawall along the shore of Lake Champlain, Cumberland Head Rd.	Town executive/ Highway Department	H- \$57,000	ST	M	Ongoing		
Reduce impact of flooding	Reduce the impact of lake flooding Goal 1	Install 15 in. culvert to Cumberland Head Rd. site #1 and site #2	Town executive/ Highway Department	H- \$10,300, \$5,150 per culvert	ST	M	Ongoing		
Reduce impact of flooding	Reduce the impact of road washouts and erosion Goal 1	Install an extra 36 in. pipe on Kennedy Road	Town executive/ Highway Department	L- \$6,900	ST	M	Ongoing		
Reduce impact of flooding	Reduce the impact of road washouts and erosion	Increase pipe size on Bart Merrill Rd	Town executive/ Highway Department	L- \$6,900	ST	M	Ongoing		

TOWN OF PLATTSBURGH ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Route 9 North pump station		Upgrades preformed to Rte 9 Pump Station				Completed	Town Budget		2. Structural and Infrastructure Projects
Base Sewer Lining		Upgrades to sewer lining				Completed	Town Budget		2. Structural and Infrastructure Projects
Trade Road pump station		Upgrades to pump station on Trade Rd.				Completed	Town Budget		2. Structural and Infrastructure Projects
Bank restoration	Restore Bank on Cumberland Head Rd.	Rock to mitigate shoreline erosion				Completed	Town Budget		2. Structural and Infrastructure Projects
Zoning Codes Updated	Zoning update in 2012, land conservation areas established	9 miles of Saranac River and Lake Champlain Waterfront established as land conservation district.				2012	Town Budget		2. Structural and Infrastructure Projects

Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Vacuum out catch basins		Routine cleaning of catch basins to prevent flooding	Flood			Ongoing	Town Budget		2. Structural and Infrastructure Projects
Restore Roads/Replace Culverts	Reduce runoff and sediment by replacing and upgrading culverts	Replaced culverts damaged in previous flooding Wallace Hill Rd	Flooding			Completed	Town Budget		2. Structural and Infrastructure Projects
Tiling projects/Riparian buffers with Corn Farmers			Flood,			Ongoing	Town Budget		2. Structural and Infrastructure Projects
No till Ag practices		Establish no till farming on Cumberland Head	All			Ongoing	Town Budget		1. Local Plans and Regulations
Renovations of Cadyville Lift Station			All			Completed	Town Budget		2. Structural and Infrastructure Projects

TOWN OF PLATTSBURGH MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1.Zoning Ordinance Update	Update Town Zoning	Update Town of Plattsburgh Zoning Ordinances (last update was 2012). Hazard prone areas potentially eliminated from development zones	All Hazards	Planning Department	\$120,000	ST	Town of Plattsburgh	H	1. Local Plans and Regulations
2. Stormwater Facilities	Update the storm water system on the former Air Force Base	Former AFB storm water infrastructure will be repaired and updated	Flood	Town of Plattsburgh , Planning Department Highway Department	L	LT	LCBP grant	M (high damage but low demand)	2. Structural and Infrastructure Projects
3. Floodplain Management	Update floodplain management codes to coincide with FEMA map updates	Update floodplain management codes to reflect changes in floodplains	Flood		L	ST	Town Budget		1.Local Plans and Regulations
4. Purchase generators for key infrastructure	Purchase generators for key town buildings	Purchase generators for lift stations for emergency backup	All	Town Sewer Dept.	L	2021	FEMA		2.Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
5. Disaster Recovery Plan	Prepare a disaster recovery plan, doesn't currently exist at town level	Determine what to do in the event that the town offices are unable to be used, and individuals need to work remotely.	All	Town of Plattsburgh , Planning Department	L	ST	General Fund	H	1. Local Plans and Regulations
6. Data collection regarding Stormwater	Town of Plattsburgh is an MS4 community	Improve data collection in accordance with Town of Plattsburgh being an MS4 community	Flooding	DOH and Water Department	M	ST	General Fund	H	1. Local Plans and Regulations





















ArcGIS Maps for Town of Plattsburgh:

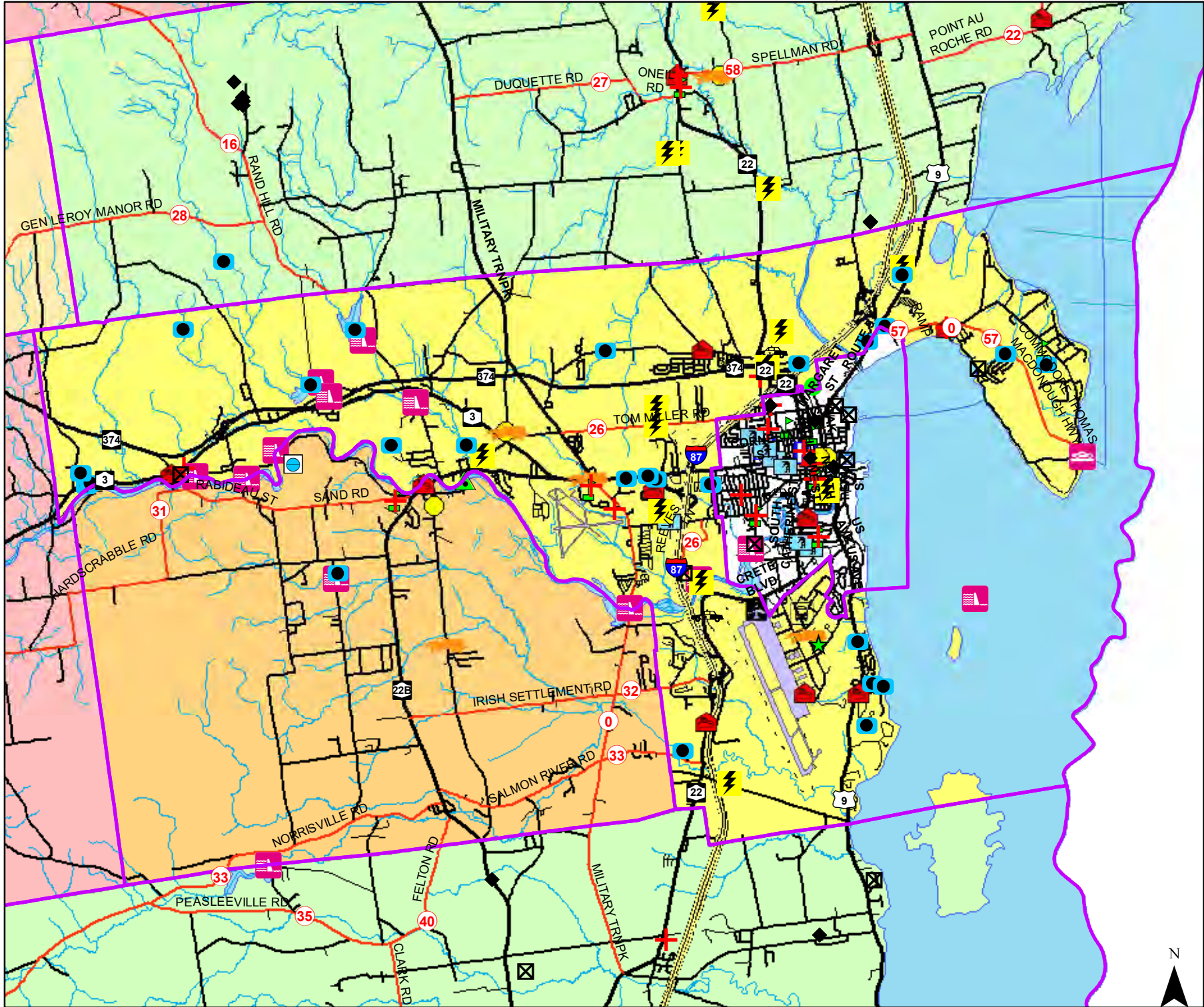
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PLATTSBURGH CRITICAL FACILITIES





















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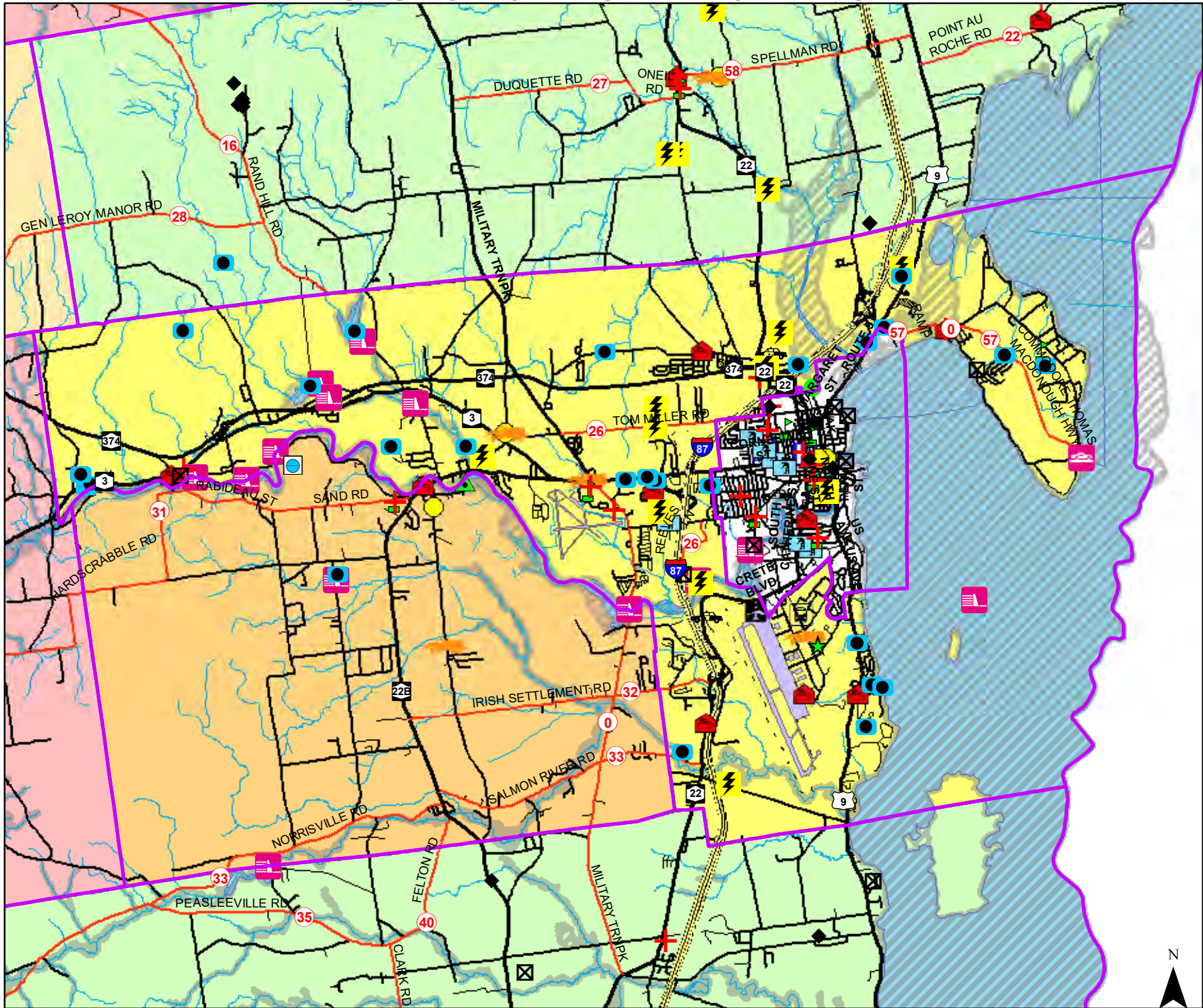
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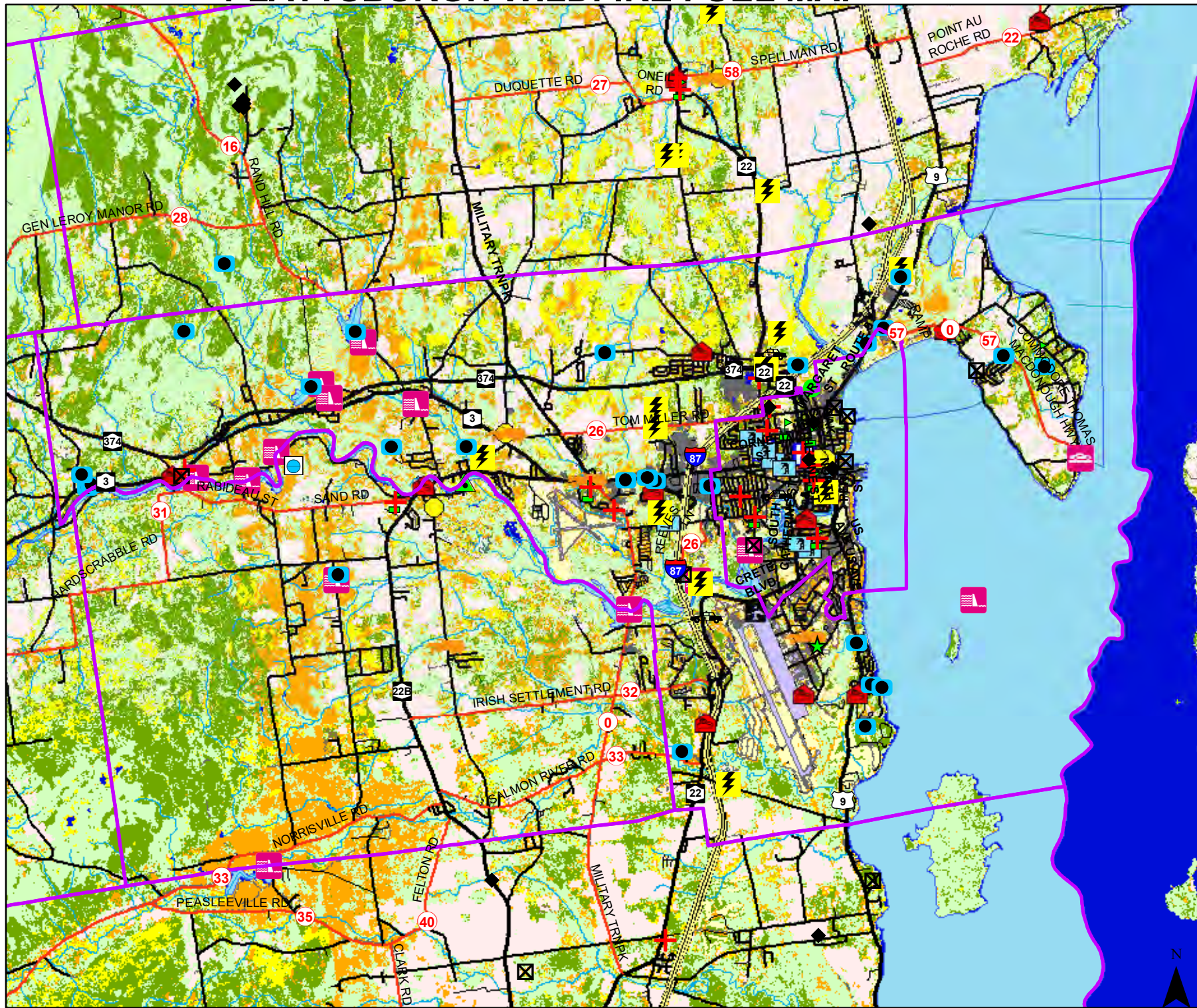
PLATTSBURGH WILDFIRE FUEL MAP

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







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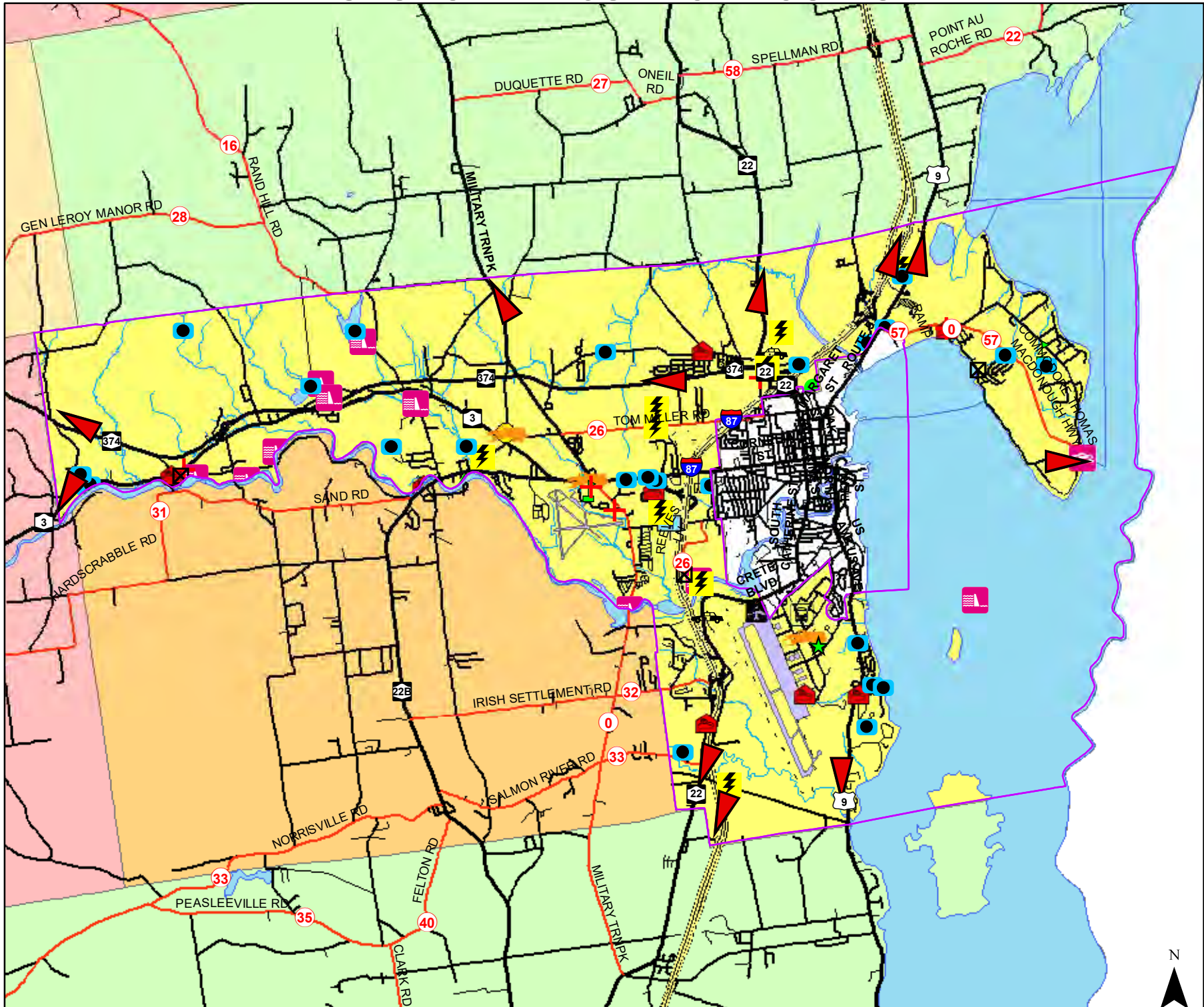
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PLATTSBURGH EVACUATION ROUTES

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-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls



Village of Rouses Point

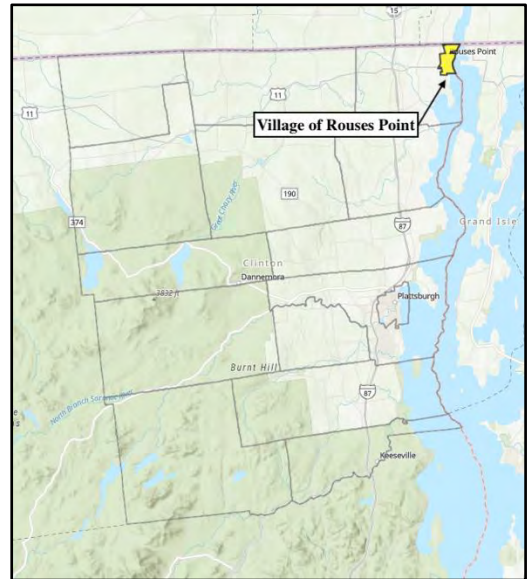
Introduction:

The Village of Rouses Point was first settled in the late 1700s and became incorporated as a village in 1877. It is located within the town of Champlain and is the most northeastern corner of the county, the northern boundary of the village is the US-Canadian border. The Village exists at the mouth of the Richelieu River, the outlet of Lake Champlain which flows north into Québec.

The Village is an important connection to both Canada and Vermont. A bridge which begins in Rouses Point connects US-11 to US-2 allowing vehicle travel between New York and Vermont, it is an important truck route to New England. US-11 also connects to Canadian Route-223 a road that runs alongside the Richelieu River, and is connected to various areas in southern Québec. Due to its location along the border, the Village of Rouses Point was an important stop in the Underground Railroad.

The Rouses Point Railroad station is a historic building that serves as the most northern US station along the state funded Adirondack service line (New York City to Montreal). The station also serves as a US Customs and Border Protection checkpoint for individuals travelling by rail. Tickets are not able to be purchased at this location, but it sees two trains per day and had a ridership of 1,454 in FY2019.

Alongside Route 11 there is a large Civic Center building managed by the Village of Rouses Point. The large building is able to host council meetings and small conventions. There is an ice rink that is suitable for hockey games and recreational ice skating. The Civic Center is also a potential shelter site in the event of a large disaster in the Village.



VILLAGE OF ROUSES POINT TABLE OF FACTS	
Land Area	2.5 sq. miles (1600 acres)
Incorporated Villages	N/A
Hamlets	N/A
2010 Population Census	2,209
Population Density	883.6 people/sq. mile
Governance	Mayor and Village Board
Total Assessed Valuation	\$ 146,447,455
Highest Elevation	112'
Largest Lake	Located alongside Lake Champlain
Rivers	Located at mouth of Richelieu River
Dams	0
Bridges	1
Interstate Highway	0
State Routes	2, 9B, 11
Land Classified: Agricultural	30.4 acres
Land Classified: Industrial	51.1 acres
Land Classified: Residential	54.3 acres
Hospital/Medical Facility	None
Fire & Rescue	Rouses Point Fire Department
Schools	Rouses Point Elementary
Railroads	D&H railroad (passenger and freight)
Interstate Bridge	Bridge to VT (Route 2)
Largest Employers	
Law Enforcement	Sheriff Substation (Village Offices)
Correctional Facility	N/A
Power Utility Provider	Rouses Point Electric Department
Water Supply Sources	Lake Champlain
Emergency Shelters	Elementary School, Civic Center
Critical Facilities	Village Offices, Fire Department, Civic Center, Elementary School

Planning Process:

The planning process was facilitated remotely for the Village of Rouses Point, as the projected timeline for meeting with this town fell during the COVID-19 pandemic in Clinton County. The Village Clerk/ Administrator was contacted through email, and a video conference was set up on May 7th, 2020 to facilitate the collection of information for the village.

Capability Assessment:

The Village of Rouses Point has several planning mechanisms in place.

VILLAGE OF ROUSES POINT PLANNING DOCUMENTS	
Document	Notes
Zoning Regulations	Updated in 2012, includes subdivision regulations
Comprehensive Land Use Plan	
Stormwater Management Plan	Used by public works department
Building & Fire Code	Use NYS established codes
Emergency Disaster Plan	Due for an update

The village has a volunteer planning/zoning board which has regularly scheduled meetings, but does not have a set work schedule. There are no engineers employed by the village, they are hired as needed. The Mayor acts as the emergency manager in times of disaster. There is a floodplain manager/code enforcement officer that works part-time. The DEC provides scientific support for community hazards, and the Clinton County Planning department is relied on for GIS support. Grant writers and fiscal staff are hired as needed to administer complex grants.

Rouses Point has used various funding sources in the past, grants were used to fund sewer plant construction, and will be used to construct a new water treatment plant. Community Development Block Grants (CDBG) have been used for Downtown Revitalization efforts in the village along their main street. The village collects electric utility fees. The village also shares highway and sheriff services.

The Village has Education and Outreach capabilities mostly focused around the Elementary School. The school is providing meals to school children during the COVID-19 shutdown, and meals on wheels (out of Plattsburgh) is providing nutrition to senior citizens.

A self-assessment of capabilities was completed, and the villages was ranked in four areas. The Village's planning and regulatory capability was ranked as moderate, to improve this Rouses Point is looking to update a 5-year economic development plan. The administrative and technical, and financial capabilities were ranked as high. Education and Outreach was ranked as limited, the Fire Department provides some educational programming to the local elementary school, and there is a village historian that does outreach. One of the main points that speaks to the financial capacity

of the village was that they did not have to lay off or furlough any employees during the COVID-19 pandemic in the Spring of 2020.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

VILLAGE OF ROUSES POINT CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Police Station	Y	Y	Y	Located in the Village Offices. Retaining wall placed behind Village office, only flooded during Spring 2011.
Fire Station	N	N	Y	
Critical Vehicle and Equipment Storage Facility	Offices- Y Fire- N	Offices- Y Fire- N	Y	Village Offices and Fire Station used for this purpose. See above for mitigation.
Utility and Power Generating Stations	N	N	Y	
Communications Center	Y	Y	Y	Village Offices used in times of emergency. See top row for mitigation action.
Schools	N	N	Y	Rouses Point Elementary School
Sewage Treatment Plant	N	N	Y	
Drinking Water Treatment Plant	Y	Y	Y	Water plant is going to be moved out of floodplain in 3-5 years.

The village does not have any homeless shelters, nor do they have any drug/alcohol treatment programs. There is a senior housing facility, it is not located within the floodplain and it does have a generator. No tier 2 facilities exist within the village limits. The Civic Center is considered a critical facility as it is a potential emergency shelter for the village, the building is not located within the floodplain, but some of the grounds are, there are projects currently to elevate those portions of the grounds that would be vulnerable to high lake levels.

There are five locations in the Village suited for temporary housing:

VILLAGE OF ROUSES POINT TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Civic Center, 39 Lake Street	Public	N	Y	Y	Y
PowerTex (parking lot and vacant field), Bridge Road	Private	N	Y	Y	Y
Vacant Property, Route 11	Public	N	Y	Y	N
Former Pfizer Property	Private	N	N	N	N
Rouses Point Elementary, Maple Street	Public	N	Y	Y	Y

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Village of Rouses Point. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are no repetitive loss properties in the Village of Rouses Point.

Rouses Point will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

VILLAGE OF ROUSES POINT FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
0	1	1	\$19,410

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

VILLAGE OF ROUSES POINT HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High	Extreme Cold, Extreme Heat, Seiche Floods, Transportation (truck)		
	Med	Severe Winter Storms	High Winds/ Tornadoes, Ice Storms	Earthquake
	Low	Flood, Transportation (Rail)	Drought, Hurricane	Hail Storms, Thunderstorms

Seiche floods were of particular concern as there is a south wind that results in turbidity that causes problems with the drinking water intakes in Lake Champlain. Transportation hazards are also of great concern, Route 11 is a major connection to both Vermont/New England and Canada, large trucks with unknown contents are frequently driving through the town’s downtown district which is a narrow road. There is also a rail line running through town that carries passenger and freight cars.

Potential Loss:

Potential loss was calculated for the Town of Dannemora. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture
- 200 Residential
- 300 Vacant Lands
- 400 Commercial
- 500 Recreation/ Entertainment
- 600 Community Services
- 700 Industrial
- 800 Public Service
- 900 Forest, Conservation Lands, and Parks

VILLAGE OF ROUSES POINT POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	30.4	0	\$0	0	\$0
200	54.3	731	\$80,141,400	73.1	\$8,014,140
300	395.7	12	\$183,100	1.2	\$18,310
400	78.0	80	\$17,732,500	8	\$1,773,250
500	25.7	7	\$2,167,500	0.7	\$216,750
600	25.1	16	\$4,642,300	1.6	\$464,230
700	51.1	1	\$495,000	0.1	\$49,500
800	59.1	11	\$8,864,955	1.1	\$886,496
900	2.7	1	\$440,800	0.1	\$44,080
TOTAL	722.0	859	\$114,667,555	85.9	\$11,466,756

TOWN OF ALTONA STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	2	\$27,700
Total	2	\$27,700

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Rouses Point reviewed the county project list from the 2014 plan. They have included a status of efforts in Dannemora to advance on these county mitigation project. Projects listed in the 2014 plan specific to Dannemora were reviewed to determine if any progress has been made on

implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Dannemora as the plan was being updated in 2020.

VILLAGE OF ROUSES POINT 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Implement debris removal as soon as possible Goal 1	Develop plans for debris management in the spring and following a flooding event	L-current funding	Village executive, county/ local DPW	2013 on going	H	Ongoing	Ongoing	This is done on a regular basis in the village

VILLAGE OF ROUSES POINT ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Manitou Purchased		Multi-purpose, skid steer, lift. Replaced 2 pieces of equipment.	All Hazards	Village		Complete	Village Budget		2. Structural and Infrastructure Projects
Generator upkeep		Regular maintenance and upkeep on all generators.	All Hazards	Village		Ongoing	Village Budget		2. Structural and Infrastructure Projects
Floodproof roads		Montgomery Street, rock placed along shoreline	Flood	Village		Complete	Village Budget		2. Structural and Infrastructure Projects
Substation updates		Maintained and replaced on a cycle	All Hazards	Village		Ongoing	Village Budget		2. Structural and Infrastructure Projects
Transformer Updates		Maintained and replaced on a cycle	All Hazards	Village		Ongoing	Village Budget		2. Structural and Infrastructure Projects

Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Community Development Strategy and Implementation Plan (Downtown Revitalization incorporated into code)		Perform plan updates.	Multi	Village	L	Complete	Village Budget		1. Local Plans and Regulations

VILLAGE OF ROUSES POINT MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Upgrade Wastewater Treatment Plan	Management of excessive storm water in wastewater system to reduce effluent release	Address the issue of excess stormwater in wastewater treatment plant	Flooding	Village, Public Works and Wastewater	\$30,000	ST	EPG grant	M	2. Structural and Infrastructure Projects
2. Water Treatment Plan Relocation	Wastewater treatment plant is currently located within Lake Champlain floodplain	Relocate waterplant outside of the floodplain	Flooding	Village, Public Works and Water and Electric , Barton & Loguidce	H	2021-2015	TBD	H	2. Structural and Infrastructure Projects
3. Road Infrastructure upgrades	Include all village roads in service area of village utilities	Increase road infrastructure to expand 2 roads (water, sewer, electric)	All hazards	Village, Highway Department	H	LT	NBRC	M	2. Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
4. Increase flood resilience of Civic Center	Civic Center is village's emergency shelter and needs upgrades to increase flood resilience	Increasing elevation on the parking area of the Civic Center, and placing vegetation for stormwater runoff.	Flooding, Stormwater	Village	H	ST	Historic Preservation	M	2. Structural and Infrastructure Projects 3. Natural Systems Protection
5. Economic Development Plan	Waterfront revitalization and economic promotion through plan updates	Downtown and waterfront revitalization update	All Hazards	Village, Zoning Board	H	LT	Village Funds	M	1. Local Plans and Regulations
6. Emergency Disaster Plan	Update emergency disaster plan to ensure proper management of hazard events	Update the Emergency Disaster Plan to keep document current	All Hazards	Village Clerk/ Administrator	L	ST	Village Funds	M	1. Local Plans and Regulations

ArcGIS Maps for Village of Rouses Point:

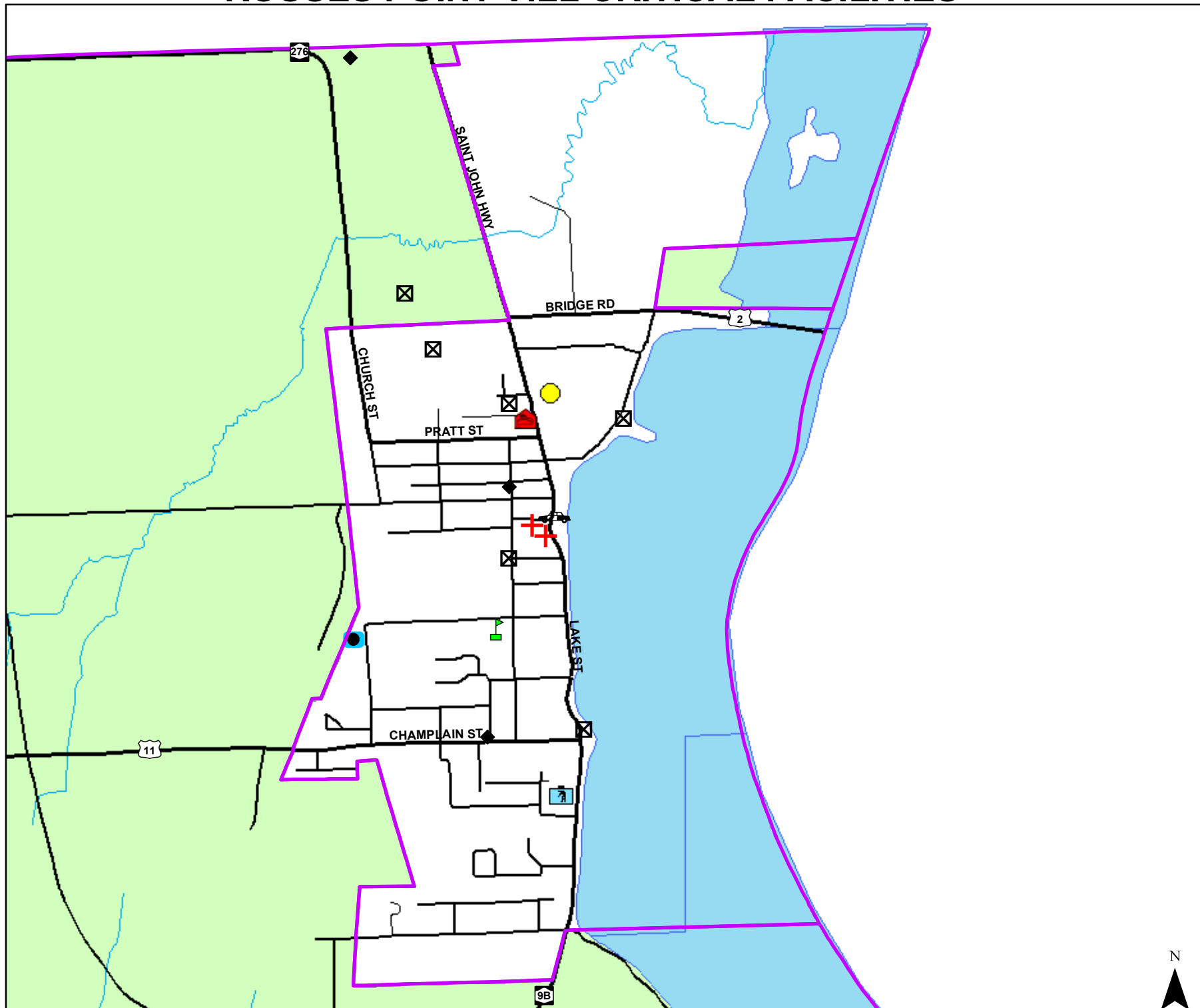
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

ROUSES POINT VILL CRITICAL FACILITIES





















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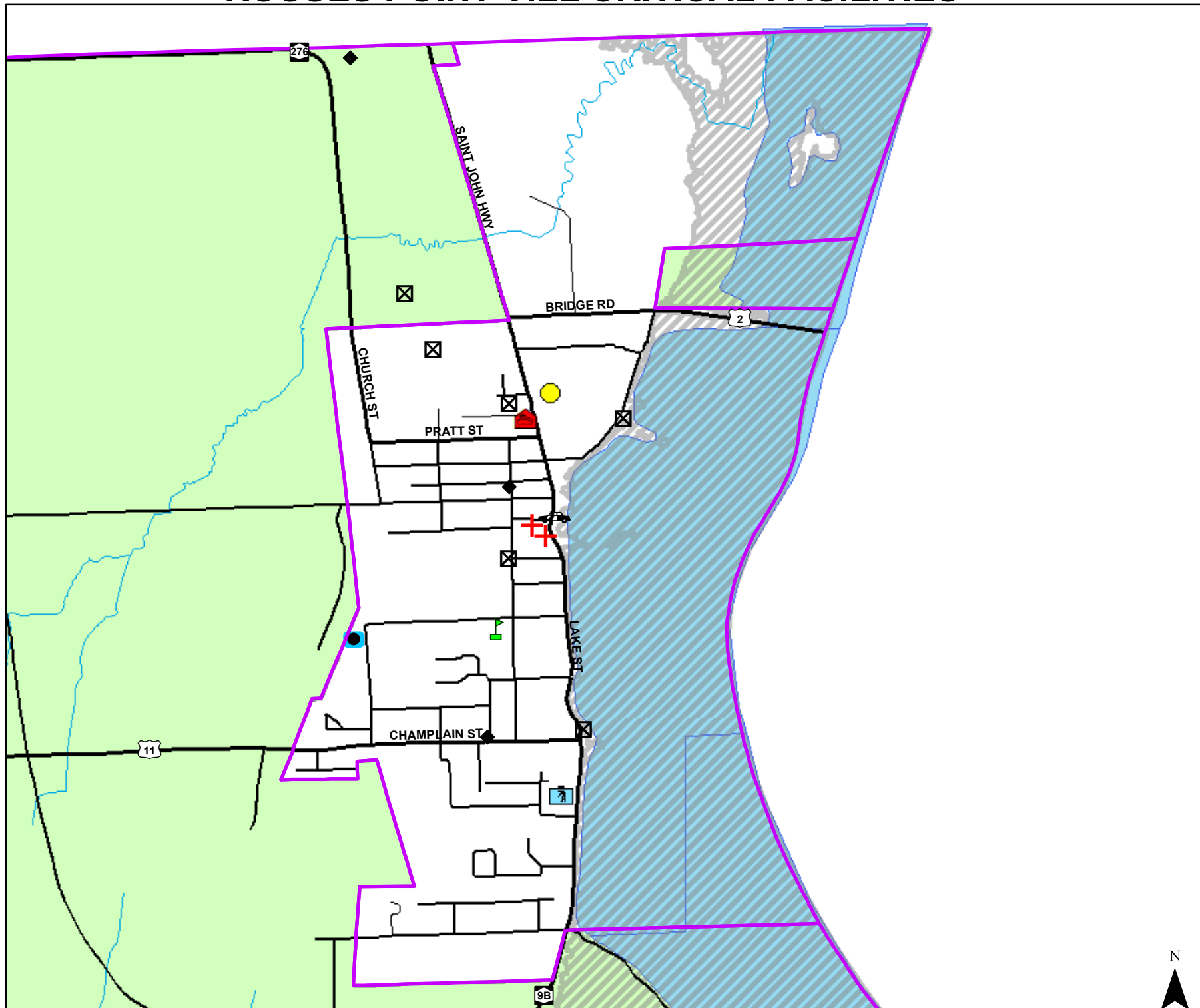
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- Flood_Control_Structure
- Water_Supply
- Communications
- Sewage_Water_TX
- EOC_Locations
- Red_Cross_Shelters
- Schools
- Electric_Substation
- Dams2019
- Police_stations
- Nursing_Homes
- Airport_Terminal
- Bus_Station
- Ferry_Dock
- Highway_Garages
- Town_Municipal_Halls
- Health_Centers



ROUSES POINT VILL CRITICAL FACILITIES

LEGEND

-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
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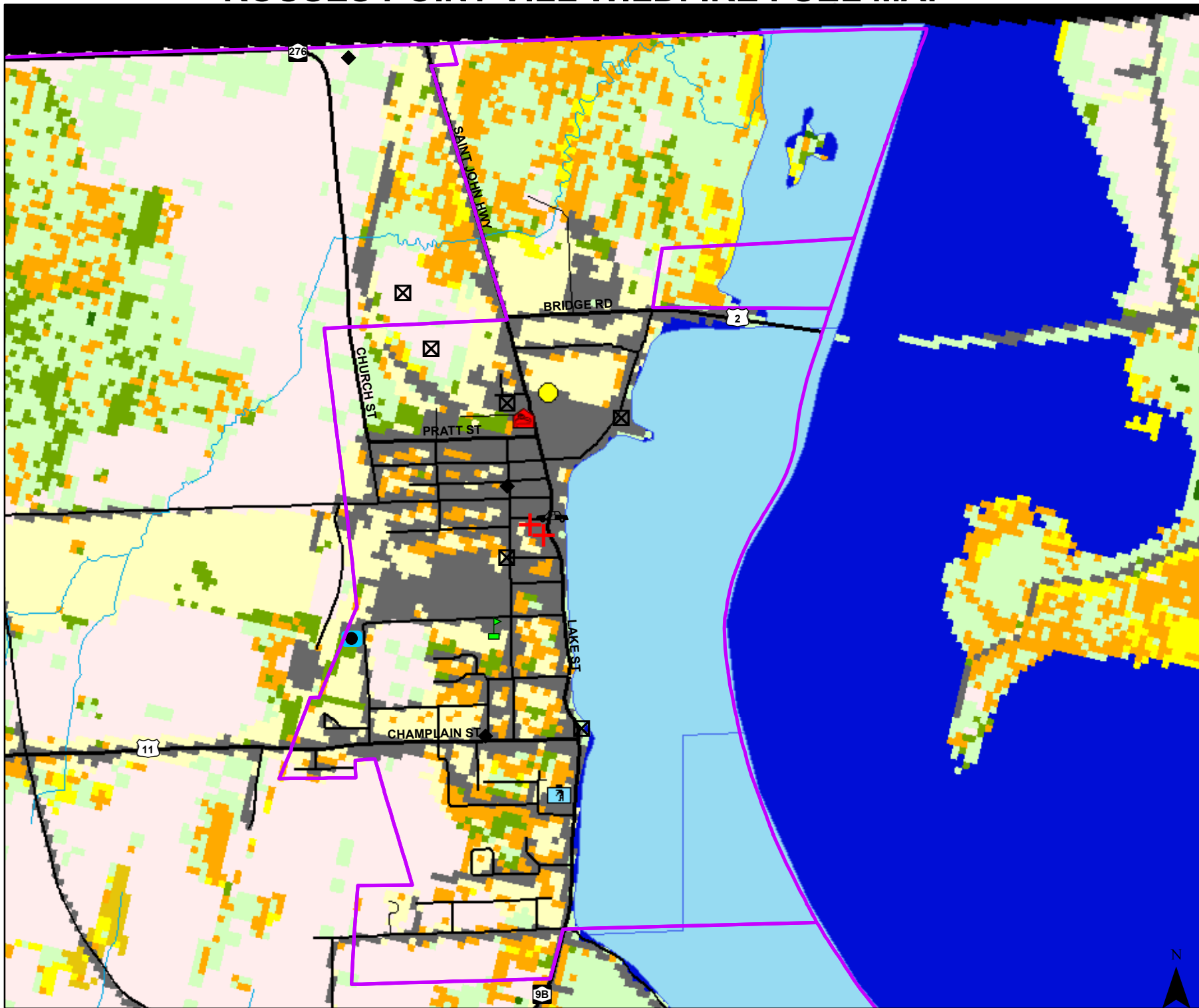
ROUSES POINT VILL WILDFIRE FUEL MAP

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







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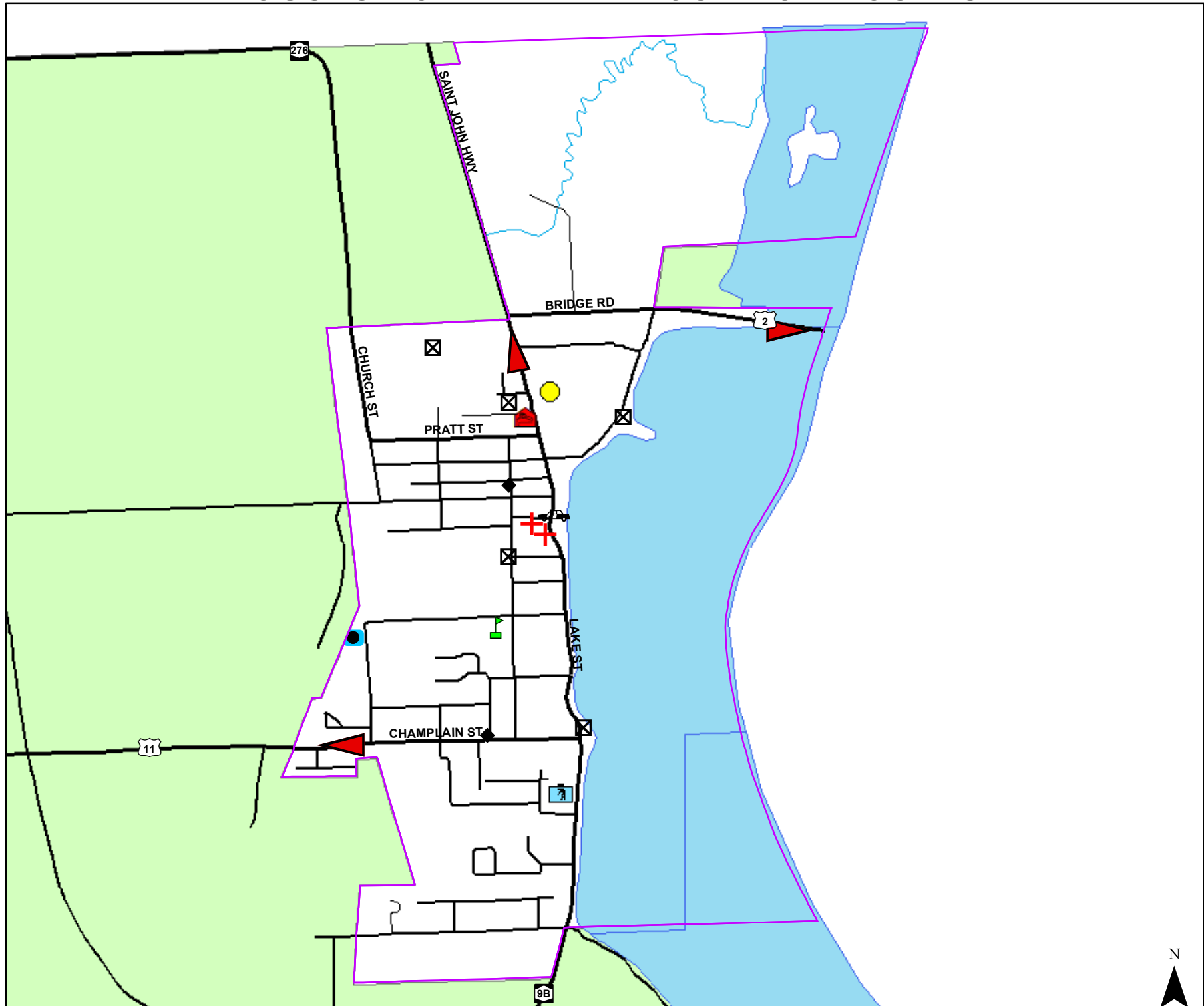
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-  Agriculture
-  Water
-  Barren
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers
-  Fire_Stations
-  Airstrip



ROUSES POINT VILL EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
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-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls



Town of Saranac

Introduction:

The Town of Saranac was established in 1824 and is located on the western border of Clinton County. The town is bordered to the north by the town of Dannemora, to the east by the towns of Plattsburgh and Schuyler Falls, and to the south by the towns of Black Brook and Peru. The Town of Saranac is located within the Adirondack Park, and the Saranac River runs through the town. The river is important in the history of the town as it supported local industrial development. Now the river is primarily used for recreation and is particularly popular for canoeing, kayaking, and fishing.



Burnt Hill State Forest is located partially within the town of Saranac. It is 1,575 acres and was created for wildlife management, reforestation, timber production, recreations and watershed protection. There is primitive camping is allowed within the park as well as hunting, trapping, hiking, skiing, and snowshoeing.

Fishing is a popular throughout the many rivers and brooks in the Town of Saranac. True Brook is ideal for trout fishing and has many public access points and parking areas available. High Falls a waterfall located on the Saranac River is downstream from a power dam located on the river, and is both a popular fishing and sightseeing location.

Considered a gateway to the Adirondacks there are many popular trails located within the town, and a variety of recreational opportunities.

TOWN OF SARANAC TABLE OF FACTS	
Land Area	115.9 sq. miles (74,176 acres)
Incorporated Villages	Dannemora (partially)
Hamlets	Clayburg, High Bank, Moffitsville, Picketts Corners, Redford, Russia, Saranac, Standish
2010 Population Census	4,007
Population Density	34.6 people/ sq.mile
Governance	Supervisor and Town Council
Total Assessed Valuation	\$ 239,894,901
Highest Elevation	1,257'
Largest Lake	N/A
Rivers	Saranac River
Dams	3
Bridges	18
Interstate Highway	N/A
State Routes	3, 374
Land Classified: Agricultural	729.7 acres
Land Classified: Industrial	N/A
Land Classified: Residential	25,715.4 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Saranac Volunteer Fire Department, Redford Fire Department
Schools	Saranac Elementary School, Saranac Central School
Railroads	N/A
Interstate Bridge	N/A
Largest Employers	Saranac Central School
Law Enforcement	N/A
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	3 water districts: Redford (2 drilled wells), Saranac (underground water source), Standish (1 well)
Emergency Shelters	Town Hall, Fire Departments, Saranac School
Critical Facilities	Town Hall, Fire Departments, Saranac School

Planning Process:

A meeting was held on December 12th, 2019 with town officials and staff to obtain the information needed for the plan update.

Capability Assessment:

The Town of Saranac has several planning mechanisms in place.

TOWN OF SARANAC PLANNING DOCUMENTS	
Document	Notes
Comprehensive Emergency Management Plan	
Floodplain Regulations	
Comprehensive Land Use Plan	
Open Space Management Plan	
Natural Resource Protection Plan	
Historic Preservation Plan	
Farmland Preservation Plan	County wide document
Building & Fire Code	Use NYS established Codes

The town is managed by a Town Supervisor that also functions as the emergency manager. There is a floodplain/code enforcement officer in the town. Planners and engineers are hired as needed, the Adirondack Park Agency (APA) also provides planning supports. Land surveyors are hired as needed by the town. The DEC and APA provide scientific supports. GIS skills are provided by the Clinton County Planning Department. Grant writers and fiscal staff are hired as needed to administer grants. The town also hires attorneys when needed.

The Town of Saranac uses several funding sources for projects and programming. Community Development Block Grants have been used in the past to rehabilitate low income housing. There is a special tax collected associated with lighting. Water fees are collected and are utilized to maintain the system. There are shared services with Clinton and Franklin County.

Saranac provide ongoing public education in partnership with the Clinton County Health Department. The Fire Department provides fire protection and awareness education in October. There are local citizens groups that provide support for education and outreach, such as Friends of the North Country with housing rehabilitation, and JCEO which focus on low income household support (clothes, food, Christmas, health).

The town completed a self-assessment of their capabilities. Planning and Regulatory was ranked as limited. Administrative and Technical was ranked as moderate. Financial capabilities were ranked as high. Education and Outreach was ranked as limited.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF SARANAC CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Stations	#1- Y #2-N	N	Y	Fire station #1 while located in the floodplain is 25' above the river and has no history of flooding.
Critical Vehicle and Equipment Storage	N	N	Y	Town Highway Garage
Emergency Operations Center	N	N	N	
Utility and Power Generating Stations	Y	Y	?	NYSEG station flooded in early 1990s. Mitigations responsibility of NYSEG.

The primary communications center is the Fire Department, the Town Hall is secondary. There are no medical facilities, but there is senior housing located within the town. There is a High School located at 60 Picketts Corners Road. There are substations and a natural gas line within the town. The town provides water treatment. There are no drug and alcohol treatment programs nor are there any homeless shelters located within the town. There is a combination of spring fed water and wells, none of them are located within the floodplain. There are no Tier 2 facilities located within the town boundaries.

There are several locations within the town that would be suitable for the placement of RVs or mobile homes for the temporary housing of residents.

TOWN OF SARANAC TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS						
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?	
Saranac Town Hall, 3662 Rte. 3	Public	N	Y	N	Y	
Picketts Corners Park, Bowen Rd.	Public	Y (some)	Y	Y	N	
Industrial Park	Public	N	Y	N	N	
Saranac Fire Station, Rte. 3	Public	N	Y	Y	N	
Redford Fire Department, Water St.	Public	N	Y	Y	N	
Town Green	Public	N	Y	N	N	

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Saranac. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There are 3 repetitive loss properties in the Town of Saranac.

Saranac will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF SARANAC FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
3	9	8	\$45,482

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF SARANAC HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High		Extreme Cold, Severe Winter Storms	Floods, High Winds and Tornadoes
	Med		Ice Storms	Earthquake
	Low			Avalanche, Dam Failure, Drought, Extreme Heat, Hail Storms, Hurricanes, Landslides, Thunderstorms, Transportation, Wildfires

Potential Loss:

Potential loss was calculated for the Town of Saranac. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then totaled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 8 codes on the Clinton County Real Property Tax Services website:

- 100 Agriculture
- 200 Residential
- 300 Vacant Lands
- 400 Commercial
- 500 Recreation/ Entertainment
- 600 Community Services
- 800 Public Service
- 900 Forest, Conservation
Lands, and Parks

TOWN OF SARANAC POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	729.7	7	\$245,500	0.7	\$24,550
200	25,715.4	1,531	\$129,852,900	153.1	\$12,985,290
300	13,958.0	71	\$527,700	7.1	\$52,770
400	330.8	38	\$4,306,400	3.8	\$430,640
500	99,965.7	1,709	\$378,600	170.9	\$37,860
600	203.5	18	\$14,423,300	1.8	\$1,442,330
800	516.7	6	\$26,132,900	0.6	\$2,613,290
900	28,754.3	4	\$235,200	0.4	\$23,520
TOTAL	170,174.1	3,384	\$176,102,500	338.4	\$17,610,250

TOWN OF ALTONA STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
100	1	\$10,200
200	9	\$441,200
300	1	\$10,000
400	1	\$34,900
800	1	\$21,961,000
Total	13	\$22,457,300

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Saranac reviewed the county project list from the 2014 plan. They have included a status of efforts in Saranac to advance on these county mitigation project. Projects listed in the 2014 plan specific to Saranac were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Saranac as the plan was being updated in 2020.

TOWN OF SARANAC 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Prevent flooding of Bowen Road Goal 1	Elevate ¼ mile of road	Town executive, highway	H-\$100,000	ST	M	Incomplete		Lack of funding
Reduce impact of flooding	Prevent flooding of square of Dashnaw Road Goal 1	Replace bridge, two larger culverts installed in 2001/2002	Town executive, highway	H-\$100,000	I	M	In Progress	DOT replacement project, will be replaced in 2020	

TOWN OF SARANAC ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
True Brook Road		Ditching and installing sediment trap on True Brook Rd	Severe Winter Storm, Ice Storm, Flooding, Thunderstorm	Town Highway Dept.	L	Complete	Town Budget		2. Structural and Infrastructure Projects
Improve road infrastructure		Paved 6.07 miles of road in Town of Saranac		Town Highway Dept.	L	Complete	Town Budget		2. Structural and Infrastructure Projects
Reduce potential for debris in event of storm		Trees and brush regularly trimmed/cut	Severe Winter Storm, Thunderstorm, High Winds	Town Highway Dept.	L	Ongoing	Town Budget		2. Structural and Infrastructure Projects

TOWN OF SARANAC MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Improve Road Infrastructure	Replace and upgrade bridges and culverts	Replace culverts/ bridges on the following roads: True Brook Rd, Standish Rd.	Flooding	Town Highway Dept.	H	2021-2025	NY Bridge		2. Structural and Infrastructure Projects
2. Improve Road Infrastructure	Elevate portions of road in danger of flooding	Raise portion of roadway on True Brook Road.	Flooding	Town Highway Dept.	H	LT	?		2. Structural and Infrastructure Projects
3. Improve Road Infrastructure	Study to determine best method to prevent riverbank erosion along route 3.	Prevent bank erosion along Route 3.	Flooding	Town Highway Dept.	H	LT	SWCD		2. Structural and Infrastructure Projects
4. Improve Road Infrastructure	Replace and upgrade bridges	Replace bridge on Sulfur Road.	Flooding	Town Highway Dept.	H	LT	NY Bridge		2. Structural and Infrastructure Projects
5. Purchase generators for key buildings in town	Increase Disaster Readiness of Critical Facilities	Purchase generators for: Town Hall, NYSEG, Senior Center	All Hazards		L	LT	Town Budget		2. Structural and Infrastructure Projects

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
6. Conduct study on how best to upgrade salt shed	Improve salt shed to reduce leaching and increase winter storm response capacity	Build a salt shed to house sand/salt mixture to be used for treating roads.	Severe Winter Storm, Ice Storm	Town Highway Dept.	H	LT	NYSDOS		2. Structural and Infrastructure Projects





















ArcGIS Maps for Town of Saranac:

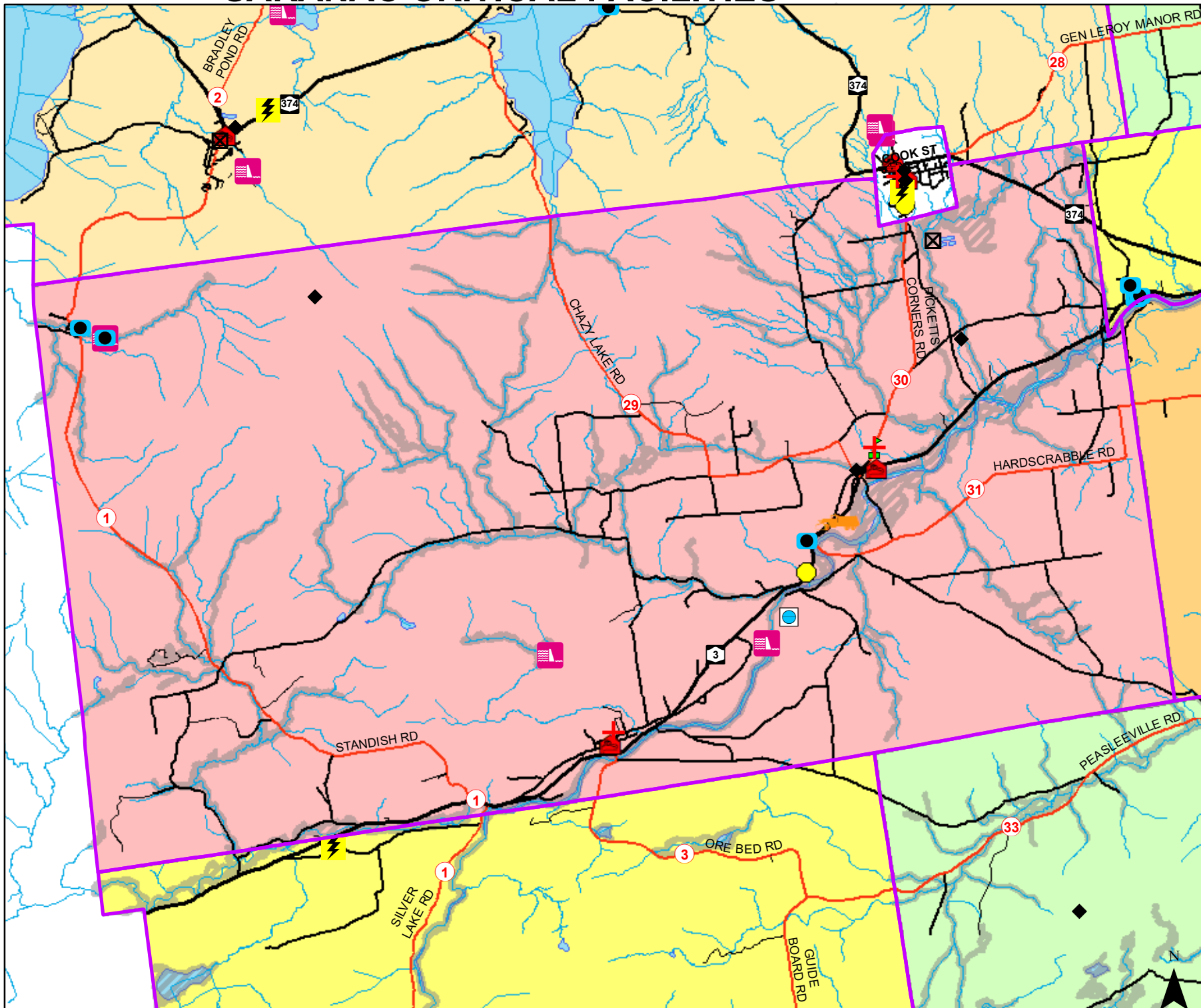
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

SARANAC CRITICAL FACILITIES

LEGEND

-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
-  EOC_Locations
-  Red_Cross_Shelters
-  Schools
-  Electric_Substation
-  Dams2019
-  Police_stations
-  Nursing_Homes
-  Airport_Terminal
-  Bus_Station
-  Ferry_Dock
-  Highway_Garages
-  Town_Municipal_Halls
-  Health_Centers









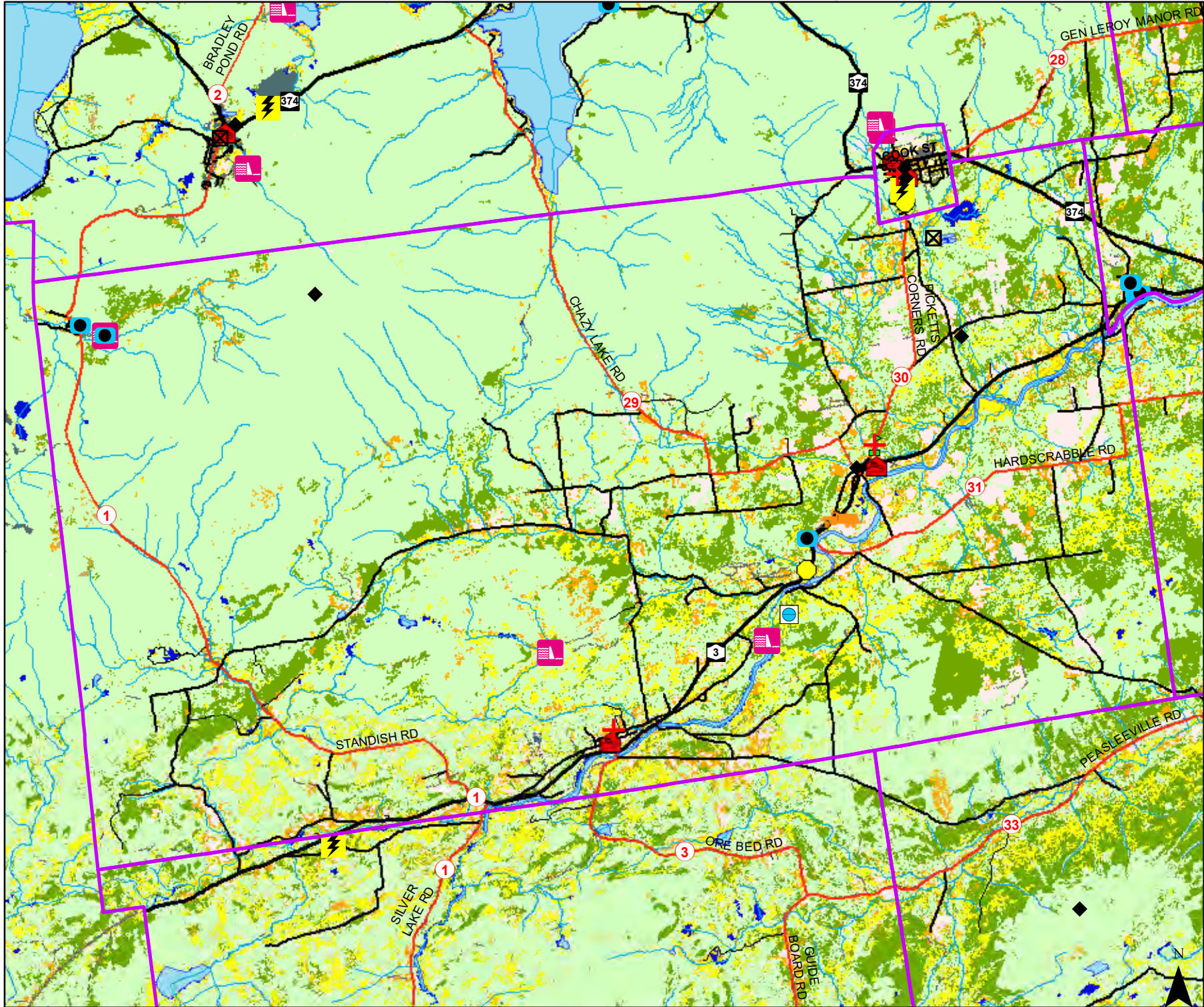
SARANAC WILDFIRE FUEL MAP

LEGEND

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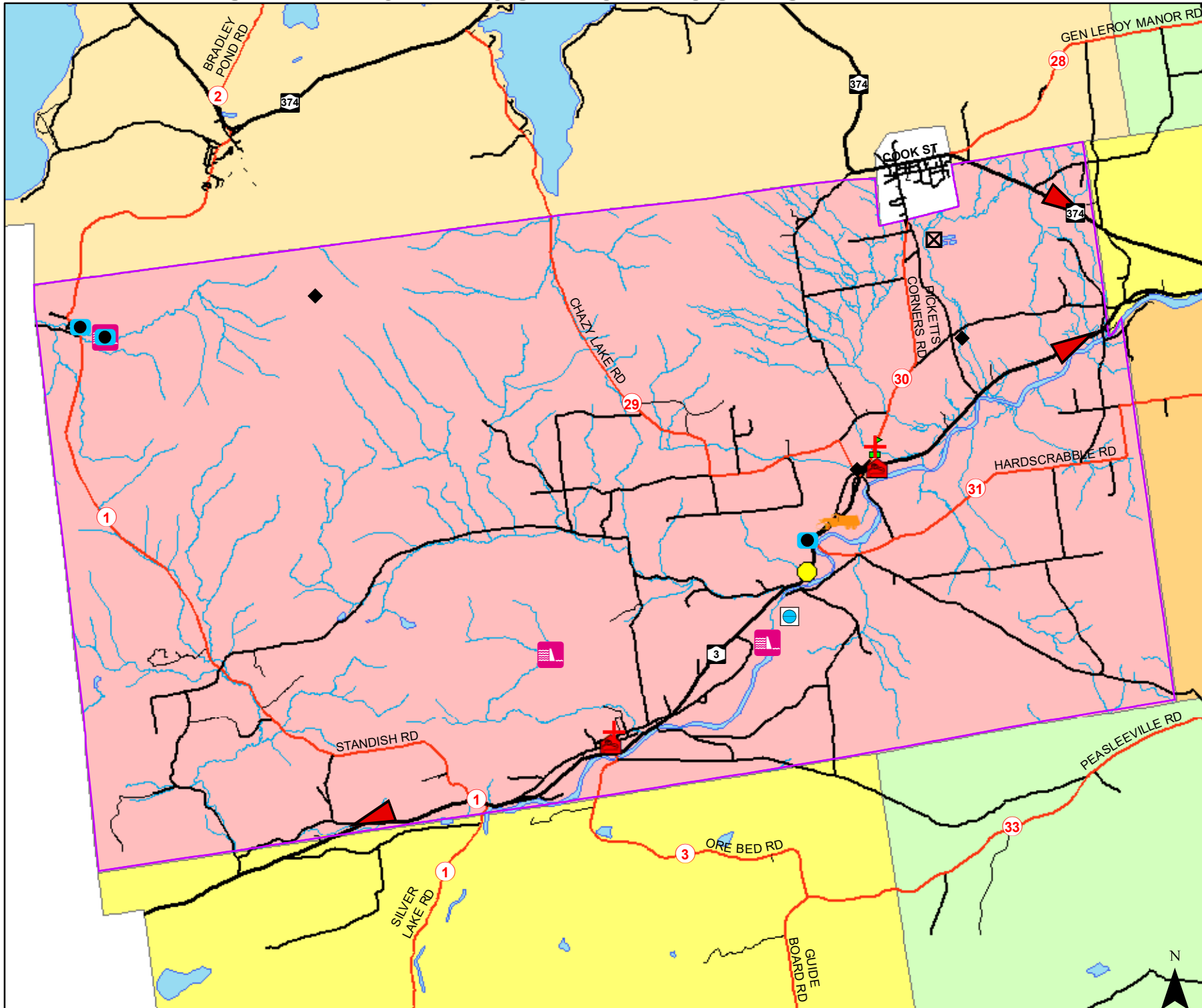
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-  FBFM9
-  FBFM10
-  Urban
-  Agriculture
-  Water
-  Barren
-  Municipal Boundary
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-  Town_Municipal_Halls
-  Health_Centers
-  Fire_Stations
-  Airstrip



SARANAC EVACUATION ROUTES

LEGEND

-  Evacuation Route
-  Municipal Boundary
-  Natural_Gas
-  Hydro_Generation
-  Flood_Control_Structure
-  Water_Supply
-  Communications
-  Sewage_Water_TX
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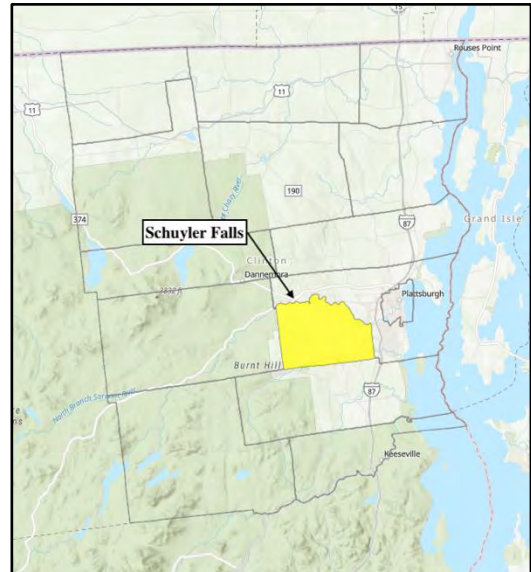
Town of Schuyler Falls

Introduction:

The Town of Schuyler Falls established in 1848 is located in the middle of the county. The town is bordered to the north and east by the Town of Plattsburgh, to the south by Peru, and to the west by the Town of Saranac. The Saranac River forms the northern border of the town with the Town of Plattsburgh, and the Salmon River runs through the southern portion of the town.

The town has several historic buildings and was awarded a Preserve New York grant in 2019 for the purposes of identifying historic and cultural resources to be preserved in the town.

Macomb State Park is a campground located within Schuyler Falls. The park features 97 campsites, a beach, pavilions, playgrounds, and playing fields. Located along the Salmon River and Davis Lake it is a popular day-use area for hiking and boating. In the winter the park is ideal for cross-country skiing and snowshoeing.



TOWN OF SCHUYLER FALLS TABLE OF FACTS	
Land Area	37.26 sq. miles (23,846.4 acres)
Incorporated Villages	N/A
Hamlets	Fanlon Corners, Morrisonville, Rock Corners, Woods Mill
2010 Population Census	5,181
Population Density	139 people/sq. mile
Governance	Supervisor and Town Council
Total Assessed Valuation	\$ 291,695,800
Highest Elevation	561'
Largest Lake	Davis Lake
Rivers	Salmon River, Saranac River
Dams	1
Bridges	12
Interstate Highway	N/A
State Routes	22B
Land Classified: Agricultural	733.8 acres
Land Classified: Industrial	1,175.5 acres
Land Classified: Residential	7,359.4 acres
Hospital/Medical Facility	N/A
Fire & Rescue	Morrisonville Volunteer Fire Department, South Plattsburgh Fire Department
Schools	Morrisonville Elementary
Railroads	N/A
Interstate Bridge	N/A
Law Enforcement	N/A
Correctional Facility	N/A
Power Utility Provider	NYSEG
Water Supply Sources	Town of Plattsburgh Water District
Emergency Shelters	Town Hall, Fire Departments
Critical Facilities	Town Hall, Fire Departments

Planning Process:

A meeting was held with the Town of Schuyler Falls on December 17th, 2019 with town officials and staff to obtain information needed for the plan update.

Capability Assessment:

The Town of Schuyler Falls has several planning mechanisms in place.

TOWN OF SCHUYLER FALLS PLANNING DOCUMENTS	
Document	
Floodplain Regulations	Capital Improvement Plan
Zoning Regulations	Economic Development Plan
Subdivision Regulations	Farmland Preservation Plan
Comprehensive Land Use Plan (2019)	Building & Fire Code (NYS)
Open Space Management Plan	
Natural Resource Protection Plan	

The town is managed by a Town Supervisor and a Town Board, that has 4 council members. The town uses county resources and SUNY Plattsburgh for its planning needs. Engineers and land surveyors are hired as needed. The DEC provides scientific expertise with town hazards. Clinton County Planning Department provides GIS supports. The County as well as subcontractors are used for grant writing

The town uses various funding sources for projects and programming. Community Development Block Grants have been used for housing rehabilitation. There are water district fees used for system maintenance. There are shared services with the Town of Plattsburgh for water and sewer. There are also shared services with Clinton County.

The town primarily uses a Bulletin Board on their town website to provide the public with information. There is a local citizen group Trout Unlimited that provides education to the public regarding the removal of the Imperial Dam.

A self-assessment was completed to rank the various capabilities of the town. Planning and Regulatory capabilities were ranked as moderate. The town rates it's Administrative and Technical, and its Financial capabilities as high. The Education and Outreach was rated high as well, there is a \$10,000 budget for this as well as training provided to town employees and board members.

Critical facilities in the town were evaluated in regard to their flood vulnerability.

TOWN OF SCHUYLER FALLS CRITICAL FACILITY ASSESSMENT				
Facility	Located in 500-year Floodplain?	Flooded in the Past	Generator	Notes/ Mitigation Actions
Fire Department	Y	N	Y	The Morrisonville Fire Department has been elevated to protect from flood
Critical Vehicle and Equipment Storage	N	N	Y	Town Highway Garage
Emergency Operations Center/ Communication Center	N	N	Y	Town Hall
Utility and Power Generating Stations	Y	N	?	Kent Falls Station has had 1 st floor elevated above 500 year level.

There are no medical facilities within the town, but there is a family rehabilitation center. Morrisonville Elementary school is located within the town, it is not located within a floodplain and it has a generator. There is a landfill that generates electricity from methane, it is not located near a floodplain. There are no homeless shelters located within the town. There are no tier 2 facilities.

There are two locations within Schuyler Falls identified for displaced residents:

TOWN OF SCHUYLER FALLS TEMPORARY HOUSING SITES FOR DISPLACED RESIDENTS					
Name and Location	Public or Private	Located in Floodplain?	Power Available?	Water Available?	Sewer Available?
Town Park, Salmon River Road	Public	N	Y	N	N
Town Hall, Mason Street	Public	N	N	Y	N

In the event of an emergency residents would be notified through reverse-911 calls, with the fire department providing door-to-door notification if needed. Shelter information is accessible to the public via county services, telephone, radio, and television. Though no specific accommodations exist for pets at the temporary housing sites, there is a plan that involves trailers with kennel equipment if these housing situations are needed.

The following information concerns flood vulnerable structures in the Town of Schuyler Falls. The number of actual structures in the flood vulnerable areas is likely larger than the number of insured structures. Updated FEMA flood insurance maps will be useful in determining the actual number of vulnerable structures. There is one repetitive loss structure in Schuyler Falls.

Schuyler Falls will continue to manage their floodplains in the future. They will review and approve new development in the special flood hazard areas to ensure these structures are build compliant with the local floodplain ordinance. As the new FIRM are updated by FEMA, meetings will occur with floodplain managers, town supervisors to provide training on the national flood insurance program. Compliance will be discussed at these meeting. Floodplain managers of the most vulnerable communities will be encouraged to join the state floodplain manager association to continue to increase their understanding of how to manage their flood vulnerable areas.

TOWN OF SCHUYLER FALLS FLOOD INSURANCE FACTS			
Number of Repetitive Loss Properties	Number of Policies	Total Claims Since 1978	Total Paid Since 1978
1	12	26	\$242,020

Hazard Rankings:

The list of hazards profiled in the updated plan were ranked.

TOWN OF SCHUYLER FALLS HAZARD RANKINGS				
		Impact		
		High	Med	Low
Probability	High			
	Med		Severe Winter Storms	Ice Storms
	Low		Dam Failure, Floods	Drought, Earthquake, Extreme Cold, Extreme Heat, Hail Storms, High Winds and Tornadoes, Hurricanes, Thunderstorms, Transportation, Wildfires

Potential Loss:

Potential loss was calculated for the Town of Schuyler Falls. The Clinton County Real Property website was used to obtain data for all parcels in the jurisdiction. Data was manipulated to determine the number and value of each structures in each of the 9 class codes. The data was then

totalled for the number of structures and value of structures in each class code. The number of structures impacted from the hazard event was calculated to be 10% of the total number of structures in the jurisdiction. The potential loss from the impact from hazard events was calculated to be 10% of the value of the structures in each class code.

There were 9 codes on the Clinton County Real Property Tax Services website:

100 Agriculture	200 Residential	300 Vacant Lands
400 Commercial	500 Recreation/ Entertainment	600 Community Services
700 Industrial	800 Public Service	900 Forest, Conservation Lands, and Parks

TOWN OF SCHUYLER FALLS POTENTIAL LOSS					
Zoning Class Code	Acreage	Number of Structures	Structure Value	Number of Impacted Structures	Potential Loss
100	733.8	9	\$915,700	0.9	\$91,570
200	7,359.4	1,781	\$191,209,800	178.1	\$19,120,980
300	5,994.6	34	\$328,300	3.4	\$32,830
400	485.4	66	\$8,802,000	6.6	\$880,200
500	177.7	3	\$135,200	0.3	\$13,520
600	78.9	15	\$5,444,100	1.5	\$544,410
700	1,175.5	12	-\$1,565,200	1.2	-\$156,520
800	510.9	10	\$22,022,200	1.0	\$2,202,220
900	5,771.1	9	\$1,247,000	0.9	\$124,700
TOTAL	22,287.3	1,939	\$228,539,100	193.9	\$22,853,910

TOWN OF ALTONA STRUCTURES IN SPECIAL FLOOD HAZARD AREA		
Class Code of Structure	Number of Structures in Floodplain	Structure, Total Assessed Value
200	25	\$1,839,400
900	1	\$1,600
Total	26	\$1,841,000

Mitigation Strategies:

Prioritization of projects occurred as the plan was updated. These projects list the priority as high, medium and low. Generally speaking, high priority projects are projects that enable towns and villages to be fully functional during times of disasters. Medium and low projects are to improve other functions of towns and villages and address actual residents of these municipalities. Implementation of project will occur as funding is obtained. Any project can be implemented as funding, political will and other aspects are addressed.

The cost to implement mitigation projects have been ranked as high, medium or low cost. Low cost projects are those projects that would cost up to \$100,000. Medium cost projects are estimated to cost between \$100,000 and \$500,000. High cost projects are those projects that would cost over \$500,000.

Schuyler Falls reviewed the county project list from the 2014 plan. They have included a status of efforts in Schuyler Falls to advance on these county mitigation project. Projects listed in the 2014 plan specific to Schuyler Falls were reviewed to determine if any progress has been made on implementing these projects. A status and progress are included in the table. New mitigation projects were developed by Schuyler Falls as the plan was being updated in 2020.

TOWN OF SCHUYLER FALLS 2014 MITIGATION PROJECT REVIEW									
Goal	Objective	Strategy	Lead Agency	Estimate	Target Date	Priority	Status	Progress	Issues
Reduce impact of flooding	Reduce impact of bridge failure/road washouts and erosion Goal 1	Assist NYSDOT replacing Route 22 bridge in Morrisonville (Summer 2014)	Town executive/ Highway Department	H-\$9,000,000	ST	H	Completed in 2017		
Reduce impact of flooding, severe storms, straight line winds	Keep trees from threatening lives and property Goal 1,2	Monitor and remove trees /limbs in storm areas	Town executive/ Highway Department	H	ST-Ongoing	L	Ongoing		

TOWN OF SCHUYLER FALLS ACCOMPLISHMENTS									
Project Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to complete (years)	Funding Sources	Priority (high, med, low)	Mitigation Technique Category
Comprehensive Plan Update		Updated town Comprehensive Plan	All Hazards	Town of Schuyler Falls	L	2019			1. Local Plans and Regulations
Waterfront Revitalization Effort		Created a park near the river as part of the Waterfront Revitalization Plan	Flooding	Town of Schuyler Falls	L	Complete			3. Natural Systems Protection
Purchase new equipment		Purchased a new snow plow, and a new excavator	All Hazards	Town of Schuyler Falls	M	Complete			2. Structural and Infrastructure Projects
Tree trimming to reduce storm impact		Monitor and remove tree limbs		Town/ NYSEG	L	Annually/ Ongoing			2. Structural and Infrastructure Projects
Culvert Cleaning		Remove debris from culverts to prevent road washout	Flooding	Town of Schuyler Falls	L	Ongoing			2. Structural and Infrastructure Projects
Expand Fire Station		Upgrade Local Fire Station	All Hazards	Town of Schuyler Falls	H	Complete	Taxes		2. Structural and Infrastructure Projects
Home Buyouts in floodplain		Buyout homes and turn space into town park	Flooding	Town of Schuyler Falls	H	Complete			2. Structural and Infrastructure Projects

TOWN OF SCHUYLER FALLS MITIGATION PROJECTS 2021									
Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
1. Update local planning documents	Officially adopt the CEMPT released by CCOES	Officially adopt the updated CEMP released by CCOES, to help coordinate mitigation actions on a regional level	All Hazards	Town	L	ST	Town Budget	H	1. Local Plans and Regulations
2. Update local planning documents	Zoning ordinance update	Zoning Ordinance Update, include subdivision bylaws, and explore elimination of vulnerable areas from development	All	Town Supervisor	L	ST	Town Budget		1. Local Plans and Regulations
3. Update local laws and regulations	Increase capacity to respond quickly to winter storms	Implement a parking ban in winter to facilitate snow removal	Severe Winter Storms, Ice Storms	Town	L	ST	DOS		1. Local Plans and Regulations

Project # and Name	Goal Addressed	Project or Action	Hazard Addressed	Lead Agency	Estimated Cost	Timeframe to Complete (years)	Potential Funding Sources	Priority (high, med, low)	Mitigation Technique Category
4. Improve road infrastructure	Prevent road flooding and washouts	Replace and upsize culvert on Mark Rd	Flooding	Town Supervisor	H- \$750,000	LT	NY Bridge		2. Structural and Infrastructure Projects
5. Connect town landfill to sewer line	Protect local waterways from landfill leachate	Install sewer main to connect landfill leachate and school district to sewer line	All	Town of Schuyler Falls, and Town of Plattsburgh Water and Sewer District	H- \$2MIL to \$5MIL	LT	DOS		2. Structural and Infrastructure Projects
6. Purchase generators for key buildings in town	Increase the emergency preparedness of the Town Hall	Purchase a generator for the Town Hall to support medical needs	All	Town Supervisor	H- \$100,000	ST	FEMA		2. Structural and Infrastructure Projects
7. Improve Town Highway Garage	Repair, remodel, or replace Town Highway Garage	Conduct a study to determine current and future needs of HWD	All	Town Supervisor	H	LT	Town Budget		2. Structural and Infrastructure Projects





















ArcGIS Maps for Town of Schuyler Falls:

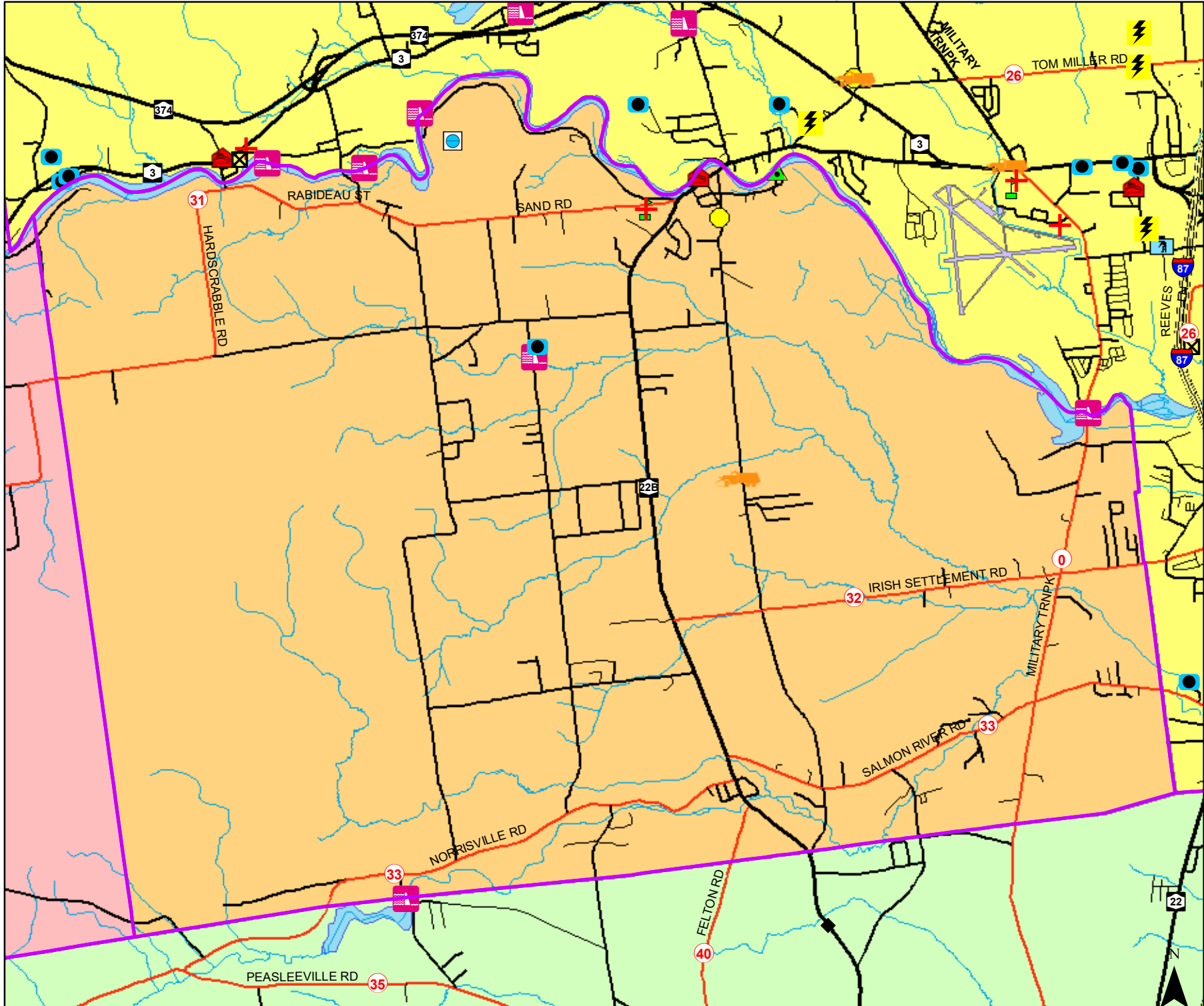
The following pages are full color ArcGIS Maps produced to illustrate:

1. Critical Facilities
2. Critical Facilities and the Floodplain (gray slashed section)
3. Wildfire Fuel Sources
4. Evacuation Routes

SCHUYLER FALLS CRITICAL FACILITIES





















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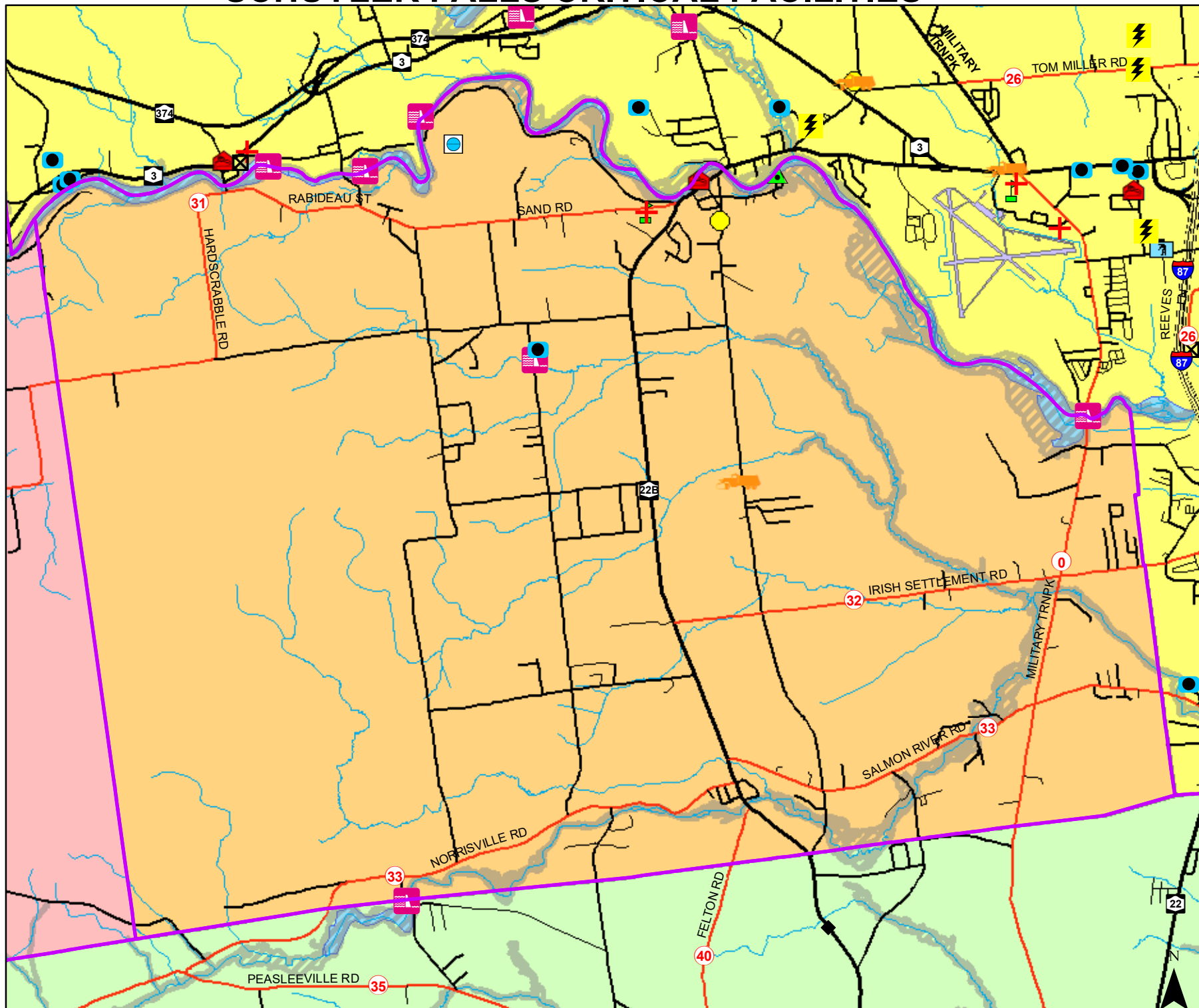
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SCHUYLER FALLS CRITICAL FACILITIES

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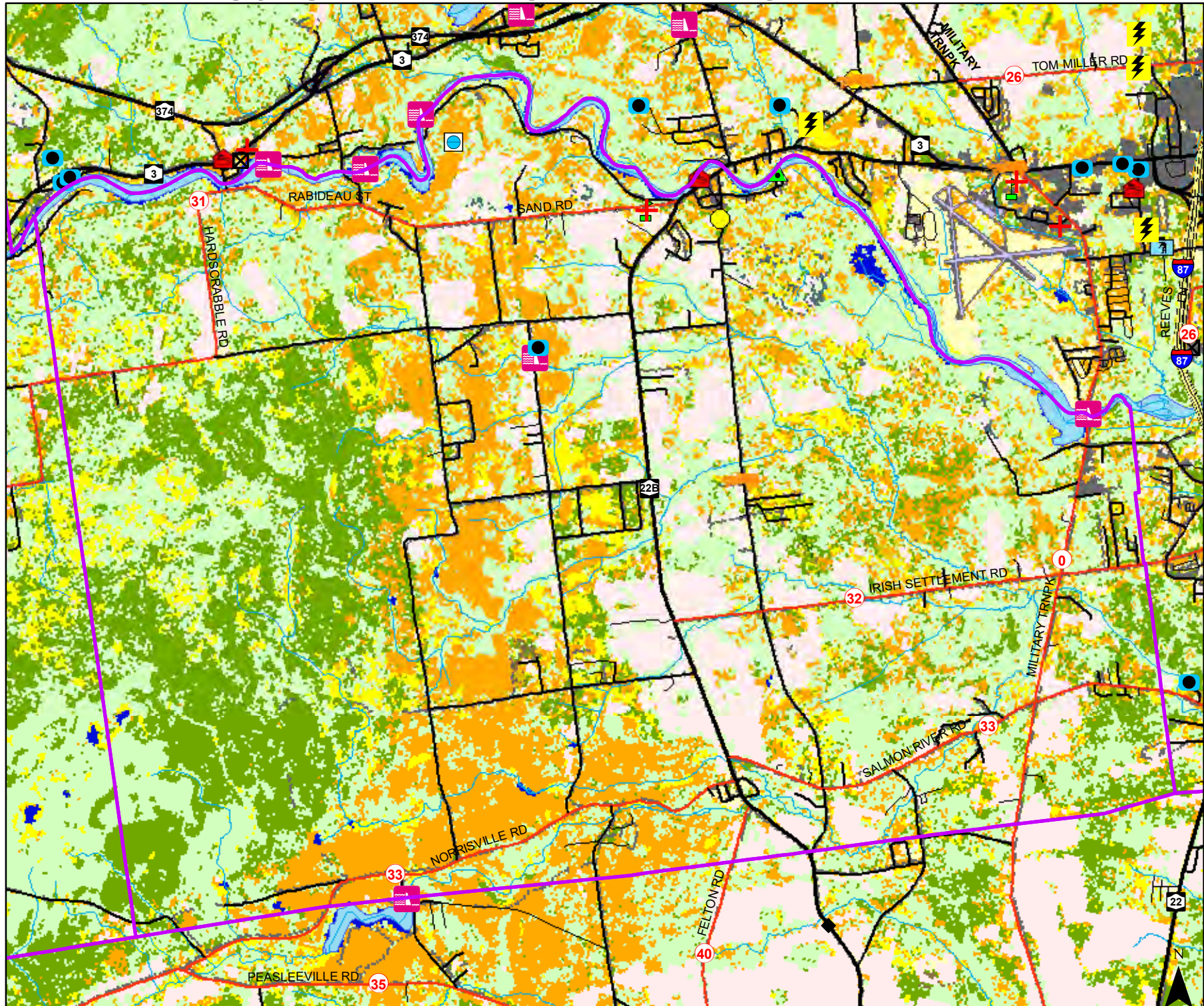
SCHUYLER FALLS WILDFIRE FUEL MAP

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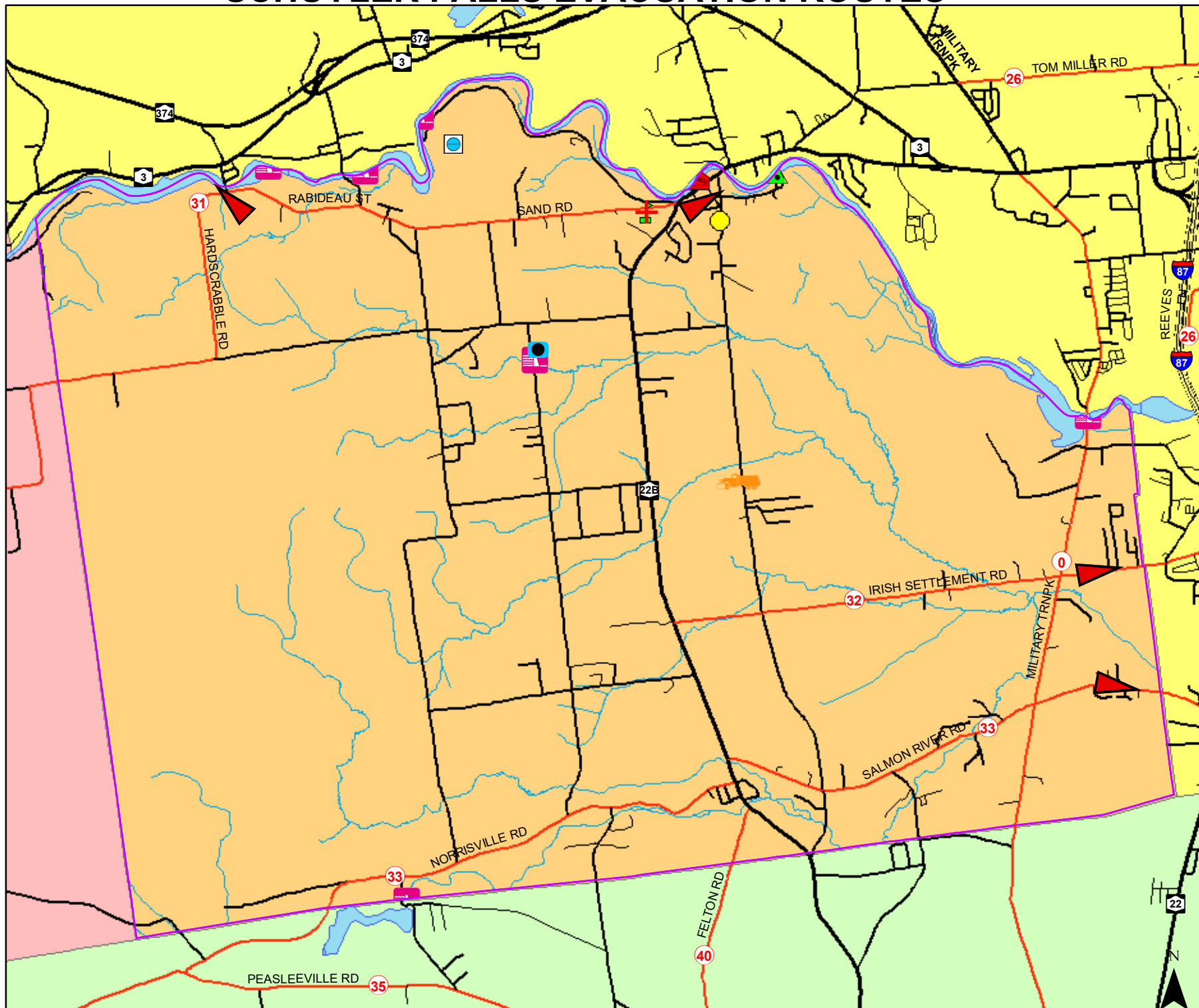
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SCHUYLER FALLS EVACUATION ROUTES

LEGEND

-  Evacuation Route
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SECTION 7: PLAN MAINTENANCE

Update Process Summary:

Monitoring, evaluating, and updating this plan is critical to maintaining its value and success in Clinton County's hazard mitigation efforts. Ensuring effective implementation of mitigation activities paves the way for continued momentum in the planning process and gives direction for the future. This section explains who will be responsible for maintenance activities and what those responsibilities entail. It also provides a methodology and schedule of maintenance activities including a description of how the public will be involved on a continued basis.

The 2014 Hazard Mitigation Plan stated that yearly updated and meetings would take place to maintain the plan. As described earlier in this plan, Clinton County opted to not hold yearly meetings.

Monitoring, Evaluating, and Updating the Plan:

The Clinton County Planning Department (CCPD) is designated to administer the plan and the maintenance process of monitoring, evaluation, and updating with support and representation from all participating municipalities. The CCPD will also lead in all associated plan maintenance requirements including annual reviews. They will coordinate maintenance efforts, but the input needed for effective periodic evaluations will come from County agency representatives, municipal representatives, local emergency management coordinators and planners, the general public and other important groups of stakeholders. The CCPD will oversee the progress made on the implementation of action items identified in the 2021 Hazard Mitigation Plan and modify actions, as needed, to reflect changing conditions. The CCPD along with County agency staff and municipal officials will meet annually to discuss specific coordination efforts that may be needed with other stakeholders.

Mountain View Planning will hold annual meetings during the next five years. The first annual meeting will occur near the one year anniversary of the adoption of the plan. The consultant will develop or use existing documents and strive to teach the County how to hold these annual meetings. The goal is to develop a process that will encourage counties to hold annual meetings post adoption of the plan.

Each municipality will designate a municipal representative to monitor mitigation activities and hazard events within their respective municipalities. The local emergency management coordinator or Supervisor would be suitable for this role. This individual will be asked to work with the CCPD to provide update on applicable mitigation actions and feedback on changing hazard vulnerabilities within their municipality.

The CCPD will also support local and County officials in applying for post-disaster mitigation funds when they are available. All state and federal mitigation funding provided to the County or local municipalities will be reported in subsequent plan updates.

The 2021 Hazard Mitigation Plan will be updated every five years, as required by the Disaster Mitigation Act of 2000. Future plan updates will account for any new hazard vulnerabilities, special circumstances, or new information that becomes available. During the five-year review process, the following questions will be considered as criteria for assessing the effectiveness of the Clinton County Hazard Mitigation Plan:

1. Has the nature or magnitude of hazards affecting the County changed?
2. Are there new hazards that have the potential to impact the County?
3. Do the identified goals and actions address current and expected conditions?
4. Have mitigation actions been implemented or completed?
5. Has the implementation of identified mitigation actions resulted in expected outcomes?
6. Are current resources adequate to implement the plan?
7. Should additional resources be committed to address identified hazards?

Issues that arise during monitoring and evaluation of the plan which require changes to the risk assessment, mitigation strategy, and other components of the plan will be incorporated during future updates.

Incorporation Into Other Planning Mechanisms:

Based on the comprehensive nature of this plan the CCPD believes that this document will be highly useful when updating and developing other planning mechanism in the County. A majority of planning and planning documents are maintained at the local level. The Hazard Mitigation Plan will be useful in the maintenance and development of such local plans as

- Comprehensive Land Use Plans
- Zoning Plans
- Subdivision Regulations
- Comprehensive Emergency Management Plans
- Hazard Vulnerability Analysis
- Stormwater Management Plans

The Hazard Mitigation Plan should be incorporated by the city, towns, and villages in Clinton County. Each jurisdiction will be responsible for integrating the plan into their updated documents.

Continue Public Involvement:

As was done during the development of the 2021 Hazard Mitigation Plan, The CCPD will involve the public during the evaluation and update of the Hazard Mitigation Plan through various methods. The public will have access to the current Hazard Mitigation Plan through their local municipal office and the CCPD, as well as the County website. Information on upcoming events related to the Hazard Mitigation Plan or Solicitation for comments will be announced via newsletters, newspapers, mailings, and on the County website. The CCPD will incorporate all relevant comments during the next update of the Hazard Mitigation Plan.

Conclusion:

Clinton County is vulnerable to a variety of natural hazards. These hazards have impacted residents and property in the past and will continue to impact residents and property in the future.

The philosophy of mitigation has three parts. First, one must understand the hazards that they are vulnerable to. Two, one must accept that one is vulnerable to hazards. Third, and most important, one must take steps to mitigate from those hazards. We all must build our physical environment to withstand hazard events. This cannot be done if any of the three aspects are missing.

Clinton County has implemented many programs that have mitigated these hazard events. The County needs to continue its efforts to reduce the effect from hazards while maintaining and enhancing Clinton County.

Hazards events will happen, but the residents of Clinton County have demonstrated that they have the capability to recover from events when they occur. The communities that make up Clinton County are resourceful and are able to maximize their resources to do their jobs and ensure that they are building upon their strengths.

SECTION 8: PLAN APPROVAL AND ADOPTION

The Clinton County Hazard Mitigation Plan will be submitted to the New York State Department of Homeland Security and Emergency Services Hazard Mitigation Officer for review. Any required changes will be completed, and the plan will then be submitted to the Federal Emergency Management Agency for review and approval. Any changes required from the FEMA review will be incorporated into the plan. Upon receiving *Approved Pending Adoption* status from FEMA, the jurisdictions will then be asked to officially adopt the plan.

Adoption resolution templates are provided in this section and the appendix to assist the County and Municipal governments with recommended language for adoption of the Hazard Mitigation Plan.

**CLINTON COUNTY 2021 HAZARD MITIGATION PLAN
COUNTY ADOPTION RESOLUTION**

Resolution No. _____ Clinton County, NY

WHEREAS, the municipalities of Clinton County, New York are most vulnerable to natural and human-made hazards which may result in loss of life and property, economic hardship, and threats to public health and safety, and,

WHEREAS, Section 322 of the Disaster Mitigation Act of 2000 (DMA 2000), requires state and local governments to develop and submit for approval to the President a mitigation plan that outlines processes for identifying their respective natural hazards, risks, vulnerabilities, and,

WHEREAS, Clinton County acknowledges the requirements of Section 322 of DMA 2000 to have an approved Hazard Mitigation Plan as a prerequisite to receiving post-disaster Hazard Mitigation Grant Program funds, and,

WHEREAS, The Clinton County 2021 Hazard Mitigation Plan has been developed by the Clinton County Planning Department in cooperation with other county departments, local municipal officials, and the citizens of Clinton County, and,

WHEREAS, a public involvement process consistent with the requirements of DMA 2000 was conducted to develop the Clinton County 2021 Hazard Mitigation Plan, and,

WHEREAS, The Clinton County 2021 Hazard Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by both natural and human-made hazards that face the County and its municipal governments,

NOW THEREFORE BE IT RESOLVED, by the governing body for the County of Clinton that:

- The Clinton County 2021 Hazard Mitigation Plan is hereby adopted as the official Hazard Mitigation Plan of the County and

ADOPTED, this _____ day of _____, 2021

ATTEST:

CLINTON COUNTY COMMISSIONERS

**CLINTON COUNTY 2021 HAZARD MITIGATION PLAN
MUNICIPAL ADOPTION RESOLUTION**

Resolution No. _____ Clinton County, NY

WHEREAS, the *<city/town/village name>* Clinton County, New York is most vulnerable to natural and human-made hazards which may result in loss of life and property, economic hardship, and threats to public health and safety, and,

WHEREAS, Section 322 of the Disaster Mitigation Act of 2000 (DMA 2000), requires state and local governments to develop and submit for approval to the President a mitigation plan that outlines processes for identifying their respective natural hazards, risks, vulnerabilities, and,

WHEREAS, *<city/town/village name>* acknowledges the requirements of Section 322 of DMA 2000 to have an approved Hazard Mitigation Plan as a prerequisite to receiving post-disaster Hazard Mitigation Grant Program funds, and,

WHEREAS, The Clinton County 2021 Hazard Mitigation Plan has been developed by the Clinton County Planning Department in cooperation with other county departments, local municipal officials, and the citizens of *<city/town/village name>*, and,

WHEREAS, a public involvement process consistent with the requirements of DMA 2000 was conducted to develop the Clinton County 2021 Hazard Mitigation Plan, and,

WHEREAS, The Clinton County 2021 Hazard Mitigation Plan recommends mitigation activities that will reduce losses to life and property affected by both natural and human-made hazards that face the County and its municipal governments,

NOW THEREFORE BE IT RESOLVED, by the governing body for *<city/town/village name>*:

- The Clinton County 2021 Hazard Mitigation Plan is hereby adopted as the official Hazard Mitigation Plan of the *<city/town/village name>* and

ADOPTED, this _____ day of _____, 2021

ATTEST:

<city/town/village name>
