9.8 TOWN OF DEPOSIT

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

A.) HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact	Alternate Point of Contact
Thomas A. Axtell, Supervisor 3 Elm Street Deposit, NY 13754 Phone: (607) 467-2433 tndeps65@tds.net	Daniel Axtell, Highway Superintendent 3 Elm Street Deposit, NY 13754 Phone (607) 467-3394 dbaxtell@tds.net

B.) TOWN PROFILE

The Town of Deposit is located at the edge of the Western Catskill Region in the southwestern corner of Delaware County. The following hamlets and villages are located within the Town of Deposit: Hamlet of Barbourville, Hamlet of China, Hamlet of Hale Eddy, Hamlet of Hambletville, Hamlet of Stilesville, Hamlet of Barbourville, and Village of Deposit. The Town covers an area of 44.6 square miles[1].

According to the U.S. Census, the 2010 population for the Town was 868[2]. The main population center is the Village of Deposit, which lies on the border between Delaware and Broome Counties[3]. New York State Routes 10, 17 and 8 run through the Town[4].

The eastern portion of the Town is marked by steep hills. In the western part of the town, the topography is still quite hilly, but the slopes are generally gentler than those found in the east[5].

Approximately 2.5 river miles upstream from the Village of Deposit, the Cannonsville Dam marks the beginning of a 16-mile long impoundment of the West Branch of the Delaware River ("West Branch") that is part of the New York City drinking water system. The Cannonsville Reservoir extends upstream of the dam eastward through the Town of Deposit and into the Town of Tompkins[6]. Below the dam the West Branch runs west along New York State Route 10, and then turns to the southeast and runs through the Village of Deposit, eventually forming the western boundary of the Town. Below the Village of Deposit the West Branch valley is narrow, flanked by hills that rise rapidly to elevations between 1600 and 1800 feet above sea level.

Approximately 14% of the Town lies within the Cannonsville Reservoir watershed. A significant portion of the remaining part of the Town lies within the West Branch watershed[7].

While the West Branch is the largest waterway in the Town of Deposit, there are numerous small creeks and streams. Many of these creeks and streams are tributaries to the Delaware River. The other waterways of the Town include: Butler Brook, Cold Spring Creek, Cabin Brook, Steam Mill Branch, Michigan Hollow, Whitaker Brook, Hungry Hollow, Laurel Creek, Roods Creek and Travis Brook. Crystal Lake, Columbia Lake and Silver Lake are private lakes located in the Town

[1] Town of Deposit Comprehensive Plan, 2003; Town of Deposit Highway Management Plan, 2010
[2] Census, 2010
[3] Town of Deposit Highway Management Plan, 2010
[4] ibid
[5] Town of Deposit Comprehensive Plan, 2003
[6] ibid
[7] ibid

Hazard Vulnerabilities in the Town

The following section discusses vulnerabilities from high-ranked hazards within the Town of Deposit. Complete profiles of all hazards of concern are included in Section 5 of this Plan. Potential losses from Flood and Severe Storm were modeled using FEMA's **Hazards United States-Multi-Hazard (HAZUS-MH)** software. HAZUS-MH uses Geographic Information Systems technology to estimate physical, economic, and social impacts of disasters[8]. For details regarding the methodology used for the vulnerability assessment, the Town's vulnerability to each of the hazards assessed and for further explanation of the tables included below, please refer to the appropriate hazard profiles in Section 5.4 of this Plan. For details regarding specific disaster events that have impacted the Town, please see Section C of this document, "Documented Losses to Natural Hazard Events Specific to the Community".

Severe Storm

The entire Town is exposed and thus vulnerable to a severe storm event. HAZUS-MH estimates the 100-year **mean return period (MRP)** wind speeds for Delaware County to be 35 to 60 miles per hour (mph). This equates to a Tropical Depression to a Tropical Storm. For the 100-year MRP event, HAZUS-MH estimates $0 in building damages in the Town of Deposit. For the 500-year MRP wind event, HAZUS-MH estimates wind speeds to range from 63 to 77 mph across the County. This equates to a Tropical Storm to a Category One hurricane. HAZUS estimates $104,552 in damages to the general building stock (structure) or less than one-percent of the Town's building inventory. The residential buildings are estimated to experience the majority of the damage (wood and masonry).

Table 9.8-1 summarizes the estimated debris that may be produced as a result of 100- and 500-year MRP wind events. This estimate does not include debris produced by flooding that may occur with these storm events.

Table 9.8-1. Debris Production for 100- and 500-Year MRP Hurricane-Related Winds

Brick and Wood (tons)		Concrete and Steel (tons)		Tree (tons)	
100-Year	500-Year	100-Year	500-Year	100-Year	500-Year
0	4	0	0	0	3,357

Source: HAZUS-MH 2.0

In terms of critical facility damage, HAZUS-MH estimates the Town of Deposit's Town Garage has a one-percent chance of experiencing minor damage as a result of a 500-year MRP wind event. No damages are estimated as a result of the 100-year MRP wind event. At this time, HAZUS-MH does not estimate losses to transportation lifelines and utilities as part of the hurricane model.

Severe Winter Storm

Table 9.8-2 summarizes percent damages that could result from severe winter storm conditions for the Town's total building stock (structure only). Given professional knowledge and information available, the potential losses for this hazard are considered to be overestimated; hence, conservative estimates for losses associated with severe winter storm events.

[8] http://www.fema.gov/hazus

Table 9.8-2. General Building Stock (Structure Only) Exposure and Estimated Losses from Severe Winter Storm Events

Total (All Occupancies) RV	1% Damage Loss Estimate	5% Damage Loss Estimate	10% Damage Loss Estimate
$56,836,000	$568,360	$2,841,800	$5,683,600

Source: HAZUS-MH 2.0
RV = Replacement Cost Value.

Flood

Flood Prone Areas

Of the Town's total land area, 2.5 square miles are located within a FEMA-defined 1% annual chance (100-year) flood boundary and 2.6 square miles are located within a FEMA-defined 0.2% annual chance (500-year) flood boundary.

It is important to note that not all flood hazard areas within Delaware County are identified in the Delaware County **Flood Insurance Study (FIS)** or on the **Flood Insurance Rate Map (FIRM)**. Identified flood hazard areas also vary in the level of accuracy with which they've been delineated. Consequently all development and infrastructure on floodplains or other areas where water can accumulate within the Town of Deposit are considered vulnerable to the flood hazard, regardless of inclusion in the FIS/FIRM.

In general, an "approximate" study determines the horizontal extent of the flood hazard only, based on the best available data. Flood hazard areas studied by approximate methods are shown as "A" zones on the Delaware County FIRM. A "detailed" study is more accurate than an approximate study and provides additional information about the flood hazard, such as water surface elevation during a flood of a given magnitude. Flood hazard areas studied by detailed methods are shown as "AE" zones on the Delaware County FIRM[9].

Flood hazard areas studied by detailed methods for the Delaware County FIS were selected with priority given to known areas of flood hazard, and areas of projected development. In the Town of Deposit, the West Branch was studied by detailed methods. Flood hazard areas have been determined using approximate methods for Cold Spring Creek[10].

Floodplain population and the National Flood Insurance Program

The Town of Deposit has a total of 1,198 tax parcels.136 of those parcels (11.4%) intersect the FEMA-defined 1% annual chance (100-year) flood boundary and 150 (12.5%) intersect the FEMA-defined 0.2% annual chance (500-year) flood boundary[11]. It is estimated that in the Town of Deposit, 74 residents live within the 1% annual chance (100-year) and 0.2% annual chance (500-year) floodplains.

As of January 2012 FEMA reports that 27 properties in the Town of Deposit carry flood insurance under the **National Flood Insurance Program (NFIP)**. 19 of those insured properties are located within the FEMA-defined 1% annual chance (100-year) floodplain, 20 policies are located within the FEMA-defined 0.2% annual chance floodplain, and 7 policies located outside FEMA-defined flood hazard areas. The Town of Deposit has 3 **Repetitive Loss**[12] properties and 1 **Severe Repetitive Loss**[13] properties[14].

[9] For more information on FEMA Flood Insurance Studies and Flood Insurance Rate Maps, please see Section 5.4.3
[10] FEMA Flood Insurance Study for Delaware County, 2009
[11] Delaware County DFIRM (FEMA, 2012); Town of Deposit Tax Parcels (Delaware County Real Property, 2011)
[12] Repetitive Loss properties have received two flood insurance payouts of over $1000 within a ten-year period
[13]Severe Repetitive Loss properties have either a) received at least four flood insurance claims (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or (b)

HAZUS-MH results:

HAZUS-MH estimates that for a 1% annual chance event, 106 people may be displaced and 45 people may seek short-term sheltering, representing 13.2% and 5.6% of the Town's population, respectively. For the 0.2% annual chance event, it is estimated that 110 people may be displaced and 48 people may seek short-term sheltering, representing 13.7% and 6.0% percent of the Town's population, respectively[15].

As summarized in Table 9.7-3 below, there is $7,537,692 of total assessed property (structure and land) exposed to the 1% annual chance flood in the Town of Deposit. For the 0.2% annual chance event, it is estimated that there is $7,582,902 of total assessed property exposed in the Town.

Table 9.8-3. Estimated Assessed Value (Building and Land) Located in the 1% and 0.2% Annual Chance MRP Flood Boundaries

1% Annual Chance			0.2% Annual Chance		
Land AV	Building AV	Total AV	Land AV	Building AV	Total AV
$338,296	$7,199,396	$7,537,692	$349,256	$7,233,646	$7,582,902

Source: Real Property Data (July 2011) provided by Delaware County
Note: AV = Assessed Value

HAZUS-MH calculates the estimated potential damage to the general building stock inventory associated with the 1% and 0.2% annual chance flood events. HAZUS-MH estimates approximately $1.6 Million and nearly $2 Million of potential general building stock loss as a result of the 1% and 0.2% annual chance MRP events. Table 9.8-4 summarizes the potential loss estimates by occupancy class.

Table 9.8-4. Estimated Potential General Building Stock Loss (Structure and Contents) by the 1% and 0.2% Annual Chance MRP Flood Events

Total Buildings (All Occupancies)		Percentage of Total Building Value		Residential Buildings		Commercial Buildings		Industrial Buildings	
1% Annual Chance	0.2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Annual Chance	0.2% Annual Chance
$1,577,000	$1,975,000	1.8	2.3	$1,611,000	$1,906,000	$36,000	$55,000	$0	$0

Agriculture Buildings		Religious Buildings		Government Buildings		Education Buildings	
1% Annual Chance	0.2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Annual Chance	0.2% Annual Chance	1% Annual Chance	0.2% Annual Chance
$1,000	$1,000	$0	$0	$0	$0	$0	$0

Source: HAZUS-MH 2.0

The Town of Deposit does not have any critical facilities or utilities located within the 1% and 0.2% annual chance flood boundaries[16].

Ice Jam Flood Hazard

In the Town of Deposit, ice jams have occurred along the West Branch of the Delaware River and Oquaga Creek[17].

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received at least two separate claims payments (building payments only), with the cumulative amount exceeding the market value of the building.

[14] FEMA, 2012
[15] HAZUS-MH 2.0
[16] FEMA, 2011; HAZUS-MH 2.0
[17] Ice Engineering Research Group, 2011

Dam breach flood hazard:
A dam is included in the **National Inventory of Dams (NID)** if: 1) it is a "high" or "significant" hazard potential class dam. A high hazard classification indicates that the loss of at least one human life is likely if the dam fails, or, 2) it is a "low" hazard potential class dam that exceeds 25 feet in height and 15 acre-feet storage or, 3) it is a "low" hazard potential class dam that exceeds 50 acre-feet storage and 6 feet height[18]. Table 9.8-5 lists the dams in the Town of Deposit provided by the NID and the Planning Committee. The Cannonsville Dam is included in the NID as a "high" hazard class dam. Dams are displayed on the map in Section J (Figure 9.8-1).

Table 9.8-5. Dams in the Town of Deposit

Name	River	Type	Downstream Hazard
CANNONSVILLE DAM	WEST BRANCH DELAWARE RIVER	GRAVITY	HIGH
CANNONSVILLE DAM	WEST BRANCH DELAWARE	EARTH	HIGH

Source: Delaware County, 2006; Input from Planning Committee

Growth/Development Trends

The following table summarizes major residential/commercial development and major infrastructure development that are identified for the next five (5) years in the municipality. Refer to the map in section J of this annex which illustrates the hazard areas along with the location of potential new development.

New Development/Potential Development						
Property Name	Type (Residential or Commercial)	Number of Structures	Address	Block and Lot	Known Hazard Zone	Description/ Status
Delaware River Resorts	Residential	13 Lots	Airport Road	Block 367-4, Lot 1 – 13	Must comply with flood Plain Regulations	3 to 6 Lots have reportedly been sold.

[18] http://geo.usace.army.mil/pgis/f?p=397:1:0

C.) DOCUMENTED LOSSES TO NATURAL HAZARD EVENTS SPECIFIC TO THE TOWN

The table below presents only a history of events where documented losses were provided and is not a complete history of events for the Town. For details regarding the event history of the specific hazards, please refer to the appropriate hazard profiles in Section 5.4 of this Plan.

Dates of Event	Event Type	FEMA Declaration No.	County Designated?	Local Damage and Losses
April 2 – 4, 2005	Severe Storms and Flooding	DR-1589	Yes	Unidentified costs associated with hazard response and loss of utility services; workforce to repair damages to private facilities and structures, infrastructure; and materials and equipment employed to perform cleanup of debris.
June 26 – July 10, 2006	Severe Storms and Flooding	DR-1650	Yes	Unidentified costs associated with hazard response and loss of utility services; workforce to repair damages to public and private facilities and structures, infrastructure; and materials and equipment employed to perform cleanup of debris.
November 16 – 17, 2006	Severe Storms and Flooding	DR-1670	Yes	Unidentified costs associated with workforce to repair damages to infrastructure; and materials and equipment employed to perform cleanup and removal of debris.
July 23, 2008	Severe Storms and Flooding	N/A	N/A	Unidentified costs associated with workforce to repair damages to infrastructure; and materials and equipment employed to perform cleanup of debris.
December 11 – 31, 2008	Ice Storm, Severe Winter Storm	DR-1827 EM-3299	Yes	Unidentified costs associated with workforce, materials, and equipment employed to perform cleanup and maintenance of ice.
August 2009	Severe Storm (Rain)	N/A	N/A	Unidentified costs associated with workforce to repair damages to infrastructure; and materials and equipment employed to perform cleanup of debris.
Sept. 30, 2010	Severe Storms and Flooding	N/A	N/A	Unidentified costs associated with workforce to repair damages to infrastructure; and materials and equipment employed to perform cleanup of debris.
April 26 – May 8, 2011	Severe Storms, Flooding, Tornadoes, and Straight-line Winds	DR-1993	Yes	Unidentified costs (estimated damage assessment of April 26 – 28 event total $155,000.00) associated with loss of utility services; workforce to repair damages to private facilities and structures, and infrastructure; and materials and equipment employed to perform cleanup and removal of debris.

Dates of Event	Event Type	FEMA Declaration No.	County Designated?	Local Damage and Losses
May 20, 2011	Heavy Storms	N/A	N/A	Unidentified costs associated with workforce to restore utility services to Columbia and Silver Lake Roads; repair damages to infrastructure; and materials and equipment employed to perform cleanup and removal of debris.
August 26 – September 5, 2011	Hurricane Irene	DR-4020	Yes	Unidentified costs associated with workforce, materials, and equipment to perform cleanup and removal of debris before restoring utility services town wide; repair damages to private facilities and structures, and infrastructure.
September 7 – 11, 2011	Remnants of Tropical Storm Lee	DR-4031	Yes	Unidentified costs associated with hazard response and loss of utility services town wide; workforce to repair damages to private facilities and structures, and infrastructure; and materials and equipment employed to perform cleanup and removal of gravel and debris.

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]
1	Flood	1% Annual Chance MRP: $1,577,000 0.2% Annual Chance MRP: $1,975,000	Frequent	39	High [e]
1	Severe Storm	100-Year MRP: $0 500-Year MRP: $145,556 Annualized Loss: $460	Frequent	39	High [d]
1	Severe Winter Storm	1%: $568,360 5%: $2,841,800	Frequent	39	High [d]
3	Drought	Not available	Frequent	21	Medium
4	Earthquake	500-Year MRP: $111,087 2,500-Year MRP: $1,278,433 Annualized Loss: $1,117	Occasional	20	Low [e,f]
5	Extreme Temp	Not available	Frequent	18	Low
5	Infestation	Not available	Frequent	18	Low
5	Landslide	Not available	Occasional	18	Low
5	Wildfire	Not available	Frequent	18	Low

Notes: MRP = Mean Return Period; WUI - Wildland Urban Interface.

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

b. High = Total hazard priority risk ranking score of 39 and above
Medium = Total hazard priority risk ranking of 21-38
Low = Total hazard risk ranking 20 or below

c. The valuation of general building stock and loss estimates was based on the default general building stock database provided in HAZUS-MH 2.0 (RSMeans 2006).

d. Loss estimates are structural values only; does not include the value of contents.

e. Loss estimates represent both structure and contents.

f. The HAZUS-MH earthquake model results are reported by Census Tract. In some cases, there is more than one municipality per Census Tract. Therefore, these results include the Towns of Masonville and Tompkins, the Village of Deposit as well as a portion of Broome County.

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)	Do you have this? (Y or N)	Code Citation (Section, Paragraph, Page Number, Date of adoption)
Building Code	Yes	New York State Code
Zoning Ordinance	No	
Subdivision Ordinance	Yes	Adopted 8/8/2005
NFIP Flood Damage Prevention Ordinance	Yes	4/2012
Cumulative Substantial Damages	N	
Freeboard	Yes	2' in NYS Building Code and local Flood Damage Prevention Ordinance
Stormwater Management Plan / Ordinance	Y	Additional stormwater regulations in Delaware watershed as per 1997 Watershed Rules and Regulations
Comprehensive Plan / Master Plan / General Plan	Yes	9/2003
Capital Improvements Plan	No	
Site Plan Review Requirements	Yes	1/25/2008
Open Space Plan	No	
Stream Corridor Management or Protection Plan	Yes	West Branch Delaware River Stream Management Plan – 10/13/2009
Economic Development Plan	No	
Comprehensive Emergency Management Plan	Yes	Adopted Countywide CEMP 7/2004
Emergency Response Plan	No	
Post Disaster Recovery Plan	No	
Post Disaster Recovery Ordinance	No	
Real Estate Disclosure Requirement	No	
Highway Management Plan	Yes	Developed by Delaware County – 2010
COOP / COG Plan	No	
Mobile Home Regulations	Yes	
Other (Special Purpose Ordinances such as critical or sensitive areas)	No	

E.2) Administrative and Technical Capability

Staff/ Personnel Resources	Available (Y or N)	Department/ Agency/ Position
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Delaware County Planning Department Town Planning Advisory Service, Delaware County Soil and Water Conservation District
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Town Code Enforcement Officer; Town Highway Superintendent; Delaware County Department of Public Works; Delaware County Soil and Water Conservation District
Planners or engineers with an understanding of natural hazards	Yes	Delaware County Planning DepartmentTown Planning Advisory Service; Delaware County Department of Public Works; Delaware County Soil and Water Conservation District
NFIP Floodplain Administrator	Yes	Town Code Enforcement Officer
Surveyor(s)	No	
Personnel skilled or trained in "GIS" applications	Yes	Delaware County Planning Department Town Planning Advisory Service
Scientist familiar with natural hazards	Yes	Delaware County Soil and Water Conservation District
Emergency Manager	Yes	Delaware County Department of Emergency Services
Grant Writer(s)	Yes	Delaware County Planning DepartmentTown Planning Advisory Service
Staff with expertise or training in benefit/cost analysis	No	

E.3) Fiscal Capability

The table below identifies common funding mechanisms the Town could consider for the implementation of mitigation initiatives. For each funding mechanism, the table shows if it was used by the Town to fund projects in the past; what projects it was used for (if applicable); and possible limitations on it's use for future projects.

A full description of fiscal tools and funding mechanisms is provided in Volume I, Section 6 - Mitigation Strategy, of this plan. It is assumed that the Hazard Mitigation Grant Program and the Pre-Disaster Mitigation Grant program will be pursued since this plan is a prerequisite for these programs, so they are not listed.

Funding Mechanism	Used for past projects?	Limitations on future use?
Community Development Block Grants (CDBG)	No	Don't know (not used)
Capital Improvements Project	No	Don't know

Funding Mechanism	Used for past projects?	Limitations on future use?
Funding		
Authority to Levy Taxes for specific purposes	Yes	Yes (not used)
User fees for water, sewer, gas or electric service	No	No
Impact Fees for homebuyers or developers of new development/homes	No	No
Incur debt through general obligation bonds	Yes	No
Incur debt through special tax bonds	No	No
Incur debt through private activity bonds	No	No
Withhold public expenditures in hazard-prone areas	No	No
State mitigation grant programs (e.g. NYSDEC, NYSDOS)	Yes	No
Delaware County Stream Corridor Management Program	No	Limited territory in Delaware Watersheds
Federal (ACOE, NRCS, etc.)	Yes	No
Other	No	No

E.4) Community Classifications

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

N/A = Not applicable; NP = Not participating; U = Unavailable; TBD = To Be Determined.

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.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual: http://www.fema.gov/library/viewRecord.do?id=2434
- The Building Code Effectiveness Grading Schedule: http://www.isomitigation.com/bcegs/0000/bcegs0001.html
- The ISO Mitigation online ISO's Public Protection website: http://www.isomitigation.com/ppc/0000/ppc0001.html
- The National Weather Service Storm Ready website: http://www.weather.gov/stormready/howto.htm
- The National Firewise Communities website: http://firewise.org/

F.1: PAST MITIGATION ACTIVITY/EFFORTS

According to the Town of Deposit, the following have been identified as mitigation projects/activities that are ongoing or have been completed:

Property Protection:

- Built an elevated storage area at Town facilities on Elm Street
- Upgrades/floodproofing of Waste Water Treatment Plant

Prevention and Planning:

- Adopted West Branch Delaware River Stream Corridor Management Plan (2009)
    - The Town has adopted the West Branch Delaware River Stream Corridor Management Plan and appointed representatives to the Stream Corridor Management Program's Project Advisory Committee (PAC). Town FPA serves on the PAC's Floodplain Management Advisory Committee.

- Adopted a Flood Damage Prevention Ordinance and Delaware County FIS/FIRM updated under the MapMod program. FIS/FIRM effective 6/2012.

- Developed a Highway Management Plan; completed 2010

Training/Education/Outreach:

- Town Staff:
  - Town Supervisor:
    - *Serves on AHMP Update Steering Committee*
  - Code Enforcement Officer/Building Inspector:
    - *NFIP Basics workshop through DelCo Floodplain Management Adv. Committee/NYSDEC Floodplain Management (2/14/12)*
    - *Took Certified Floodplain Manager exam (5/12)*
  - Highway Department
    - *Superintendent and several staff members completed Post-Flood Stream Intervention through DelCo Stream Corridor Management Program*
- Public
  - Town-wide mailing to owners of property within the 1% annual chance (100-year) floodplain according to 8/2009 Preliminary DFIRM. Address list was generated based on parcel boundaries, not building footprints. Mailing advised property owners of the flood hazard and the availability of flood insurance.
  - 8/2009 Preliminary DFIRM data posted on Delaware County Community Online Mapping and Information Tool, which allows user to search for their property by address, name or tax parcel number.

F.2: HAZARD VULNERABILITIES IDENTIFIED

According to the Town of Deposit, the following hazards and problem areas have been identified within the community:

- Flooding issues downstream of Oquaga Creek/West Branch confluence
  - Low banks
  - Debris/gravel deposition issues from Oquaga Creek
  - Airport Road is very close to river; not much room to work
  - Regular impacts to:
    - Airport Road
    - Old Indian Country plant
    - New Indian Country plant
    - New England Wood Pellet plant
    - WWTP
    - Residences

- Roods Creek along Silver Lake Road:
  - Slope failures
  - Areas of excessive debris deposition

- County Route 19 along Butler Brook (now owned by the Town of Deposit)
  - Retaining wall needs replacement

- Excessive gravel buildup along the East and West Branches of Cold Spring Brook

- Cannonsville Impoundment:
    - Widely perceived as a potential hazard
        - Lack of local control over pool height
        - No warning system for breach/spill

- Town Hall located in floodplain
    - Sustained damage during 6/2006 flooding, along with DMV offices (in same building)

- Approximately one-half mile from the intersection of County Route 20 and Secrest Road an eroding streambank has impacted 75 feet along Secrest Road. Secrest Road at this location provides access to at least three homes. If the erosion is allowed to progress, DelCo Stream Corridor Management Program staff estimate that approximately $250,000 in road damages will be incurred and bank failure will render the road impassable.

- Columbia Lake Road, from the intersection with McCabe Hollow Road to the Millennium Pipeline crossing totaling approximately 0.7 miles
    - Poor or no drainage, 'blows out' every spring
    - Needs re-ditching
    - Needs to replace existing worn crosspipes and new ones need to be installed]

- Silver Lake Road at Roods Creek
    - Existing box culvert needs a 30 to 50 foot extension
    - Existing rock vanes have moved and need to be replaced
    - Road needs to be widened to allow for the placement of safety measures

- Hungry Hollow Road
    - Stream channel and floodplain need to be re-established
    - Road needs to be elevated, re-based, rebuilt and re-ditched

- Silver Lake Road and Roods Creek Road
    - Two existing box culverts are undersized

- Airport Road:
    - Only one access to 20 residences and two important businesses

F.3) PROPOSED HAZARD MITIGATION INITIATIVES

Note some of the identified mitigation initiatives in Table F are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities.

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals and Objectives Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority
Property/Infrastructure Protection										
1	**Address flooding issues along Columbia Lake Road:** • Approximately 0.7 miles from intersection with McCabe Hollow Road to the Millennium Pipeline crossing o Replace this section of road, including improved drainage systems									
		Existing	Flooding, Severe Storm	1-1 1-6 1-9	Town of Deposit Highway Department	Medium	$75,000-$100,000 Medium	FEMA HMA, other grant funding	Short DOF	High
2	**Address stream/highway infrastructure issues at Silver Lake Road/Roods Creek crossing:** • Existing box culvert needs a 30 to 50 foot extension • Existing rock vanes have moved and need to be replaced • Road needs to be widened to allow for the placement of safety measures									
		Existing	Flooding, Severe Storm, Severe Winter Storm	1-1 1-6 1-9	Town of Deposit Highway Department	High	250,000 High	FEMA HMA, other grant funding	Short DOF	High
3	**Address stream/highway infrastructure issues at Hungry Hollow Road:** • Stream channel and floodplain need to be re-established • Road needs to be elevated, re-based, rebuilt and re-ditched									
		Existing	Flooding, Severe Storm, Severe Winter Storm	1-1 1-6 1-9	Town of Deposit Highway Department	Medium	450,000 High	FEMA HMA, other grant funding	Long-term	Medium

4	**Replace retaining wall adjacent to County Route 19 along Butler Brook:** • Conceptual design created by Delaware Engineering									
		Existing	Flooding, Severe Storm, Earthquake	1-1 1-6 1-9	Town of Deposit Highway Department	High	500,000 High	FEMA HMA, other grant funding	Short DOF	High
5	**Address eroding streambank one-half mile from the intersection of County Route 20 and Secrest Road:** • The proposed project is to stabilize the bed and bank for the 75-feet-long reach to prevent further damage to public infrastructure. Stabilization will entail a 75'Lx14H'x3'D stacked and pinned rock wall, with a 75'Lx60'H slope of VRSS (vegetative reinforced slope stabilization) above the rock wall.									
		Existing	Flood, Severe Storm	1-1 1-6 1-9	DelCo Stream Management Program with support from Town of Deposit Highway Department	High	High	NRCS Emergency Watershed Protection, other grant funding or municipal budget	Ongoing	High
6	**Design and construct improvements to Airport Road to enhance traffic safety and emergency access**									
		Existing	Flood, Severe Storm	1-1 1-6 1-9 4-4	Town of Deposit Highway Department	High	High		DOF	High
7	**Retrofit structures located in hazard-prone areas to protect structures from future damage:** • Repetitive loss and severe repetitive loss properties as priority. • Phase 1: Identify appropriate candidates for retrofitting based on cost-effectiveness versus relocation. • Phase 2: Where retrofitting is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability.									
		Existing	Flood, Severe Storm, Earthquake	1-1 1-2 1-3 1-5	Town of Deposit with support from DCPD,	High	High	FEMA Mitigation Grant Programs;	Long-term DOF	Medium-High*

				1-6 2-1 2-2 3-2	NYSOEM, FEMA			CDBG; ICC; other grant funding as it becomes available		
8	**Acquire and demolish or relocate structures located in hazard-prone areas to protect structures from future damage:** • Repetitive loss and severe repetitive loss properties as priority. • Phase 1: Identify appropriate candidates for relocation based on cost-effectiveness versus retrofitting. • Phase 2: Where relocation is determined to be a viable option, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. • Phase 3: Where relocation will not be cost-beneficial but acquisition/demolition is a possibility, work with property owners toward implementation of that action based on available funding from FEMA and local match availability. Work with the owners of acquired properties to find appropriate housing within the community, if they desire.									
		Existing	Flood, Severe Storm	1-1 1-2 1-5 1-6 1-9 2-1 2-2 3-2	Town of Deposit with support from DCPD, NYSOEM, FEMA	High	High	FEMA Mitigation Grant Programs; CDBG; ICC; other grant funding as it becomes available	Long-term DOF	Medium-High*

Planning and Prevention

9	**Study flooding issues along Airport Road downstream of the Oquaga Creek/West Branch Delaware River confluence** • Seek funding to retain a consultant to study the flooding issues in this area and develop mitigation options									
		Existing	Flood, Severe Storm	1-1 1-3 1-6	Town of Deposit	Medium	Medium		Short DOF	High

National Flood Insurance Program Participation

10	**Maintain compliance with and good-standing in the NFIP including:** • Adoption and enforcement of floodplain management requirements o regulating all new and substantially improved construction in Special Hazard Flood Areas • Floodplain identification and mapping, • Flood insurance outreach to the community. • Further, continue to meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified as Initiatives 11 and 12 below.	New & Existing	Flood, Severe Storms	1-1 1-2 1-4 1-5 1-6 1-7 2-1 2-2 3-2 4-2	Town of Deposit (through Floodplain Administrator) with support from DCPD, SCMPr, NYSDEC, NYSOEM, FEMA	High	Low - Medium	Local Budget	Ongoing	High
11	Have designated NFIP Floodplain Administrator (FPA) maintain Certified Floodplain Manager status through the ASFPM	New & Existing	Flood, Severe Storms	1-1 1-4 1-5 1-9 2-1 2-3 4-1	Town of Deposit with support from SCMPr, NYSDEC, NYSOEM, FEMA	Medium	Low	Local Budget	Ongoing	High
12	Archive elevation certificates	NA	Flood, Severe Storm	1-1 1-4 1-5 2-2 4-1	NFIP Floodplain Administrator	Low	Low	Local Budget	On-going	High

Education and Outreach

13	**Training for municipal officials/staff and first responders:** • Work with existing federal, state and county programs to bring appropriate training to municipalities and first responders, including but not limited to; o NFIP floodplain development requirements and compliance o Disaster response ▪ Implementation of local emergency response procedures ▪ DelCo Comprehensive Emergency Management Plan/National Incident Management System o Post-Disaster Code Enforcement and damage assessments o Stream and floodplain function as it relates to flood damage prevention o Mitigation project development and administration o Public Assistance claims administration o New York Alert									
		NA	All Hazards	1-4 1-5 2-1 2-2 2-3 3-1 4-1 4-2	Town of Deposit with support from Delaware County, NYSDEC. NYSDOS, NYSOEM, FEMA	Low - Medium	Low - Medium	County and state programs; Municipal Budget; HMA programs with local or county match	Short	High
14	**Public education and outreach:** • Work with existing federal, state and county programs to bring appropriate public outreach to Town residents, especially those most vulnerable to natural disasters. Topics will include but not be limited to: o Disaster preparedness, including resident response to Cannonsville Dam emergencies o Hazard mitigation o Stream management for riparian landowners									
		NA	All Hazards	1-2 1-7 1-9 2-1 2-2 2-3 3-1 3-2 4-4	Town of Deposit with support from DCDES, SCMPr, DCPD, NYSDEC, NYSOEM, FEMA	Low - Medium	Low - Medium	County programs; Municipal Budget; HMA programs with local or county match	Short	High

AHMP implementation and maintenance

15	**Continue to support the implementation, monitoring, maintenance, and updating of this Plan, as defined in Section 7.0.** • Specifically, report the following information to the Delaware County Hazard Mitigation Coordinator on a regular basis: o Losses from disasters o Progress on mitigation initiatives o Changes in hazard vulnerabilities • To ensure a thorough reporting of the above, the Town will coordinate with: o Municipal departments o First Responders operating in the Town o Other organizations and agencies as appropriate									
		New & Existing	All Hazards	All	T. of Deposit with support from Delaware County, local emergency responders, NYSDEC, FEMA, NYSOEM	High	Low – High (for 5-year update)	Local Budget, possibly FEMA Mitigation Grant Funding for 5-year update	Ongoing	High
16	**Participate in local, county and/or state level projects and programs to develop improved structure and facility inventories and hazard datasets to support enhanced risk assessment efforts.** • Such programs may include developing a detailed inventory of critical facilities based upon FEMA's Comprehensive Data Management System (CDMS) which could be used for various planning and emergency management purposes including: o Support the performance of enhanced risk and vulnerability assessments for hazards of concern. o Support state, county and local planning efforts including mitigation (including updates to the State HMP), comprehensive emergency management, debris management, and land use. Improved structural and facility inventories could incorporate flood, wind and seismic-specific parameters (e.g. first floor elevations, roof types, structure types based on FEMA-154 "Rapid Visual Screening of Buildings for Potential Seismic Hazards" methodologies). It is recognized that these programs will need to be initiated and supported at the County and/or State level, and will require training, tools and funding provided at the county, state and/or federal level.									
		Existing	All Hazards	1-1 1-3 1-5 1-6 1-8 2-3 3-1 4-1	DCPD GIS, DCDES, SCMPr, FEMA, NYSOEM	Medium-High	Medium-High	Mitigation grant programs (PDM or HMGP) with local match	Longterm DOF	Medium

Emergency Services										
17	Explore the possibility of installing audible warning systems (sirens) for Cannonsville Dam emergencies	Existing	Flood		Town of Deposit with support from Village of Deposit and Delaware County				Longterm DOF	
18	Enhance/ maintain mutual aid agreements with neighboring communities for continuity of operations.	New & Existing	All Hazards	3-1 4-2	Municipality with support from Surrounding municipalities and County	Low	Low	Local Budget	Ongoing	High
19	Identify and develop agreements with entities that can provide support with FEMA/SOEM paperwork after disasters; qualified damage assessment personnel – Improve post-disaster capabilities – damage assessment; FEMA/SOEM paperwork compilation, submissions, record-keeping	NA	All Hazards	1-4 1-5 2-2 2-3 3-1 4-1 4-3	Municipality with support from County, NYSOEM, FEMA	Medium	Medium	Local budget	Short	Medium

Notes:
*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (NA) is inserted if this does not apply.
Costs:
Where actual project costs have been reasonably estimated:
Low = < $10,000
Medium = $10,000 to $100,000
High = > $100,000
Where actual project costs cannot reasonably be established at this time:
Low = Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium = Could budget for under existing work-plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High = Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:
Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:
Low = < $10,000
Medium = $10,000 to $100,000
High = > $100,000
Where numerical project benefits cannot reasonably be established at this time:
Low = Long term benefits of the project are difficult to quantify in the short term.
Medium = Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High = Project will have an immediate impact on the reduction of risk exposure to life and property.

Potential FEMA HMA Funding Sources:
PDM = Pre-Disaster Mitigation Grant Program
FMA = Flood Mitigation Assistance Grant Program
RFC = Repetitive Flood Claims Grant Program
SRL = Severe Repetitive Loss Grant Program
HMGP = Hazard Mitigation Grant Program

Timeline:
Short = 1 to 5 years. Long Term= 5 years or greater. OG = On-going program.
DOF = Depending on funding.

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 municipality 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
Drought	13, 15	14, 15	13, 14, 15	14, 15	13, 15, 16, 17, 18	15
Earthquake	13, 15, 16	14, 15, 16	13, 14, 15	14, 15	13, 15, 16, 17, 18	15
Flooding	6, 10, 11, 12, 15, 16	8, 9, 10, 14, 15, 16	8, 9, 10, 11, 13, 14, 15	2, 3, 5, 9, 13, 14, 15	13, 15, 16, 17, 18	1, 2, 3, 4, 5, 7, 15
Infestation	13, 15	14, 15	13, 14, 15	14, 15	13, 15, 16, 17, 18	15
Landslide	13, 15, 16	14, 15, 16	13, 14, 15	14, 15	13, 15, 16, 17, 18	15
Severe Storm	6, 10, 11, 12, 15, 16	8, 9, 10, 14, 15, 16	8, 9, 10, 11, 13, 14, 15	2, 3, 5, 9, 13, 14, 15	13, 15, 16, 17, 18	1, 2, 3, 4, 5, 7, 15
Severe Winter Storm	13, 15, 16	14, 15, 16	13, 14, 15	14, 15	13, 15, 16, 17, 18	15
Wildfire	13, 15, 16	14, 15, 16	13, 14, 15	14, 15	13, 15, 16, 17, 18	15

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)
1	3	M	M	Y	Y	N	H
2	3	H	H	Y	Y	N	H
3	3	M	H	N	Y	N	M
4	3	H	H	Y	Y	N	H
5	3	H	H	Y	Y	N	H
6	3	M	M	Y	Y	N	H
7	4	H	H	Y	Y	N	H
8	8	H	H	Y	Y	N	M
9	8	H	H	Y	Y	N	M
10	10	H	M	Y	N	Y	H
11	7	M	L	Y	N	Y	H
12	5	L	L	Y	N	Y	H
13	8	L	L	Y	Y	N	H
14	9	L	L	Y	Y	N	H
15	18	H	H	Y	Y	N	H
16	8	M	M	Y	Y	N	M
17	2	L	L	Y	N	Y	H
18	7	M	M	Y	N	Y	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 based on grant funding), however it is recognized that addressing repetitive and severe repetitive loss properties is considered a high priority by FEMA and SOEM (as expressed in the State HMP), and thus shall be considered a High priority for all participants in the 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: Yes

Prioritization of initiatives was based on parameters other than stated above: Not applicable.

I.) FUTURE NEEDS TO BETTER UNDERSTAND RISK/VULNERABILITY

A more detailed flood loss analysis could be conducted on a structural level (versus the Census block analysis conducted for the 2012 AHMP update). The location of each building, details regarding the building (see additional data needed below) and the assessed or fair market value could be included in HAZUS-MH. The FEMA DFIRM boundaries, FEMA Flood Insurance Study detailed studies, base flood elevations and available Light Detection and Ranging (LiDAR) data or digital elevation models (DEM) could be used to generate a more accurate flood depth grid and then integrated into the HAZUS model. The flood depth-damage functions could be updated using the U.S. Army Corps of Engineer damage functions for residential building stock to better correlate HAZUS-MH results with FEMA benefit-cost analysis models. HAZUS-MH would then estimate more accurate potential losses per structure.

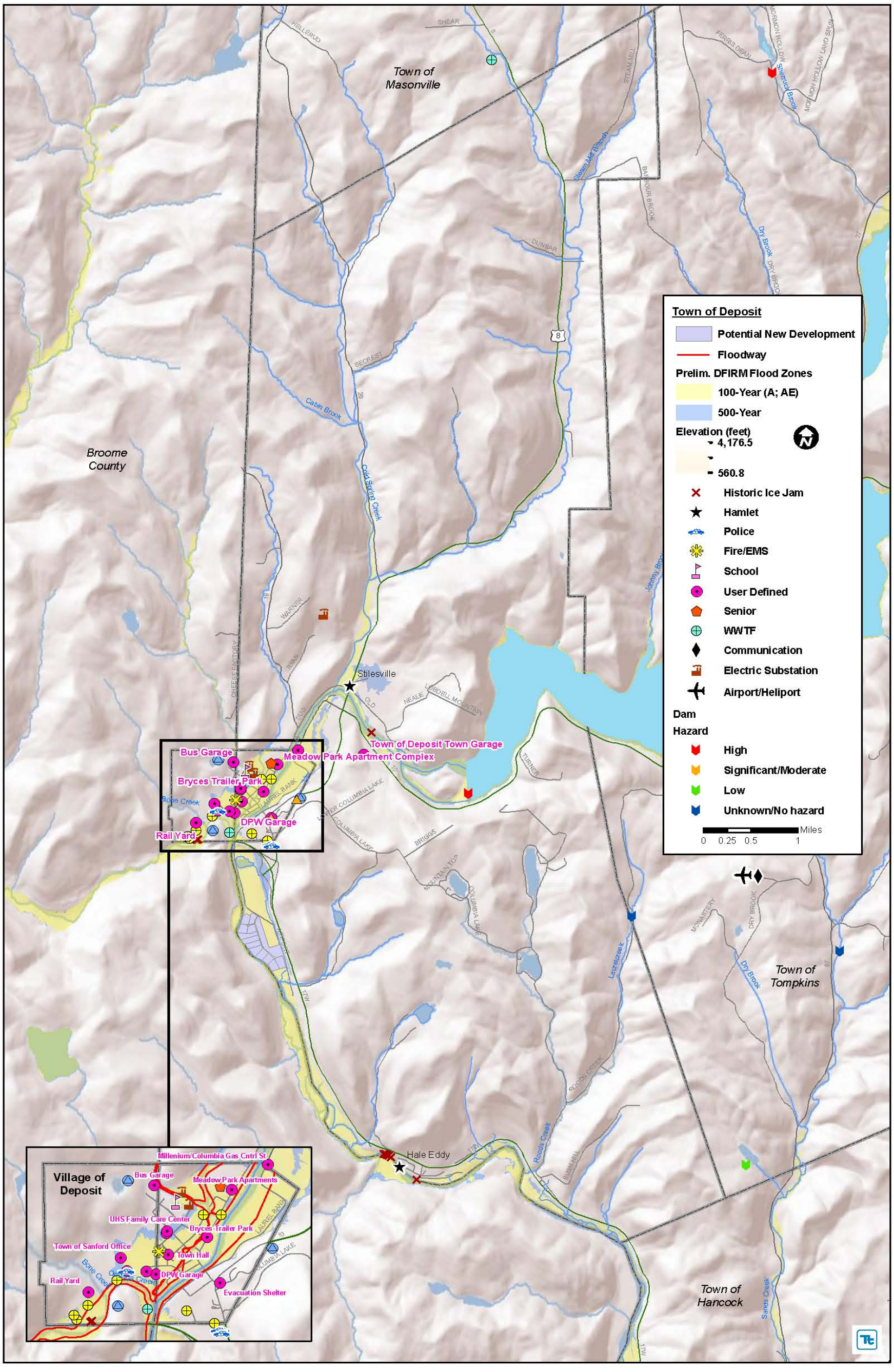
Additional data needed to perform the analysis described above:

1. Building footprint in GIS
2. Specific building information – first-floor elevation (elevation certificates), number of stories, foundation type, basement, square footage, occupancy type, year built, type of construction etc.
3. Assessed or fair market value of structure

J.) HAZARD AREA EXTENT AND LOCATION

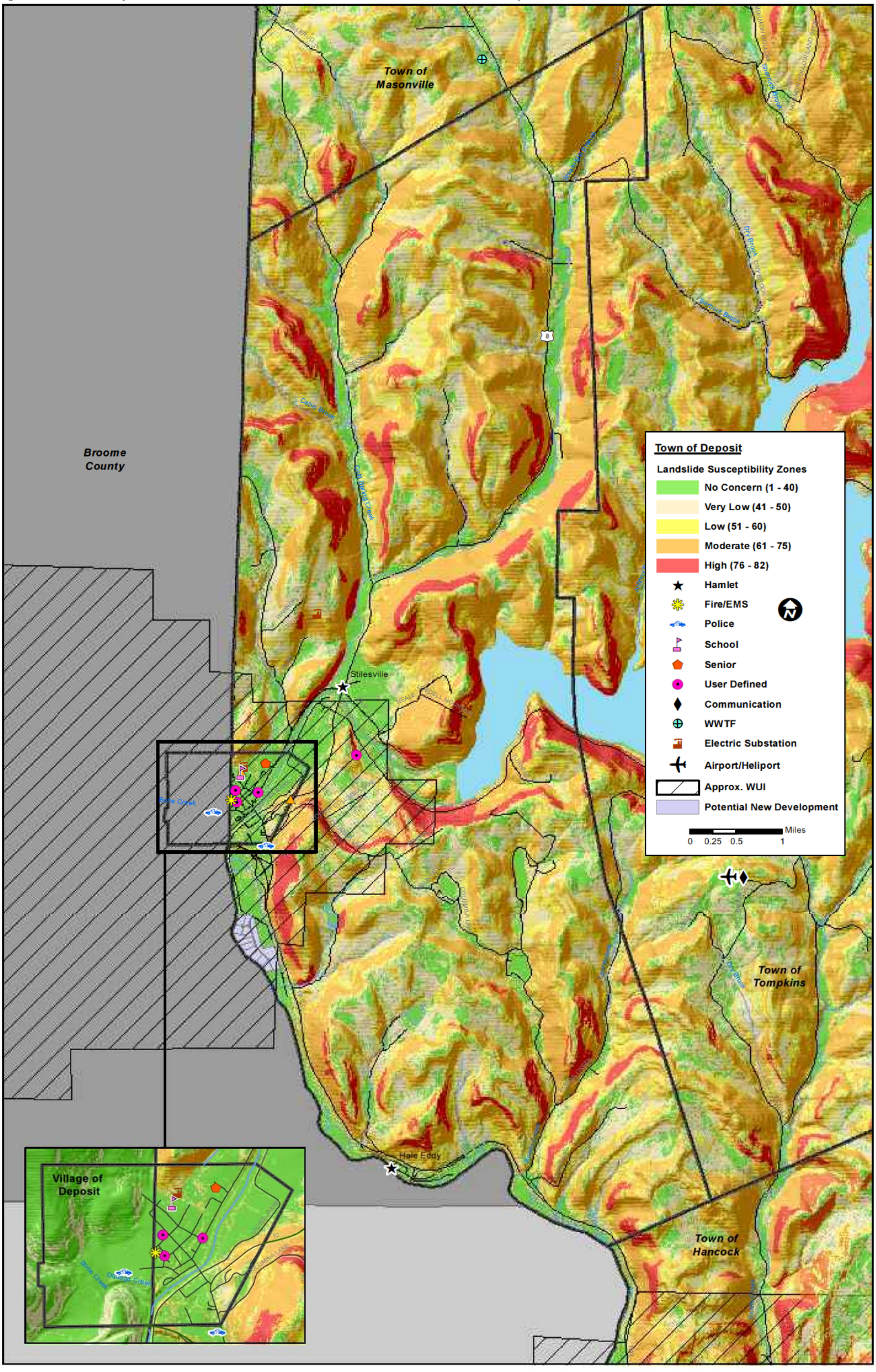
A hazard area extent and location map has been generated and is provided below for the Town of Deposit to illustrate the probable areas impacted within the Town of Deposit. This map is based on the best available data at the time of the preparation of this Plan, and is considered to be adequate for planning 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 Deposit has significant exposure. The County maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.

Figure 9.8-1. Town of Deposit
Flood Hazard Area, Critical Facilities and Potential New Development



Sources: FEMA, 2011; Delaware County 2011; National Inventory of Dams 2011
Notes: The entire municipality is vulnerable to the following hazards: drought, earthquake, extreme temperature, infestation, severe storm, and severe winter storm. Please note preliminary DFIRMs were used to generate this figure and are not considered regulatory at this time.

Figure 9.8 -2. Town of Deposit Wildland-Urban Interface, Landslide Hazard Areas and Potential New Development



Sources: GeoMAC, 2012; Tetra Tech, 2012; Delaware County, 2011