

9.10 TOWN OF DURHAM

This section presents the jurisdictional annex for the Town of Durham.

A.) HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact	Alternate Point of Contact
Gary Hulbert, Supervisor 7309 State Route 81 East Durham, NY 12423 518-239-6122 Email: TownSupervisor@DurhamNY.com	Alan Beechert, Deputy Highway Superintendent 7309 State Route 81 East Durham, NY 12423 518-239-4501 E-mail: aeb@nyair.net

B.) TOWN PROFILE

Population

2,724 (estimated 2007 U.S. Census)

Location

The Town of Durham is located in the northwest corner of Greene County.

Climate

Greene County, with all its municipalities, generally experiences seasonable weather patterns characteristic of the northeastern U.S. Warm summers are typically experienced, with occasional high temperatures and humidity. Midsummer temperatures typically range from about 68°F to 80°F (Fahrenheit). The winters of Greene County are long and cold. Winter high temperatures are usually in the middle to upper 20s°F, with minimum temperatures of 15°F expected. During the winter, temperatures are cooler than the temperatures in areas located near large bodies of water. Snow accumulates to an average depth of 68 inches each year.

Brief History

The Town of Durham is located in the northwest corner of Greene County, NY about twenty-four miles northwest of the Village of Catskill and about thirty miles southwest of Albany, the State Capital. The Town's 49 square miles (33,000) acres slope from the northernmost escarpment of the Catskill Mountains to a plain that gently rolls north to Albany and east to the Hudson River Valley.

Settled in 1784 the current population is estimated at 2,724. Durham as a mix of permanent and seasonal housing, with 63.7% of the 1,642 housing units occupied permanently, and 454 being classified for seasonal or recreational use. Just of 30% of the households have a child under 18, and slightly more have a person over 65.

There are four hamlets within the Town of Durham: Durham, East Durham, Cornwallville, and Oak Hill. East Durham is the traditional center of commerce and tourism in the town. Oak Hill is designated as one of eleven "Historic Hamlets of New York" and is currently undergoing revitalization and business development. Durham and Cornwallville, which have horse farms and especially scenic views, have become a particular magnet for "weekenders" and summer residents.



The Town possesses important scenic, cultural, historic, natural and recreational qualities. Durham has been a farming community for more than 200 years. The agricultural landscape is a critical component of the Town's unequaled natural and scenic character. Farming, tourism and related support businesses are key to maintaining community character.

Governing Body Format

Elected supervisor and four elected board members

Growth/Development Trends

Our current growth rate is approximately 1.5%

We are attempting to obtain funding for a Main Street Revitalization project for Main Street East Durham. State Route 145 runs through the center of the town with a forty mile an hour speed limit. There are limited sidewalks in disrepair scattered along the approximately 2.5 miles of road. With stores resorts, and churches boarding the streets it is unsafe traveling for pedestrians and motorist alike when people attempt to walk from location to location.

Per the Greene County Comprehensive Economic Plan (2007):

Potential Growth Areas	Town of Durham
	The town wishes to see continued growth along the State Route 145 corridor to connect East Durham with the Hamlet of Durham making this a distinct corridor. The Town of Durham and Community Planners have been actively pursuing grants for the streetscape improvements and revitalization projects.

C.) NATURAL HAZARD EVENT HISTORY SPECIFIC TO THE TOWN

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Snowstorm	Not applicable	April, 1857	\$48,000
Flood (Hurricane Diane)	DR-45	August, 1955	Not available
Flood (Hurricane Katie)	DR-52	October, 1955	Not available
Extreme Cold	Not applicable	January, 1971	Not available
Flood (Tropical Storm Agnes)	Not applicable	June, 1972	\$806,000 (countywide)
Record Cold	Not applicable	February, 1980	Not available
Record Cold	Not applicable	December, 1980	Not available
Extreme Cold	Not applicable	January, 1981	Not available
Extreme Cold	Not applicable	January, 1982	Not available
Extreme Cold	Not applicable	January, 1984	Not available
Flood	DR-792	April, 1987	\$2,000,000 (countywide)
Severe Winter Storm	DR-801	October, 1987	Not available
Tornado	Not applicable	July, 1989	Not available

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Ice Storm	Not applicable	December, 1991	\$385,000 (countywide)
Extreme Cold	Not applicable	February, 1993	Not available
Blizzard / Extreme Cold	EM-3107	March, 1993	Not available
Record Cold	Not applicable	January, 1994	Not available
Flood	Not applicable	October, 1995	\$3,000,000 (countywide)
Blizzard	DR-1083	January, 1996	\$160,000 (countywide)
Severe Storm and Flooding	DR-1095	January, 1996	\$10,000,000 (countywide)
Flood	Not applicable	October, 1996	\$40,000
Snowstorm	Not applicable	March / April, 1997	\$709,000 (countywide)
Severe Storm/Flooding (Hurricane Floyd)	DR-1295	September, 1999	\$3,000,000 (countywide)
Severe Storms	DR-1335	May/September, 2000	\$115,000 (countywide)
TSTM / Hail / Lightning	Not applicable	June, 2001	Between \$370,000 and \$400,000 (countywide)
Snowstorm	EM-3173	December 2002 / January 2003	\$29,000
Snowstorm	EM-3184	February, 2003	Not available
Severe Storms, Tornado, and Flooding	DR-1486	July/August, 2003	Between \$75,000 and \$1,100,000 (countywide)
Flood / Dam Failure Scare	Not applicable	September, 2004	Not available
Flood (Hurricane Ivan)	Not applicable	September, 2004	Not available
Severe storms and Flooding	DR-1589	April, 2005	\$1,300,000 (countywide)
Severe storms and Flooding	DR-1650	June/July, 2006	Not available
Snowstorm (Valentine's Day Storm)	Not applicable	February, 2007	Not available
Snowstorm (St. Patrick's Day Storm)	Not applicable	March, 2007	Not available
Severe Storms and Inland and Coastal Flooding (Nor'Easter)	DR-1692	April, 2007	Between \$1,300,000 and \$111,000,000 (may be inaccurate) (countywide)
Landslide (Route-20)	Not applicable	Date unknown	Not available
Landslide [CR 20 – West	Not applicable	Date unknown	Not available

Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
of CR 22 (also known as 'The Dugway']]			
Landslide (CR 67 – North of O'Hara Road)	Not applicable	Date unknown	Not available
Severe Ice Storm	DR-1827	12-13 to 12-31-08	Approximately \$1,200,000 county-wide

Number of FEMA Identified Repetitive Flood Loss Properties: 0^a

Number of FEMA Identified Severe Repetitive Flood Loss Properties: 0^a

^a Source: FEMA Region II, 2008.

D.) NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Rank #	Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
4	Earthquake	\$4,381,404 ^{e, f}	Low	10	Low
1	Flood	\$15,361,000 ^e	High	54	High
3	Ground Failure	Not available ^g	Medium	36	Medium
1	Severe Storm	\$252,410 ^a	High	54	High
2	Severe Winter Storm	\$22,867,900 ^d	High	48	High

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)
 b. High = Total hazard priority risk ranking score of 40 and above
 Medium = Total hazard priority risk ranking of 20-39
 Low = Total hazard risk ranking below 20
 c. The valuation of general building stock and loss estimates determined in Greene County were based on the default general building stock database provided in HAZUS-MH MR3 (R.S. Means 2006).
 d. 500-year MRP structural value loss estimate only; does not include the value of contents. For severe winter storm, the loss estimate is 10% of total general building stock value.
 e. Loss estimates for both structure and contents (500-year MRP for the flood hazard and 2,500-year MRP for the earthquake hazard).
 f. Estimated loss total includes the Town of Durham and Town of Greenville.
 g. 1.6% of the Town of Durham general building stock is exposed or located within the approximate landslide hazard area.

E.) CAPABILITY ASSESSMENT

This section identifies the following capabilities of the local jurisdiction:

- Legal and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification.

E.1) Legal and Regulatory Capability

Regulatory Tools (Codes, Ordinances., Plans)	Local Authority (Y or N)	Prohibitions (State or Federal) (Y or N)	Higher Jurisdictional Authority (Y or N)	State Mandated (Y or N)	Code Citation (Section, Paragraph, Page Number, date of adoption)
1) Building Code	Y	N	Y	Y	June 1, 2004
2) Zoning Ordinance	N	N	N	N	None
3) Subdivision Ordinance	Y	N	N	N	Feb 1996 & Feb 2000
4) NFIP Flood Damage Prevention Ordinance (if you are in the NFIP, you must have this.)	Y	Y	Y	Y	Effective Date: 3/18/2008
5) Growth Management	Y	N	N	N	
6) Floodplain Management / Basin Plan	Y	Y	Y	N	April 1988
7) Stormwater Management Plan/Ordinance	Y	N	Y	Y	
8) Comprehensive Plan / Master Plan/ General Plan	Y	N	N	N	April 2008
9) Capital Improvements Plan	Y	N	N	N	
10) Site Plan Review Requirements	N	Y	Y	N	May 2005
11) Open Space Plan	Y	N	N	N	CURRENTLY BEING DEVELOPED
12) Economic Development Plan	Y	N	N	N	
13) Emergency Response Plan	Y	N	Y	Y	March 2003
14) Post Disaster Recovery Plan	?	N	N	N	
15) Post Disaster Recovery Ordinance	?	N	N	N	
16) Real Estate Disclosure req.	Y	N	N	N	
17) Other [Special Purpose Ordinances (i.e., critical or sensitive areas)]	Y	N	N	N	Communications Tower Siting Ordinance (2/12/98)

E.2) Administrative and Technical Capability

Staff/ Personnel Resources	Available (Y or N)	Department/ Agency/Position
1) Planner(s) or Engineer(s) with knowledge of land development and land management practices	Y	Fraser Associates
2) Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Fraser Associates
3) Planners or engineers with an understanding of natural hazards	Y	Greene County
4) NFIP Floodplain Administrator (if you are in the NFIP, you must have one.)	Y	Lawrence Cooke, Code Enforcement Officer
5) Surveyor(s)	Y	Fraser Associates
6) Personnel skilled or trained in "GIS" applications	Y	Greene County
7) Scientist familiar with natural hazards in the Town of Durham.	N	
8) Emergency Manager	Y	Greene County
9) Grant Writer(s)	Y	Fraser Associates
10) Staff with expertise or training in benefit/cost analysis	N	

E.3) Fiscal Capability

Financial Resources	Accessible or Eligible to use (Yes/No/Don't know)
1) Community development Block Grants (CDBG)	Yes
2) Capital Improvements Project Funding	Yes
3) Authority to Levy Taxes for specific purposes	Yes
4) User fees for water, sewer, gas or electric service	NO
5) Impact Fees for homebuyers or developers of new development/homes	Don't Know
6) Incur debt through general obligation bonds	Yes
7) Incur debt through special tax bonds	Don't Know
8) Incur debt through private activity bonds	Don't Know
9) Withhold public expenditures in hazard-prone areas	Don't Know
10) State mitigation grant programs (e.g. NYSDEC, NYCDEP)	Don't Know
11) Other	Don't Know

E.4) Community Classifications

Program	Classification	Date Classified
Community Rating System (CRS)	N/A	
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	
Public Protection	N/A	
Storm Ready	N/A	
Firewise	N/A	

- N/A = Not applicable. - = Unavailable.

The classifications listed above relate to the community's effectiveness in providing services that may impact its vulnerability to the natural hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class one (1) being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

F.) PROPOSED HAZARD MITIGATION INITIATIVES

Initiative	Mitigation Initiative	Applies to new or existing assets	Hazard(s) Mitigated	Objectives Met	Lead Agency	Support agencies	Estimated Cost	Sources of Funding	Timeline
TD-1A	Where appropriate, support retrofitting of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for retrofitting based on cost-effectiveness versus relocation. Where retrofitting is determined to be a viable option, consider implementation of that action based on available funding.	Existing	Flood, Severe Storm	2, 4, 11	Municipality (likely through NFIP Floodplain Administrator)	SEMO, FEMA	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Long-term DOF
TD-1B	Where appropriate, support purchase, or relocation of structures located in hazard-prone areas to protect structures from future damage, with repetitive loss and severe repetitive loss properties as priority. Identify facilities that are viable candidates for relocation based on cost-effectiveness versus retrofitting. Where relocation is determined to be a viable option, consider implementation of that action based on available funding.	Existing	Flood, Severe Storm	2, 4, 11	Municipality (likely through NFIP Floodplain Administrator)	SEMO, FEMA	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Long-term DOF

Initiative	Mitigation Initiative	Applies to new or existing assets	Hazard(s) Mitigated	Objectives Met	Lead Agency	Support agencies	Estimated Cost	Sources of Funding	Timeline
TD-2	As appropriate, support participation in incentive-based programs such as CRS.	New & Existing	Flood	2, 3, 4, 5, 6, 8, 9, 10, 11	Municipality (likely through NFIP Floodplain Administrator)	SEMO, ISO, FEMA	Low - Medium	Local Budget	Short
TD-3	Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0	New & Existing	All Hazards	All Objectives	Municipality (through mitigation planning point of contacts)	County (through Mitigation Planning Coordinator), SEMO	Low – High (for 5-year update)	Local Budget, possibly FEMA Mitigation Grant Funding for 5-year update	Ongoing
TD-4	Strive to maintain compliance with, and good-standing in the National Flood Insurance program.	New & Existing	Flood	2, 3, 4, 5, 6, 8, 9, 10, 11	Municipality (likely through NFIP Floodplain Administrator)	SEMO, ISO, FEMA	Low - Medium	Local Budget	Ongoing
TD-5	Continue to develop, enhance, and implement existing emergency plans.	New & Existing	All Hazards	1, 7, 8, 9	Municipal Emergency Manager with support from County OEM and SEMO	County Emergency Management, SEMO	Low - Medium	Local Budget	Ongoing
TD-6	Create/enhance/ maintain mutual aid agreements with neighboring communities.	New & Existing	All Hazards	1,7,8, 9	Local Emergency Management, DPW and Roads	Surrounding municipalities and County	Low - Medium	Local Budget	Ongoing
TD-7	Support County-wide initiatives identified in Section 9.1 of the County Annex.	New & Existing	All Hazards	All objectives	Local departments (as applicable for specific initiative)	County and Regional agencies (as appropriate for initiative)	Low - High	Existing programs and grant funding where applicable	Ongoing – Long-term depending on initiative
TD-8	Evaluate and support if appropriate, the buy-out and relocation of Town	Existing	Flood, Severe Storm	2, 4, 11	Municipality (likely through NFIP)	SEMO, FEMA	High	FEMA Mitigation Grant	Long-term DOF

Initiative	Mitigation Initiative	Applies to new or existing assets	Hazard(s) Mitigated	Objectives Met	Lead Agency	Support agencies	Estimated Cost	Sources of Funding	Timeline
	Offices and Highway Department out of area vulnerable to flooding.				Floodplain Administrator)			Programs and local budget (or property owner) for cost share	
TD-9	Evaluate and support if appropriate the relocation of Town Park out of area vulnerable to flooding and conversion to natural area.	Existing	Flood, Severe Storm	2, 4, 11	Municipality (likely through NFIP Floodplain Administrator)	SEMO, FEMA	High	FEMA Mitigation Grant Programs and local budget (or property owner) for cost share	Long-term DOF

Notes: Short term = 1 to 5 years. Long Term= 5 years or greater. OG = On going program. DOF = Depending on funding. PDM = Pre-Disaster Mitigation Grant Program.

G.) ANALYSIS OF MITIGATION ACTIONS

This table summarizes the participant's mitigation actions by hazard of concern and the six mitigation types to illustrate that the Town has selected a comprehensive range of actions/projects.

Hazard of Concern	Mitigation Type					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Earthquake	TD-3, TD-7	TD-3, TD-7	TD-3, TD-7	TD-3, TD-7	TD-3, TD-5, TD-6, TD-7	TD-3, TD-7
Flooding (riverine, flash, coastal and urban flooding)	TD-2, TD-3, TD-4, TD-7	TD-1, TD-2, TD-3, TD-4, TD-7, TD-8, TD-9	TD-1, TD-2, TD-3, TD-4, TD-7	TD-3, TD-7	TD-2, TD-3, TD-5, TD-6, TD-7	TD-3, TD-7
Ground Failure	TD-3, TD-7	TD-3, TD-7	TD-3, TD-7	TD-3, TD-7	TD-3, TD-5, TD-6, TD-7	TD-3, TD-7
Severe Storms (windstorms, thunderstorms, hail, lightning and tornados)	TD-2, TD-3, TD-4, TD-7	TD-1, TD-2, TD-3, TD-4, TD-7, TD-8, TD-9	TD-1, TD-2, TD-3, TD-4, TD-7	TD-3, TD-7	TD-2, TD-3, TD-5, TD-6, TD-7	TD-3, TD-7
Severe Winter Storm (heavy snow, blizzards, ice storms)	TD-3, TD-7	TD-3, TD-7	TD-3, TD-7	TD-3, TD-7	TD-3, TD-5, TD-6, TD-7	TD-3, TD-7

Notes:

- 1. Prevention:** 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, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- 2. Property Protection:** Actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- 3. Public Education and Awareness:** Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and school-age and adult education programs.
- 4. Natural Resource Protection:** Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- 5. Emergency Services:** Actions that protect people and property, during and immediately following, a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities.
- 6. Structural Projects:** Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.

H.) PRIORITIZATION OF MITIGATION INITIATIVES

Initiative #	# of Objectives met	Benefits	Costs	Do Benefits equal or exceed Costs? (Yes or No)	Is project Grant eligible? (Yes or No)	Can Project be funded under existing programs/budgets? (Yes or No)	Priority (High, Med., Low)
TD-1A	3	H	H	Y	Y	N	M-H*
TD-1B	3	H	H	Y	Y	N	M-H*
TD-2	9	M	L	Y	N	Y	H
TD-3	11	M	M	Y	N (Yes for 5 year update)	Y	H
TD-4	9	H	L	Y	N	Y	H
TD-5	4	M	L	Y	N	Y	H
TD-6	4	M	L	Y	N	Y	H
TD-7	11	M-H	L-M	Y	Dependant on specific initiative	Dependant on specific initiative	M-H (dependant)
TD-8	3	H	H	Y	Y	N	M
TD-9	3	H	H	Y	Y	N	M

Notes: H = High. L = Low. M = Medium. N = No. N/A = Not applicable. Y = Yes.

* This initiative has a “Medium” priority based on the prioritization scheme used in this planning process (implementation dependent on grant funding), however it is recognized that addressing repetitive and severe repetitive loss properties is considered a high priority by FEMA and SEMO (as expressed in the State HMP), and thus shall be considered a “High” priority for all participants in this planning process.

Explanation of Priorities

- **High Priority** - A project that meets multiple objectives (i.e., multiple hazards), benefits exceeds cost, has funding secured or is an on-going project and project meets eligibility requirements for the Hazard Mitigation Grant Program (HMGP) or Pre-Disaster Mitigation Grant Program (PDM) programs. High priority projects can be completed in the short term (1 to 5 years).
- **Medium Priority** - A project that meets goals and objectives, benefits exceeds costs, funding has not been secured but project is grant eligible under, HMGP, PDM or other grant programs. Project can be completed in the short term, once funding is completed. Medium priority projects will become high priority projects once funding is secured.

- **Low Priority** - Any project that will mitigate the risk of a hazard, benefits do not exceed the costs or are difficult to quantify, funding has not been secured and project is not eligible for HMGP or PDM grant funding, and time line for completion is considered long term (1 to 10 years). Low priority projects may be eligible other sources of grant funding from other programs. A low priority project could become a high priority project once funding is secured as long as it could be completed in the short term.

Prioritization of initiatives was based on above definitions:

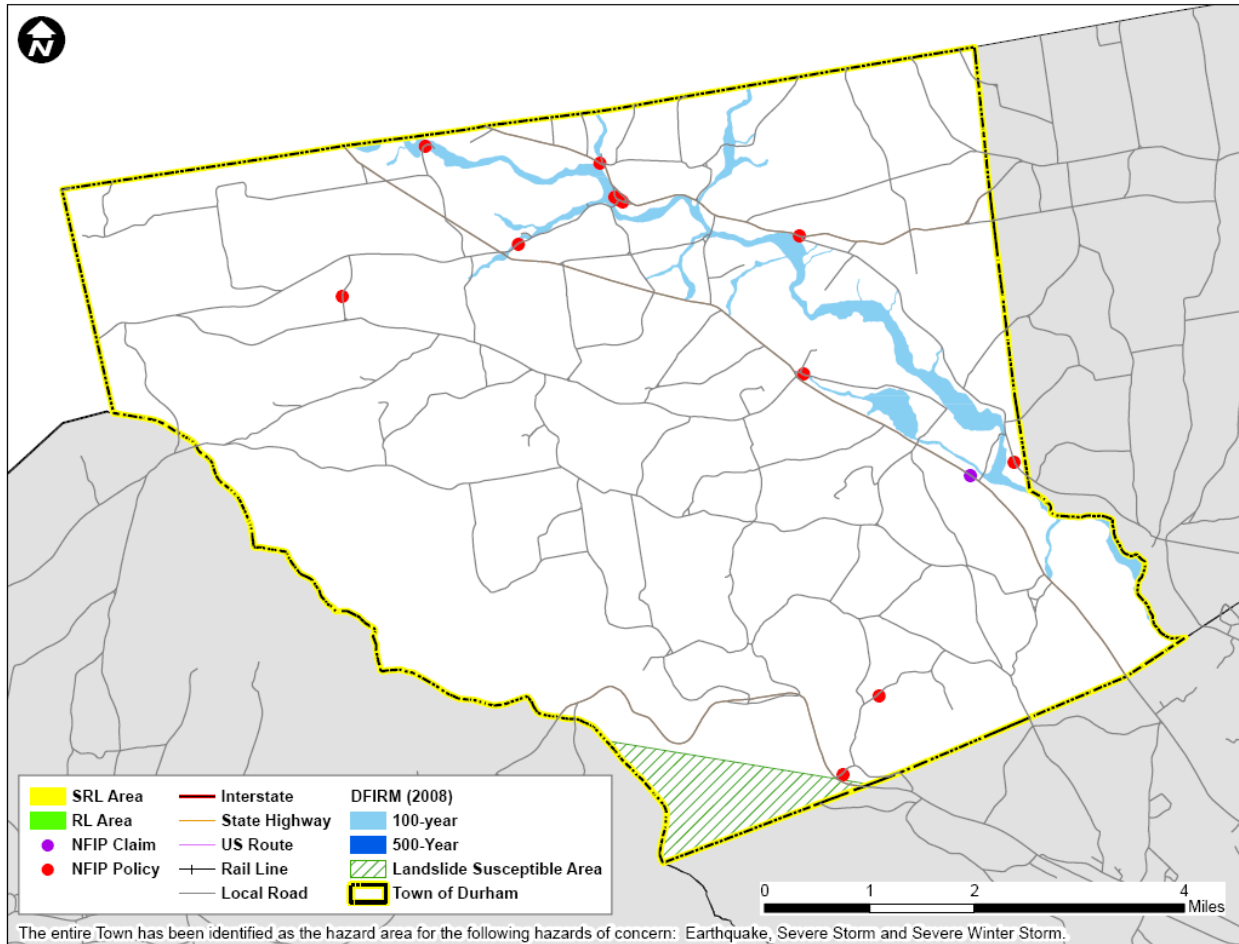
Prioritization of initiatives was based on parameters other than stated above:

I.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

None at this time.

J.) HAZARD AREA EXTENT AND LOCATION

A hazard area extent and location map has been generated and is provided below for the Town of Durham to illustrate the probable areas impacted within the Town. This map is based on the best available data at the time of the preparation of this Plan, and is considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Town of Durham has significant exposure. The county maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.



Sources: FEMA DFIRM, 2008; FEMA Region II, 2008; Greene County Planning and Economic Development, 2008; NYSDPC, 2008
 Notes: DFIRM = Digital Flood Insurance Rate Map. NFIP = National Flood Insurance Program; RL = Repetitive Loss; SRL = Severe Repetitive Loss

K.) ADDITIONAL COMMENTS

None at this time.