

## 9.1 DELAWARE COUNTY

This section presents the jurisdictional annex for Delaware County.

### A.) HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact	Alternate Point of Contact
Delaware County Planning Department PO Box 367 Page Avenue Delhi, NY 13753 607-746-2944 <a href="mailto:pln@co.delaware.ny.us">pln@co.delaware.ny.us</a>	Delaware County Department of Emergency Services 280 Phoebe Lane Suite 3 Delhi, New York 13753 (607) 746-9600 <a href="mailto:richard.bell@co.delaware.ny.us">richard.bell@co.delaware.ny.us</a>

### B.) COUNTY PROFILE

Please refer to Section 4, Volume 1 of this Plan for details on Delaware County's population, location, climate, history, growth, and development.

### C.) DOCUMENTED LOSSES TO NATURAL HAZARD EVENTS SPECIFIC TO THE COUNTY

Please refer to the Previous Occurrences and Losses section of the appropriate hazard profiles in Section 5.4 of this Plan in Section 5.4, Volume 1.

### D.) NATURAL HAZARD RISK/VULNERABILITY RISK RANKING

Rank #	Hazard Type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard <sup>a,c</sup>	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking <sup>b</sup>
1	Severe Storm	100-Year MRP: \$116,096 500-Year MRP: \$3,078,800 Annualized Loss: \$43,500	Frequent	39	High <sup>d</sup>
1	Severe Winter Storm	1% of GBS: \$40,048,500 5% of GBS: \$200,242,500	Frequent	39	High <sup>d</sup>
2	Flood	1% Annual Chance: \$317,101,000 0.2% Annual Chance: \$376,855,000	Frequent	36	High <sup>e</sup>
3	Landslide	Not available	Frequent	30	High
4	Wildfire	Not available	Frequent	27	Medium
5	Drought	Not available	Frequent	21	Medium
6	Earthquake	500-Year MRP: \$3,041,871 2,500-Year MRP: \$33,152,786 Annualized Loss: \$39,531	Occasional	20	Low <sup>e,f</sup>
7	Extreme Temp	Not available	Frequent	18	Low
7	Infestation	Not available	Frequent	18	Low

- Notes: MRP = Mean Return Period; WUI - Wildland Urban Interface.
- Building damage ratio estimates based on FEMA 386-2 (August 2001)
  - 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.

#### **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	Y	Regulated at local and state levels.
Zoning Ordinance	NA	Regulated at local level.
Subdivision Ordinance	NA	Regulated at local level.
County Planning Board review	Y	General Municipal Law 239
NFIP Flood Damage Prevention Ordinance	NA	Regulated at local level. All Delaware County jurisdictions participate in the NFIP and have adopted a Flood Damage Prevention Ordinance.
Cumulative Substantial Damages	NA	
Freeboard	NA	
Stormwater Management Plan / Ordinance	Y	Areas of Delaware County within the New York City water supply Watershed are subject to additional stormwater regulations
Comprehensive Plan / Master Plan / General Plan	N	In progress
Capital Improvements Plan	Y	21 <sup>st</sup> Century Bridge Plan
Site Plan Review Requirements	NA	Regulated at local level
Open Space Plan	NA	New York State Plan
Stream Corridor Management or Protection Plan	Y	East and West Branch Delaware River Stream Corridor Management Plans
Economic Development Plan	Y	For NYC Watershed – STE Regional Economic Goals
Comprehensive Emergency Management Plan	Y	2004
Emergency Response Plan	N	
Post Disaster Recovery Plan	N	
Post Disaster Recovery Ordinance	N	
Real Estate Disclosure Requirement	N	
Highway Management Plan	Y	County Highway Management Plan
COOP / COG Plan	N	
Mobile Home Regulations	NA	Regulated at local level
Other (Special Purpose Ordinances such as critical or sensitive areas)	N	

**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	Y	Delaware County DPW Engineers; Delaware County Planning Department; Delaware County Soil and Water Conservation District
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Y	Delaware County DPW Engineers
Planners or engineers with an understanding of natural hazards	Y	Delaware County DPW Engineers; Delaware County Planning Department; Delaware County Soil and Water Conservation District
NFIP Floodplain Administrator	NA	N/A; NFIP Floodplain Administrators are local assignments
Surveyor(s)	Y	Contracted. A number of local surveyors have received training in the preparation of NFIP Elevation Certificates.
Personnel skilled or trained in "GIS" applications	Y	Delaware County Planning Department
Scientist familiar with natural hazards	Y	Delaware County Soil and Water Conservation District, CLE
Emergency Manager	Y	Delaware County Department of Emergency Services
Grant Writer(s)	Y	Delaware County Planning Department
Staff with expertise or training in benefit/cost analysis	N	

**E.3) Community Classifications**

Program	Classification	Date Classified
Community Rating System (CRS)	N/A	N/A – County supports local participation
Building Code Effectiveness Grading Schedule (BCEGS)	N/A	N/A
Public Protection	N/A	N/A
NOAA Storm Ready	County	12/10/2008
NFPA Firewise	NP	N/A

N/A = Not applicable. NP = Not participating. - = 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.

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) COMPLETED MITIGATION ACTIVITY/EFFORTS**

Delaware County departments have identified the following mitigation activities or efforts that have been completed or are ongoing within the county, including those that were identified in the 2006 HMP:

**Delaware County Board of Supervisors***Completed*

- The Board of Supervisors adopted design standards for bridges. The standards for hydraulics and hydrology are 50 year with two feet of freeboard or 100 year gravity flow. All replacement structures are designed to these standards.
  - Design standards include provisions for scour protection; many replacement bridges built to these standards
- The County has adopted the Delaware County Action Plan (DCAP) that outlines an integrated approach to watershed management.

**Delaware County Department of Public Works:***Completed*

- Flood mitigation projects have included properly sized structures and removal of berms to return the floodplain to its proper use.
- Programs were developed and implemented to coordinate maintenance and mitigation activities to reduce risk to public infrastructure from severe winter storms (including ice storms).
- Elk Brook slope failure in Hancock: \$1.2 million project to move road rather than stabilize slope

*Ongoing*

- The County DPW works closely with Soil and Water to properly construct stream channels.

**Delaware County Planning Department:***Completed*

- Three flood buy-out programs were instituted (1996, 2006, 2011). [Note: the 2011 buyout is ongoing]
- Existing land use was identified or updated in major stream corridors and floodplains in Delaware County.
- Municipalities (25 of 29) have adopted Comprehensive Plans to guide sustainable development. These are updated regularly.
- A local capability needs assessment was conducted in order to identify the feasibility and funding sources for mitigation activities.
- GIS data was updated, including planimetrics (buildings, roads, etc.), topography, floodplains (including revisions), building footprints and inundation mapping after actual events. [Note: this is both completed and ongoing]
- Communities were assisted with the adoption of new NFIP mapping and floodplain ordinances.
- Municipalities received assistance with local adoption of the 2006 AHMP.
- Along with the Delaware County Soil and Water Conservation District, the Planning Department facilitated municipal adoption of a Stream Corridor Management Plan (SCMP) in 16 towns and 6 villages in Delaware County. SCMP adoption is a key component of municipal participation in the Delaware County Stream Corridor Management Program (SCMP). These communities also signed an MOU with the Delaware County Soil and Water Conservation District for SCMP

implementation. The SCMPs contain recommendations that are relevant to the goals and strategies of the HMP, including recommendations dealing with flood damage prevention and floodplain management. These areas are an increasingly important focus for the SCMP.

- A county-wide mailing was sent to owners of property within the 1% annual chance (100-year) floodplain according to 8/2009 Preliminary DFIRM. The mailing advised property owners of the flood hazard and the availability of flood insurance.
- The 8/2009 Preliminary DFIRM data was posted on the Delaware County Community Online Mapping and Information Tool, which allows users to search for their property by address, name or tax parcel number

#### *Ongoing*

- Land use reviews are conducted to determine if proposed projects are in compliance with local floodplain regulations.
- The Town Planning Advisory Service (TPAS) assists towns and villages in the County with ongoing, professional planning services.
- Hazard mitigation is formalized as a factor in community development planning activities, including business development and long-range planning.
- The Hazard Mitigation Steering Committee is being integrated with the efforts of the Delaware County Emergency Planning Committee.
- A centralized library is being created and maintained for all documents used and required for the mitigation plan.
- The Department continues to work in towns and villages with territory in the NYC drinking water supply watershed to encourage meaningful participation in the SCMP. (Please see the Delaware County Soil and Water Conservation District heading in this section for more information.)
- DCPD helps coordinate a Floodplain Management Advisory Committee (FMAC), composed of local floodplain administrators, reps from county departments, and reps from state and regional agencies. This group meets 2-3 times annually. Meetings generally have a continuing education/training component, and also give FPAs an opportunity to communicate their needs to supporting agencies. Through the FMAC, DCPD led a study group to help four local FPAs to prepare for the Certified Floodplain Manager's exam; all passed the exam and are now CFMs.

#### **Delaware County Department of Emergency Services:**

#### *Completed*

- Outreach to vulnerable populations and the general public was improved through NYAlert, e-mail lists, and RSS feeds which are subsequently posted by commercial media.
- Emergency responders throughout Delaware County were equipped with town-specific mapping services (such as Pictometry) so they can easily obtain maps and topographic data when responding to an emergency related event.
- A reference to this Hazard Mitigation Plan was made in the Delaware County Comprehensive Emergency Management plan Risk Reduction Section.
- A multi-jurisdictional, geographically based telephone Emergency Notification System was implemented.
- 360 degree night visibility vests with reflective strips were purchased.
- Many critical emergency response facilities have been equipped with adequate backup power.
- A strong, effective system of mutual aid has been developed.

#### *Ongoing*

- A Facebook page is maintained, which is heavily used during disaster events.

- Meetings are conducted with DCDES, NYCDEP, USACE and NYSEMO to discuss dam safety issues, emergency plans and planning, and inspection coordination.
- Emergency services preparedness and response is strengthened by linking emergency services with hazard mitigation programs.
- A safety publication is being designed that contains important information regarding personal preparedness and disaster loss prevention.
- The use of NOAA's All Hazards radios is promoted for early warning and post event information.
- Fire Departments participate in NYSDEC's 50/50 match grant program to get wildland fire equipment.

### **Delaware County Soil and Water Conservation District (DCSWCD):**

#### Stream Corridor Management Program (SCMPr)

##### *Completed:*

- DCSWCD along with NYC Department of Environmental Protection (NYC DEP) and Delaware County Planning Department developed two comprehensive Stream Corridor Management Plans (SCMPs) for the West Branch Delaware River (2006) and the East Branch Delaware River (2007).
  - The SCMPs have been adopted at the municipal level by 16 towns and 6 villages within the NYC drinking water supply Watershed. These communities have agreed to implement the recommendations of the SCMPs and appoint representatives to the SCMPr Project Advisory Committee (PAC).
- Since Delaware County's initial HMP was completed in 2005, the SCMPr has completed numerous stream corridor management construction projects with benefits to flood hazard mitigation. These are described in the Jurisdictional Annexes for the municipalities where each project is located. SCMPr construction projects can also be viewed on the following websites:
  - <http://www.catskillstreams.org/projectmaps/westbranchdelawariver/>
  - <http://www.catskillstreams.org/projectmaps/eastbranchdelawariver/>
- "Post-Flood Emergency Stream Intervention" training was developed and delivered to municipal public works departments and contractors who work in stream corridors. This training helps the individuals who will be working in the stream directly after a flood event understand where they should and shouldn't intervene, and what dimensions they should create across the channel and the floodplain in order to prevent further damage.

##### *Ongoing:*

- SCMPr has staff at the DelCo Emergency Operations Center during flood events to help interpret stream gage and other data to make emergency management decisions.
- SCMPr collects data on flood heights during and after flood events and correlates this information with stream gage data to help guide emergency response efforts.
- SCMPr supports sub-committees of the PAC that deal with specific areas of SCMP implementation. The activities of the Floodplain Management Advisory Committee, Highway Infrastructure Advisory Committee, and Education and Outreach Advisory Committee all further the goals of this HMP, especially in the area of flood hazard mitigation.

### **Delaware County Department of Social Services:**

##### *Completed:*

- Office for the Aging conducted an inventory of generators, supplies, etc. across the county.



- Emergency plans addressing vulnerable populations (incl. foster children and those receiving at-home medical care) have been developed to address many hazard/disaster events.
- Specific emergency plans have been developed, and are on file, to keep sex offenders on probation out of general population shelters.
- Public outreach has been improved, including efforts to remind people to refill medications before an event.
- Free air conditioning units were distributed to vulnerable populations, which is further supported by HEAP funding; electric fans were provided to those with inadequate electrical service to support air conditioner loads.

#### **Other Regional and County Agencies and Stakeholders:**

- In the area of infestation mitigation, both Cornell Cooperative Extension and the Catskill Regional Invasive Species Project (CRISP) have done a great deal of work as far as public outreach, technical assistance, training, and inventory. CRISP has either already completed or plans to complete ash tree inventories in Margaretville, Walton and Sidney.
- Sidney High School has implemented and maintains a successful stream gaging/monitoring program integrated with NOAA/NWS and USGS, which is serving as a model for similar programs throughout the County and region.

#### **F.2) HAZARD VULNERABILITIES IDENTIFIED**

Delaware County departments have identified the following hazards and problem areas within the County:

##### **General / Multi-Hazard:**

- The County has not fully maximized its ability to reach all at-risk populations (elderly, young and their caregivers; people with medical conditions) with appropriate outreach.
- Delaware County relies heavily on Red Cross (based out of Broome County) for many of its sheltering needs (except for the special-needs population), but this dependence poses a problem when Broome County has its own disaster.
  - Equipment and facility needs are an issue, but the biggest problem facing shelters is staffing in light of decreased Red Cross capacity.
- It is difficult to get people to pay attention to outreach materials (such as those indicating the availability of transportation services) before AND after a disaster.
- Managing high volumes of donations is difficult.
- Utility companies (e.g. NYSEG) are short-staffed, and the County cannot clear downed power lines.
- Low population areas, typical throughout the County, are a low priority for utility service restoration.
- Prolonged power outages to businesses and farms are an issue.

##### **Extreme Heat / Drought:**

- Other than County offices, no official “cooling stations” are set up due to a general lack of demand.
- Climate change trends/predictions indicate that the probability of prolonged drought in the northeast could increase.

##### **Wildfire:**



- There are large areas of unmanaged open space county-wide, including NYCDEP/NYS lands and abandoned farmland.
- NYC easements/acquisitions are not designed to minimize wildfire risks
  - “Out” parcels are not large enough to create defensible space
  - There are management restrictions on eased parcels
  - Potential emergency access issues exist
- NYCDEP is not equipped/trained to fight wildfires.
- There is potential for “hazard cascade”- wildfire leading to land instability/landslide.
- A short wildfire season makes it hard to justify training/equipment.
- The low incidence of wildfire occurrence results in a lack of preparation and awareness.
- The potential for die-offs of some tree species from infestation (e.g.. ash from Emerald Ash Borer) further increases fuel loading.
- Fireworks increase the potential for wildfire.
- Climate change trends/predictions indicate that the probability of prolonged drought in the northeast could increase.
- It is difficult for fire departments to appropriate money for wildland fire equipment when their greater (perceived) need is for regular fire equipment.
- NYSDEC provides a 16-hour fire suppression class (not mandatory), but it is insufficient for dealing with major wildfires.
- Even among those firefighters that have received wildfire training, there are concerns that they would not be able to save themselves if caught in a major fire..
- Fire departments do not possess the heavy equipment required for a major wildfire, and although the County possesses such equipment, its operators are not trained for wildland firefighting.

#### **Infestation:**

- The County lacks a proper understanding of utility companies’ management plans specific to pests for vulnerable trees in close proximity to infrastructure.
- There is a potential for hazard cascade: dead/dying trees are more susceptible to wind, ice and wildfire.
- Infestation complicates post-disaster debris management.

#### **Landslide/Land Subsidence:**

- Delaware County DPW believes that this hazard has the potential to be the single largest financial impact to infrastructure in the future, however it is extremely expensive to address vulnerable areas.
- The topography in Delaware County (narrow valleys with roads pinched between stream and valley walls) increases vulnerability:
  - along stream channels (loss of toe from erosion leads to slope failure)
  - at locations of deep-seated failures
- It is very difficult to get funding to address landslide and land subsidence issues. Federal and NYCDEP funding programs do not prioritize them.
- Retaining walls are heavily depended upon, but they have a relatively short useful life.
- Businesses in Fraser (Town of Delhi) are threatened by a slope failure on Platner Brook that began in 2006.
- Seven (7) major slope failures exist along County Route 17.
- The following mud slides and slope failures are currently identified:
  - County Route 17 – Horton, Red Rose and Tweedie Roads at the State Route 17 bin wall
  - County Route 3 – Middletown
  - County Route 67
  - others identified in Jurisdictional Annexes

**Severe Winter Storm / Extreme Cold:**

- Ice storms are one of the biggest threats to Delaware County with regard to overwhelming existing capabilities.
  - The County is not prepared to handle the coordination of significant out-of-county resources.
  - The County is not prepared to shelter a significant number of people for extended periods of time (could be 4-6 weeks).
    - Schools are only a short-term sheltering solution during the school year.
  - Emergency services dispatching capabilities will likely be severely impacted or rendered useless by an ice storm until the new communications system is up and running.
  - Ice storms often result in secondary injuries, stemming from:
    - improper use of chainsaws
    - electrocution
    - falling trees and limbs

**Severe Storm / Flood:**

- There is an inconsistent enforcement of floodplain regulations by local floodplain administrators.
  - In some cases, NFIP requirements are not fully understood
  - The floodplain administrator can suffer from the emotional and social consequences of proper enforcement, especially during flood recovery
- Roadway flooding is a consistent problem for the following County Routes:
  - 33 – Kortright at bridges 33-3 and 33-1
  - 9 – between State Route 23 and bridge 9-1
  - 7 – Colchester at bridge 7-7
  - 1 – at Little Dingle Hill Road
  - 35 – Sidney at structure 35-2
  - 41 – Roxbury at bridge 41-2 and the culvert at Scott Green Road
  - 18 – at Fitch’s Bridge and Stillwater
  - 27 – at Cummings Road in Masonville
  - 16 – above Doug Hall Road
  - 36 – at structure 36-4
- Many stream reaches in villages are channelized by stone walls on both sides. These reaches are vulnerable to ice and debris blockages, as well as wall failure.
- NYCDEP is cutting funding for stream gages.
- There is a lack of real-time flood information.
- There is a lack of emergency notification at dams.

### 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.

**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.

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
<b>Prevention and Planning</b>										
1	<b>Provide support for ongoing compliance and enhanced participation in the National Flood Insurance Program (NFIP)</b>									
		Both	Flood, Severe Storm	1-1 1-2 1-4 1-5 1-6 1-7	DCPD; supported by other Delaware County departments, DCSWCD, NYSDEC, NYSOEM, FEMA Region II, ISO	High	Low - Medium	County Budget (incl. TPAS)	On-going	High
2	<b>Continue to promote and assist municipalities with adopting regulatory standards to decrease vulnerability to natural hazards:</b>									
		New and Existing	Flood; Severe Storm; Landslide/Land Subsidence; Wildfire; Infestation	1-1 1-8 3-1	DCPD with support from municipal NFIP FPA, FEMA Region II, NYSDEC	Medium	Low - Medium	County Budget (incl. TPAS)	On-going	High
3	Continue to support and facilitate FEMA floodplain study/remapping and Risk MAP programs	N/A	Flood; Severe Storm; Landslide/Land Subsidence; Wildfire; Earthquake	1-1 1-3 1-6 1-9	DCPD; as initiated by FEMA, NYSOEM and NYSDEC	Medium	Low - Medium	County Budget (incl. TPAS)	On-going	High
4	<b>Continue to explore regional/multi-municipality floodplain administration to provide for better trained and more impartial FPAs:</b>									

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
		New and Existing	Flood; Severe Storm	1-1 1-4 2-3	DelCo Floodplain Management Advisory Committee with support from municipal NFIP FPAs, Delaware County, DCSWCD, NYSDEC	Medium	Low	Operating budgets, grant funding	On-going	High
5	<p><b>Continue to provide support for ongoing and future mitigation planning efforts at the municipal and regional level:</b>                      Mitigation-related plans include but are not limited to:</p> <ul style="list-style-type: none"> <li>Highway Management Plan updates and maintenance</li> <li>NYSDOS Long-Term Community Recovery Plans</li> <li>Local Flood Hazard Mitigation Analysis</li> <li>Stream Corridor/Watershed Management Plans</li> </ul> <p>County support shall include:</p> <ul style="list-style-type: none"> <li>Providing data and information as available</li> <li>Facilitating and/or attending planning meetings</li> <li>Providing review and input to the planning process</li> <li>Assisting with the review of draft plan documents</li> <li>Promoting public and stakeholder outreach and involvement in the planning process</li> <li>Coordination of existing plans and programs (especially the Highway Management Plans/Jurisdictional Annexes) with new/updated planning and prevention efforts</li> </ul>									
		Both	All Hazards	1-1 1-8 3-1	DCPD TPAS; other Delaware County Departments; DCSWCD; supported by NYSDEC, FEMA, NYSOEM, NYSDOS	High	Medium	County Budget (incl. TPAS); Federal and State Grant Programs	On-going	High
6	Continue to pursue a more stringent site plan review for properties adjacent to NYCDEP / NYSDEC land.	New	Flood; Severe Storm; Wildfire; Landslide/Land Subsidence	1-1 2-2 3-1 3-2	DCPD supporting local municipalities	High	Low-Medium	County Budget (incl. TPAS)	On-going	High
<p><b>Integrate/coordinate the findings and recommendations of this AHMP with other county and local planning and regulatory mechanisms.</b></p>										



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
7	Complete and implement the Delaware County Comprehensive Plan, including reference to and incorporation of this AHMP.	N/A	All Hazards	All Goals and Objectives	DC Planning Board / DCPD	Medium	Low-Medium	County budget, NYSDOS, Grants	On-going (25% complete)	High
8	Work with county towns and villages to incorporate hazard vulnerabilities and mitigation strategies detailed in Jurisdictional Annex into updates of Comprehensive / Master Plans and local land use laws	N/A	All Hazards	All Goals and Objectives	DCPD through TPAS	Medium	Low-Medium	Municipal and County budgets (incl. TPAS), Grants	On-going	Medium
9	Incorporate vulnerabilities and mitigation strategies identified in the AHMP and the Jurisdictional Annexes into municipal and county-level Capital Improvement Plans	N/A	All Hazards	All Goals and Objectives	DCPD	Medium	Low-Medium	Municipal and County budgets	On-going	Medium

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
10	Incorporate vulnerabilities and mitigation strategies related to flooding identified in the AHMP and the Jurisdictional Annexes into updates to the East and West Branch Delaware River Stream Corridor Management Plans and the development of the Delaware County Stream Corridor Management Program	N/A	Flood; Severe Storm	All Goals and Objectives	DCPD and DCSWCD	Medium	Low-Medium	SCMP	On-going	Medium
11	Incorporate vulnerabilities and mitigation strategies identified in the AHMP and the Jurisdictional Annexes into the Delaware County Comprehensive Emergency Management Plan as the Risk Reduction annex	N/A	All Hazards	All Goals and Objectives	DCDES	Medium	Low-Medium	County budget	On-going	Medium
12	Incorporate vulnerabilities and mitigation strategies identified in the AHMP and the Jurisdictional Annexes into the Delaware County Soil and Water Conservation District Farm Emergency Management Plan	N/A	Flood; Severe Storm; Drought; Infestation	All Goals and Objectives	DCSWCD	Medium	Low-Medium	DCSWCD	On-going	Medium



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
13	Incorporate vulnerabilities and mitigation strategies related to highway infrastructure identified in the AHMP and the Jurisdictional Annexes into updates of town Highway Management Plans	N/A	Flood; Severe Storm; Severe Winter Storm; Landslide	All Goals and Objectives	DCPD and DCDPW	Medium	Low-Medium	County budget, grant funding	On-going	Medium
14	Incorporate this AHMP into updates to the Delaware County Action Plan and the deliberations of the DCAP Core Group	N/A	All Hazards	All Goals and Objectives	DCAP Core Group	Medium	Low-Medium	Operating budgets	On-going	Medium
15	<b>Continue to provide representation on and support of local and regional flood and watershed committees/commissions:</b> Including but not limited to:									
		N/A	Flood; Severe Storm	1-9 3-1 3-2	DCPD, other county departments, DCSWD	Medium - High	Low - Medium	Operating budgets	On-going	High
16	<b>Join and promote regional / local participation in the NFPA “Firewise” program to better manage wildfire risk:</b> • The Firewise program will further support public education and outreach for personal wildfire mitigation and preparedness.									
		N/A	Wildfire	1-1 1-2 1-3 1-4 1-5 1-6 1-7 1-8 1-9	DCDES	Medium	Low - Medium	Existing budget (incl. TPAS)	Short term 1 year for review, longer to integrate	High



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
				4-1						
17	<p><b>Continue County-level participation, and encourage and support further local participation, in the NOAA “Storm Ready” program:</b></p> <ul style="list-style-type: none"> <li>• Provide information on the “Storm Ready” program to towns and villages.</li> <li>• Facilitate public outreach and awareness programs.</li> <li>• Support community storm risk reduction activities as appropriate:                             <ul style="list-style-type: none"> <li>○ Specific actions addressed by "Storm Ready" participation include;                                     <ul style="list-style-type: none"> <li>▪ Establishing a 24 hour Warning Point</li> <li>▪ Increase number of ways EOC receives NWS warnings</li> <li>▪ increase number of ways to disseminate warnings</li> <li>▪ monitoring hydro-meteorological data</li> <li>▪ providing annual weather safety talks</li> <li>▪ train weather spotters</li> <li>▪ create a formal hazardous weather plan</li> <li>▪ host annual visits by NWS to communities, etc.</li> </ul> </li> </ul> </li> </ul>									
		N/A	Flood; Severe Storm; Severe Winter Storm	1-1 1-2 2-1 2-2	DCDES; support from NWS, NYSOEM, FEMA, DCSWCD, NOAA	Medium	Low - Medium	County Budget	Short term	Medium

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	
18	<p><b>Convene a Dam Safety working group of the DC AHMP Steering Committee to accomplish the following activities:</b></p> <ul style="list-style-type: none"> <li>• Coordinate with NYSDEC to get copies of all prevailing reports, plans, etc. on dams in the County (incl. Emergency Response Plans, Inspection Reports, Engineering and Construction Plans).</li> <li>• Develop and implement a protocol for how such data will be compiled, archived, maintained, and made available (incl. during emergency situations).</li> <li>• Develop and implement a public education outreach program to inform dam owners of their maintenance and inspection responsibilities.</li> <li>• Continue to meet and work with NYCDEP, USACE and NYSEMO to address dam safety issues, emergency plans and planning, and inspection coordination.</li> <li>• Continue to update the county dam inventory, including review of pictometry (possible internship project)</li> <li>• Develop a municipal data collection protocol to support municipalities (working with local fire departments) in performing an inventory of their ponds, lakes and dams (addresses both dam failure and fire/wildfire hazard).</li> <li>• Develop and distribute custom Dam Safety Manuals for the county, with data specific for each town and village.</li> <li>• Update the Dam Inspection Report and develop an inspection strategy with timelines for all High and Moderate Hazard dams that are past due.</li> <li>• Develop a comprehensive and prioritized list of dam repair, upgrade and retrofit activities, including timelines and completion strategies (funding sources, grant application, permitting, etc.).</li> <li>• Conduct dam-break analysis and risk assessment of all high and moderate hazard dams, identifying areas of inundation and human and property losses.</li> <li>• Investigate and pursue potential funding sources to support the above activities.</li> <li>• Delaware County Board of Supervisors should recognize and appoint the members of this group</li> </ul>										
		Existing	Flood (dam failure); Wildfire (through identification of water sources for fire-fighting)	1-1 3-1	DC Dam Safety Working Group of the HMP Steering Committee, working with NYCDEP, NYSDEC, USACE and NYSEMO	High	Medium	County Budget, Dam Safety Fund, CWC, EMPG	Short term 1-year to develop Dam Safety working group and initiate initial activities identified above	High	
19	Evaluate worst-case drought scenarios within Delaware County for possible further action.	Existing	Drought	1-1 3-1	DCDES	Medium	Medium	County Budget	Short term (3 Years)	Medium	
20	Update GIS mapping for existing land use in major stream corridors and floodplains.	N/A	All Hazards	1-4 1-5 1-6 2-3	DCPD - GIS	Medium	Medium	TBD	Short term (1 year)	High	



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
21	Design a visual representation of the hazard areas for each hazard overlain by existing or planned development projects to determine how the hazards will affect future development in the jurisdictions and could impact losses and emergency needs.	Both	All Hazards	1-4 1-5 1-6	DCPD - GIS	Medium	Medium	TBD	Short term (1 year)	High
22	Install HAZUS-MH software, obtain appropriate training for staff, archive and maintain HAZUS-MH data and projects developed during the development of this plan and update.	N/A	All Hazards	2-3 3-1	DCPD-GIS	Medium	Low - Medium	Local funding	Short term (1 year)	Low
23	Incorporate business considerations, critical facilities information, and other data into a GIS project to prioritize landslide and slope failure projects.	Existing	Landslide	1-2 3-2	DCPD - GIS	Medium	Medium	County Budgets	Short term DOF	Low
24	Support county and local participation in the Small Business Administration (SBA) Pre-Disaster Mitigation Loan Program.	N/A	All Hazards	1-8	DED; Chambers of Commerce; DCPD	High	Low	Federal, local funding	Short term (3 years)	Medium

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
<b>Property Protection</b>										
25	<b>Continue to promote, support and develop applications for Hazard Mitigation Assistance (HMA) grant funding to mitigate floodprone structures and infrastructure:</b>									
	<ul style="list-style-type: none"> <li>Continue to develop inventory of at-risk buildings and infrastructure (including those owned by Delaware County) and develop mitigation priorities</li> <li>Conduct targeted outreach to RL/SRL properties and other important mitigation targets</li> <li>Conduct analysis to understand cost/benefit of mitigation projects, including socio-economic and community character impacts</li> <li>Assist with the development of municipal applications</li> <li>Develop applications at the county level as appropriate</li> <li>Locate and apply for appropriate match funds</li> </ul>									
		Existing	Flood; Severe Storm	1-1 1-2 2-1	DCPD with support from municipal NFIP FPAs, other county departments, DCSWCD, FEMA Region II, NYSDEC and NYSOEM	High	Medium	County Budget (incl. TPAS)	On-going	High
26	Relocate the County DPW main shop and outside garages (Delhi Campus) to a facility outside of the floodplain.	Existing	Flood; Severe Storm	1-1 1-4	DCDPW with support from other county departments	High	High	FEMA Mitigation Grant Programs, other grant programs	Short term DOF	High
27	Relocate the County DPW Sidney Center and Walton facilities to a combined facility outside of the floodplain	Existing	Flood; Severe Storm	1-1 1-4	DCDPW with support from other county departments	High	High	FEMA Mitigation Grant Programs, other grant programs	On-going	High

## SECTION 9.1: DELAWARE COUNTY

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
28	Continue efforts to appropriate funding and implement mitigation projects as identified in county departmental Capital Programs (e.g. DPW).	Existing	All Hazards	1-1 4-1	County Departments	High	High	County Budgets, HMGP	On-going	High
29	Work with NYCDEP and NYSDEC to identify and implement critical vegetation management activities, including fire breaks, fuel-thinning, and conduct of new burn policies.	N/A	Wildfire	1-1 3-1 4-3	DCDES; NYCDEP; NYSDEC	High	Medium	County Budgets	Short term DOF	Low
30	Work with utility companies and owners/operators of critical facilities to identify important utility lines (esp. those serving critical facilities) and identify ways to ensure their safety during hazard events	Existing	Severe Storm; Severe Winter Storm	1-1 2-3 3-1 3-2	DCDES; utilities (NYSEG, DCEC); owners/operators of critical facilities	High	Medium (identification of projects); High (implementation)	County Budgets to identify; Implementation TBD	Short term	Medium
31	Contact utility companies to determine if they have, and adhere to, vegetation management plans specific to infestation.	N/A	Infestation	1-1 1-5 3-1 3-2	DCDPW; DCDES; utility companies (NYSEG, DCEC)	Low-Medium	Low	County Budgets	Short term	Medium
32	Consider road abandonment for non-essential roads in high-hazard areas (spec. vulnerable to flood and landslide).	Existing	Flood; Severe Storm; Landslide	1-4	DCDPW	Medium - High	Medium	County Budgets	Short term	High



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
33	Explore partnerships with impacted businesses to help cover costs of stream bank stabilization projects.	N/A	Flood; Severe Storm	1-1 3-1 3-2	DCDPW, DCSWCD working with businesses in impacted areas	Medium	Medium	FEMA; NYCDEP; grants	Long term	Medium
34	Continue to work with USDA-NRCS to manage and implement the Emergency Watershed Protection (EWP) program to mitigate damage infrastructure.	Existing	Flood; Severe Storm; Landslide	1-1 31 3-2	DCSWCD, communities	High	Medium	NRCS EWP, NYCDEP match, and local match	On-going	High
<b>Education and Outreach</b>										
35	<b>Facilitate training for municipal officials/staff and first responders:</b>									
	<ul style="list-style-type: none"> <li>• Work with existing federal, state and county programs to bring appropriate training to municipalities and first responders, including but not limited to; <ul style="list-style-type: none"> <li>○ NFIP floodplain development requirements and compliance</li> <li>○ Disaster response <ul style="list-style-type: none"> <li>▪ Implementation of local emergency response procedures</li> <li>▪ DelCo Comprehensive Emergency Management Plan/National Incident Management System</li> </ul> </li> <li>○ Post-Disaster Code Enforcement and damage assessments</li> <li>○ Stream and floodplain function as it relates to flood damage prevention</li> <li>○ Mitigation project development and administration including FEMA Benefit-Costs Analysis (BCA)</li> <li>○ Public Assistance claims administration</li> <li>○ NY-Alert</li> </ul> </li> </ul>									
		N/A	Flood; Severe Storm	1-1 4-3	Delaware County Departments DCSWCD with support from NYSDEC, NYSOEM, FEMA, NYSSFMA	Medium	Low - Medium	County Budget (incl. TPAS)	On-going	High

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	
36	<b>Improve public understanding of disaster preparedness and what to do during an emergency:</b>										
	<ul style="list-style-type: none"> <li>• personal preparedness</li> <li>• available notification/warning services</li> <li>• incoming and outgoing evacuation routes</li> <li>• locations of shelters and tips for staying at home</li> <li>• travel advisories and safe travel tips</li> <li>• hazards of unheated houses</li> <li>• the use of portable and standby generators</li> <li>• fire hazards associated with space heaters</li> <li>• protecting plumbing during a winter storm</li> <li>• coping with power failures.</li> </ul>										
		N/A	All Hazards	1-5 2-1 2-2 2-3 4-4	DCDES, working with local EM, police, fire and LEPCs	Medium	Low - Medium	County and local budgets, NYSEMO	On-going	High	
37	Develop a program to promote retrofits and safety precautions for mobile homes for flood and severe wind events.	Existing	Flood; Severe Storms	1-2 1-3 2-1 2-2 2-3	DCDES with support from municipal NFIP FPAs, other county departments, DCSWCD, NYSDEC, FEMA Region II	Medium	Low	Federal, state, local	TBD	Medium	
38	Leverage existing regional and local meetings and media outlets (local websites, the County Emergency Management webpage, newsletters, email "blasts", mailings) to promote awareness and understanding of personal preparedness and mitigation activities.	N/A	All Hazards	2-1 3-1 3-2	DCDES, working with municipalities and LEPCs	Medium	Medium	County budget	On-going	High	
39	Advise municipalities to maintain links to the County Emergency Management and AHMP websites on their websites.	N/A	All Hazards	2-1 2-2 2-3 4-2 4-4	DCDES, working with municipalities and LEPCs	Medium	Low	Municipal budgets	Short term (1 year)	Medium	



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
40	Improve collaboration with local radio stations and public access cable channels for emergency broadcasts.	N/A	All Hazards	2-1 2-2 2-3	DCDES	Medium	Low	County budget	Short term (1 year)	Medium
41	Expand information on emergency services for special needs populations to cover all of Delaware County.	N/A	All Hazards	4-1 4-3	DCDES	Medium	Low	Local	On-going (10% complete)	High
42	In conjunction with the Emergency Planning Committee, design an emergency preparedness and response presentation for the Delaware County Fair.	N/A	All Hazards	2-1 2-2 2-3	DCDES	High	Low - Medium	Local	Short term (1 year)	Medium
43	Increase awareness of precautions against zoonotic diseases, including rabies, ringworm, water-borne pathogens, Lyme disease, anthrax, and West Nile virus.	N/A	Infestation	2-1 2-2 2-3	DCPHD	Medium	Medium	TBD	On-going	Medium
<b>Natural Resource Protection</b>										
44	Research new, cost-effective ways of stabilizing failing soil slopes (e.g. use of soil nails).	N/A	Landslide; Severe Storm; Flood (erosion)	1-1 1-3	DCDPW with support of DCSWCD	Medium	Medium	County Funding / NYCDEP	Short term	Medium
45	Work with utilities to maintain/augment programs to keep trees from threatening lives, property, and public infrastructure during storm events, including tree trimming and removal programs.	Existing	Severe Storm, Severe Winter Storms	3-1 4-2	DCDPW; DCDES, utilities (NYSEG, DCEC)	High	Medium - High	Current funding sources	On-going	Medium

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
<b>Emergency Services</b>										
46	<b>Develop and implement a county-wide flood monitoring and warning system:</b>									
	<ul style="list-style-type: none"> <li>Inventory existing resources in the County <ul style="list-style-type: none"> <li>Stream gages</li> <li>Rain gages</li> <li>Snow pillows</li> </ul> </li> <li>Identify gaps in sensor coverage</li> <li>Develop a funding proposal to cover additional sensors, other hardware, data transfer and storage, software, and administration</li> </ul>									
		N/A	Flood; Severe Storm	1-1 1-8 2-3 3-2 4-1	DCPD, DCDES, DCDPW, DCSWCD with support from NYSOEM, NWS, USGS	High	High	NYSOEM, grant funding	Short term	High
47	Install automated warning systems for roadways that flood on a frequent basis.	N/A	Flood; Severe Storm	1-1 4-4	DCDPW	Medium	Medium	TBD	Short term DOF	Medium
48	Leverage experiences and "lessons learned" from recent wildfires in Ulster, Rockland and Suffolk Counties to improve wildland firefighting capabilities.	N/A	Wildfire	1-1 1-9	DCDES working with NYS counties and NYSDEC	High	Medium	County Funding	Short term	Medium
49	<b>Improve emergency communications throughout the county through the following activities:</b>									
	<ul style="list-style-type: none"> <li>Contact legislators to petition the FCC to improve cell phone coverage throughout the County.</li> <li>Continue to implement the countywide 400-MHz emergency communication system upgrade project, with provisions for co-locating cell equipment.</li> <li>Continue to identify and offer available county and local property for locating new cell facilities.</li> </ul>									
		N/A	All Hazards	1-1 1-4 4-3	DCDEC, working with County Legislators, cellular providers, municipalities	Medium - High	Low (contact and follow up with legislators); Medium – High (equipment upgrades)	Existing Budgets	Short term	High

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
50	Resolve the essential/non-essential personnel issue with respect to reimbursement of county employees during emergency activations (of the EOC).	N/A	All Hazards	1-1 4-1 4-2	Budget Officer of the Delaware County Board of Supervisors	Medium	Low	Existing Budgets	Short term (1 year)	Medium
51	Enhance public education and outreach on existing emergency alert and notification systems (e.g. NYAlert, Cell Blasting)	N/A	All Hazards	1-1 2-1 2-2 2-3	DCDES	Medium	Low	Existing Budgets	Short term	Medium
52	Continue to improve the function and use of the emergency notification system for county staff.	N/A	All Hazards	2-3	Delaware County Board of Supervisors and DCDES	Medium	Low	County Budget	Short term	Medium
53	Maintain, enhance and update mutual aid agreements with the surrounding communities. DCDES has revised the Joint Fire and EMS Mutual Aid Plan in 2011 and are working on surrounding counties.	N/A	Flood; Severe Storm; Severe Winter Storm; Wildfire	1-6 1-8 3-1	DCDES	High	Low to Medium	County Budget	Short term (3 years)	Low
54	Establish (identify and train) a volunteer donations (water, food, clothes, supplies) coordinator.	N/A	All Hazards	2-1 2-2 2-3	Emergency Management Committee (incl. DCDES)	High	Medium	TBD	Long term	Medium

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
55	Establish a central reporting center with trained coordinator to better manage and deploy volunteer resources	N/A	All Hazards	2-1 2-2 2-3	Emergency Management Committee (incl. DCDES)	High	Medium	TBD	Long term	Medium
56	Put together a working group to better describe vulnerabilities and identify training needs	N/A	All Hazards	2-1 2-2 2-3	DCDES working with local police, fire, EMS, LEPCs	Medium	Medium	County and local budgets	Long term	Medium
57	Monitor high-risk areas during heavy rain events	N/A	Flood; Severe Storm	1-1 2-2 4-3	DCDES working with local police, fire, EMS, LEPCs	Medium	Medium	County and local budgets	Short term	High
58	Plan alternate routes for emergency vehicles around known high-risk hazard areas	N/A	Flood; Severe Storm; Severe Winter Storm; Landslide	1-1 4-4	DCDES working with local police, fire, EMS, LEPCs	Medium	Medium	County and local budgets	Short term	High
59	Pursue a County-level sheltering plan regarding the staffing and implementation of general population shelters.	N/A	All Hazards	1-1 2-3	DCDES and DCPH, working with ARC	Medium	Medium	County Budget	Short term	High
60	Minimize the disruption and cost of storm events by maintaining to the extent possible the ability of public works personnel to maintain the safe flow of traffic over streets and highways through DC specific activities such as purchasing additional equipment, securing funds for additional personnel during winter storm events, and purchasing additional road salt.	N/A	Severe Winter Storms	1-1 4-2	County and local public works	High	High	Existing Funds	On-going	Medium

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
61	Work with social support agencies, homeowners associations and the general public to develop and implement appropriate monitoring systems focused on vulnerable populations during extreme cold events.	N/A	Severe Winter Storm	3-1 3-2	DCDSS	High	Low	Local	Short term (2 years)	High
62	Enhance emergency services to increase the efficiency of wildfire response and recovery activities. NYSDEC equipment grants and county/state wildfire suppression courses support this.	N/A	Wildfire	4-1 4-2 4-3 4-4	DCDES, working with NYCDEP	High	Medium - High	County and State funding, NYSDEC	On-going	Medium
63	Identify deficiencies in equipment and training and ensure that local fire departments are adequately equipped to respond safely and effectively to fires. This is ongoing and enhancements have been made to training; AFG equipment purchases; training center enhancements.	Both	Wildfire	4-2 4-3	County and Local Fire Depts.	Medium	Low - Medium	State	Short term (1 year)	Medium
64	Identify deficiencies in equipment and training and ensure that local emergency responders are adequately equipped to respond safely and effectively to a dam failure.	N/A	Flood (dam failure)	4-3 4-4	DCDES	Medium	Low	DC, Dam Safety Fund	Short term (1 year)	High

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
65	Pursue warning systems at NYCDEP dams (esp. Pepacton, Cannonsville)	N/A	Flood (dam failure)	1-1 1-4	DCDES	High	Medium - High	HMA grants, NYCDEP	Short term	High
66	Develop evacuation plans, routes, policies, and procedures for the full range of contingencies and geographic areas of the jurisdictions. This has been done at least partially through the CEMP, but needs further broadcasting.	N/A	All Hazards	4-4	DCDES lead, with support from DCPD, NYCDEP; local fire and police, NYSDOT	High	Medium - High	Federal, state, County, local	Short term (3 years)	High
67	Assign roles and pursue training for County staff related to emergency response hierarchy and structure.	N/A	All Hazards	4-2	DCDES	Medium	Low	County	On-going (1 year 25% complete)	High
68	Support funding applications to purchase backup generators and other redundant utilities for nursing homes and other critical assets that require such emergency power sources. (e.g. Humane Society – needs larger generator – this is part of the Community Animal Response Team program supporting human sheltering).	N/A	All Hazards	4-1 4-2 4-3 4-4	DCDES working with municipalities and owners/operators of critical facilities	High	Medium - High	Federal, State	Long term (5 years)	Medium
69	Increase communication and cooperation to improve relationship between County and local public works and	N/A	All Hazards	4-2 4-4	DCDES, DCDPW working with local DPW	Medium	Low (est. \$5k annually)	TBD	On-going	Medium

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
	highway departments so emergency response is more efficient and coordinated.									
70	Promote the use of NOAA's All Hazards radios for early warning and post event information.	N/A	All Hazards	2-1 2-2 2-3	DCDES	Low	Low	Grants	Short term (1 year)	Medium
71	Maintain County debris clearance plan.	N/A	All Hazards	1-1	DCDES and DCDPW	Medium	Low - Medium	County Budget	On-going	Low
72	Support the Delaware County Human Needs Task Force	N/A	All Hazards	1-8	DCDSS with support of DCPH	Low	Low	County, local	On-going	Low
73	Identify areas and specific residents who would need evacuation assistance, including residents who lack transportation, and develop evacuation assistance plans.	N/A	All Hazards	1-1 4-3	DCDES	High	Low (Quotes received)	Local	Short term (2 years 2014 – 25% complete)	Low
74	Purchase/upgrade the following equipment: bucket truck, road barriers, flashing beacon lights, work zone signs, PPE vests, flagger signs, hand tools.	N/A	All Hazards	4-3	DCDPW	High	High	County and local budgets primarily	On-going to stay current with technology (75% complete)	Low
75	Continue to design replacement bridges to the new standards.	Existing	Flood; Severe Storm	1-4 4-1	DCDPW	High	High	FEMA Mitigation Grant Programs; County budget for local share	On-going	High
76	Replace undersized structures with properly designed structures.	Existing	Flood; Severe Storm	1-4 4-1	DCDPW	High	High	FEMA Mitigation Grant Programs; County budget for local share	On-going	High

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
77	Retrofit highways that are currently in the floodplain and have sustained repetitive losses due to flooding, as identified in the DPW Capital Program.	Existing	Flood; Severe Storm	1-1 4-4	DCDPW	High	High	Federal (incl. HMA grant programs), State, County, Local	On-going with revised plan every 5 years	High
78	Assist municipalities with the identification of emergency routes so that they may prioritize the Improvement of the drainage and base of those roads	N/A	All Hazards	1-1 1-5 4-4	DCDPW working with local DPWs	Medium	Medium	Fed, State, Local	On-going	Medium
<b>AHMP Implementation and Maintenance</b>										
79	Maintain a centralized library of all documents used and required for this AHMP and its implementation and maintenance.	N/A	All Hazards	All Goals and Objectives	DPCPD	Medium	Medium	Local	1 year	Low
80	Lead and support the implementation, monitoring, maintenance, and updating of this AHMP, as defined in Section 7.0	N/A	All Hazards	All Goals and Objectives	DCPD and County Mitigation Planning Coordinator working along with DC AHMP Steering Committee, participating municipalities, NYSOEM, FEMA Region II	Medium	Low – High (for 5-year update)	County and Local Budgets, FEMA Mitigation Grant Funding for 5-year update	On-going	High

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.





## 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	5, 7, 8, 9, 11, 12, 19, 20, 21, 22, 24, 79, 80	28, 79, 80	36, 38, 39, 40, 41, 42, 79, 80	79, 80	49, 50, 51, 52, 54, 55, 56, 59, 66, 67, 68, 69, 70, 71, 72, 73, 74, 78, 79, 80	
Earthquake	3, 5, 7, 8, 9, 11, 20, 21, 22, 24, 79, 80	28, 79, 80	36, 38, 39, 40, 41, 42, 79, 80	79, 80	49, 50, 51, 52, 54, 55, 56, 59, 66, 67, 68, 69, 70, 71, 72, 73, 74, 78, 79, 80	
Flooding	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 20, 21, 22, 24, 79, 80	25, 26, 27, 28, 32, 33, 34, 79, 80	35, 36, 37, 38, 39, 40, 41, 42, 79, 80	44, 79, 80	46, 47, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80	26, 27, 76, 77
Infestation	2, 5, 7, 8, 9, 11, 12, 20, 21, 22, 24, 79, 80	28, 31, 79, 80	36, 38, 39, 40, 41, 42, 43, 79, 80	79, 80	49, 50, 51, 52, 54, 55, 56, 59, 66, 67, 68, 69, 70, 71, 72, 73, 74, 78, 79, 80	
Landslide	2, 3, 5, 6, 7, 8, 9, 11, 13, 15, 20, 21, 22, 23, 24, 79, 80	28, 32, 34, 79, 80	36, 38, 39, 40, 41, 42, 79, 80	44, 79, 80	49, 50, 51, 52, 54, 55, 56, 58, 59, 66, 67, 68, 69, 70, 71, 72, 73, 74, 79, 80	
Severe Storm	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 20, 21, 22, 24, 79, 80	25, 26, 27, 28, 30, 32, 33, 34, 79, 80	35, 36, 37, 38, 39, 40, 41, 42, 79, 80	44, 45, 79, 80	46, 47, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80	26, 27, 76, 77
Severe Winter Storm	5, 7, 8, 9, 11, 13, 15, 17, 20, 21, 22, 24, 79, 80	28, 30, 79, 80	36, 38, 39, 40, 41, 42, 79, 80	45, 79, 80	49, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 66, 67, 68, 69, 70, 71, 72, 73, 74, 78, 79, 80	
Wildfire	2, 3, 5, 6, 7, 8, 9, 11, 16, 18, 20, 21, 22, 24, 79, 80	28, 29, 79, 80	36, 38, 39, 40, 41, 42, 79, 80	79, 80	48, 49, 50, 51, 52, 53, 54, 55, 56, 59, 62, 63, 66, 67, 68, 69, 70, 71, 72, 73,	

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
					74, 78, 79, 80	

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	6	H	L	Y	N	Y	H
2	3	M	M	Y	N	Y	H
3	5	M	M	Y	N	Y	H
4	3	M	L	Y	N	Y	H
5	3	H	M	Y	N	Y	H
6	4	H	M	Y	N	Y	H
7	18	M	M	Y	N	Y	H
8	18	M	M	Y	N	Y	M
9	18	M	M	Y	N	Y	M
10	18	M	M	Y	Y	Y	M
11	18	M	M	Y	N	Y	M
12	18	M	M	Y	Y	Y	M
13	18	M	M	Y	N	Y	M
14	18	M	M	Y	N	Y	M
15	3	H	M	Y	N	Y	H
16	10	M	M	Y	N	Y	H
17	4	M	M	Y	N	Y	M
18	2	H	M	Y	Y	N	H
19	2	M	M	Y	N	Y	M
20	4	M	M	Y	Y	N	H
21	3	M	M	Y	Y	N	H
22	2	M	M	Y	N	Y	L
23	2	M	M	Y	N	Y	L
24	1	H	L	Y	Y	N	M
25	3	H	M	Y	N	Y	H
26	2	H	H	Y	Y	N	H
27	2	H	H	Y	Y	N	H
28	2	H	H	Y	N	Y	H
29	3	H	M	Y	N	Y	L
30	4	H	M	Y	N	Y	M
31	4	L	L	Y	N	Y	M
32	1	M	M	Y	N	Y	H
33	3	M	M	Y	Y	N	M

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34	3	H	M	Y	Y	Y	H
35	2	M	M	Y	N	Y	H
36	5	M	L	Y	Y	Y	H
37	5	M	L	Y	Y	N	M
38	3	M	M	Y	N	Y	H
39	5	M	L	Y	N	Y	M
40	3	M	L	Y	N	Y	M
41	2	M	L	Y	N	Y	H
42	3	H	M	Y	N	Y	M
43	3	M	M	Y	N	Y	M
44	2	M	M	Y	Y	Y	M
45	2	H	H	Y	N	Y	M
46	5	H	H	Y	Y	N	H
47	2	M	M	Y	N	Y	M
48	2	H	M	Y	N	Y	M
49	3	M	L	Y	N	Y	H
50	3	M	L	Y	N	Y	M
51	4	M	L	Y	N	Y	M
52	1	M	L	Y	N	Y	M
53	3	H	L	Y	N	Y	L
54	3	H	M	Y	Y	N	M
55	3	H	M	Y	Y	N	M
56	3	M	M	Y	N	Y	M
57	3	M	M	Y	N	Y	H
58	2	M	M	Y	N	Y	H
59	2	M	M	Y	N	Y	H
60	2	H	H	Y	N	Y	M
61	2	H	L	Y	N	Y	H
62	4	H	M	Y	Y	Y	M
63	2	M	M	Y	Y	N	M
64	2	M	L	Y	Y	N	H
65	2	H	M	Y	Y	N	H
66	1	H	H	Y	Y	N	H
67	1	M	L	Y	N	Y	H
68	4	H	H	Y	Y	N	M
69	2	M	L	Y	N	Y	M
70	3	L	L	Y	Y	N	M
71	1	M	M	Y	N	Y	L
72	1	L	L	Y	N	Y	L
73	2	H	L	Y	N	Y	L
74	1	H	H	Y	N	Y	L
75	2	H	H	Y	Y	N	H
76	2	H	H	Y	Y	N	H

77	2	H	H	Y	Y	N	H
78	3	M	M	Y	Y	N	M
79	18	M	M	Y	N	Y	L
80	18	M	L	Y	Y	Y	H

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 HMP). 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
4. LiDAR or high resolution DEM

### J.) HAZARD AREA EXTENT AND LOCATION

Hazard area extent and location maps have been generated and are provided below for Delaware County to illustrate the probable areas impacted within the County. These maps are based on the best available data at the time of the preparation of this Plan, and are 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 Delaware County has significant exposure. The Planning Area maps are provided in the hazard profiles within Section 5.4, Volume I of this Plan.

**K.) ADDITIONAL COMMENTS**

No additional comments at this time.