



# ALBANY COUNTY ALL – HAZARD MITIGATION PLAN

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## ALBANY COUNTY

### ALL - HAZARD MITIGATION PLAN

#### EXECUTIVE SUMMARY

#### **Purpose**

The purpose of the All-Hazard Mitigation Plan is to identify the County's natural and technological hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, identify vulnerability (areas and development that could be impacted), set goals to reduce potential impacts, and recommend a prioritized list of solutions to mitigate potential damage and protect the public and resources within the County. The mitigation plan will explore mitigation opportunities, and evaluate resources, needs and shortfalls. Finally, the plan will be implemented on a continual basis through outside grants, as part of the County's regular capital and operating budgets and through programmatic and legislative actions.

The County has experienced natural disasters such as ice storms, winter storms, nor'easters and other severe storms and floods. These disasters resulted in huge expenditures of both public and private funds, including federal and state funds, in repairing and rebuilding severely damaged facilities. Accordingly, the County is preparing this All-Hazard Mitigation Plan.

Section 322 of the federal Disaster Mitigation Act of 2000, entitled "Mitigation Planning," is an amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act. According to this amendment (known as the Stafford Act amendments), all local governments must have an approved All-Hazard Mitigation Plan in order to be eligible to receive Hazard Mitigation Grant Program (HMGP) funding.

The Stafford Act amendments established a national program for pre-disaster mitigation and streamlined the administration of federal disaster relief. The interim Final Rule is detailed in the Code of Federal Regulations, specifically found at 44CFR Parts 201 and 206.

The Draft Hazard Mitigation Plan (dated \_\_\_\_\_) was submitted to the New York State Emergency Management Office (SEMO) who accepted the plan and forwarded it to the Federal Emergency Management Administration (FEMA) for review and approval. FEMA approved the plan on \_\_\_\_\_.

## **Planning Process**

Creation of a planning committee or team to conduct the planning process is a key element in mitigation planning. A planning committee that includes public representation ensures broad community support for the plan. To that end, the County passed a formal resolution on February 14, 2005 approving a grant application to the New York State Emergency Management Office (SEMO) and on February 13, 2006 approving an agreement with SEMO for a mitigation plan. The County created a Hazard Mitigation Planning Committee. The committee was charged with drafting an action plan in order to address the requirements of the Stafford Act and related issues concerning storm, flood and other hazards. The function of the Committee was to pool resources among various County departments and personnel and a cross section of the community to compile an All-Hazard Mitigation Plan.

The Hazard Mitigation Planning Committee was chaired by the County Commissioner of Public Works and included representatives from the Sherriff's Office and Planning Department, who offered first-hand experience with natural disasters including storm and flood problems, emergency management and security problems. Also included on the committee were individuals from the Albany County Soil & Water Conservation District and the County Executive's staff. These employees were chosen because of their key roles with mitigation planning and activities with community organizations outside of their County employment. The Committee met regularly and members were responsible for supplying information to the project consultant, Sidney B. Bowne & Son, LLP. A representative of the NY State Emergency Management Office (SEMO) was available in an advisory capacity.

The following was accomplished during the Planning Committee meetings:

- The "kickoff" meeting included an introduction of committee members, and introduction to the planning area, an overview of past hazards, an overview of past hazard rankings conducted within the County, and a review of tasks regarding known hazards and an assignment of tasks to committee members.
- The Planning Committee met with representatives from involved County, County, Regional, State and Village agencies.
- The Planning Committee conducted a group survey to determine which hazards should be considered for analysis.
- Each hazard was assigned a rank in accordance with the applicable NY State hazard ranking model (HIRA).
- Rankings were reviewed at two Planning Committee meetings to ensure that rankings are indicative of the actual situation within the County.
- Individual hazards were reviewed in detail at numerous Planning Committee meetings and via e-mail among the Planning Committee members.

- The Planning Committee discussed potential hazard mitigation projects with due consideration to existing regional master plans and goals of the County and municipalities.
- The Planning Committee met specifically to conduct the STAPLEE analysis.
- The Planning Committee reviewed numerous versions of the draft Hazard Mitigation Plan, and circulated copies of the “final” draft to the municipalities within the County for review and comment.
- The draft Hazard Mitigation Plan was reviewed by SEMO representatives.

The planning process included two public comment periods, one in \_\_\_\_\_ and the second in \_\_\_\_\_. On \_\_\_\_\_ County Board formally adopted the plan by approval at a regularly scheduled public meeting.

### **Hazard Identification**

For the purposes of this study, hazards are classified in two general categories, i.e., natural and technological. The Planning Committee, with input from representatives of various agencies, identified 32 hazards that pose a realistic threat to residents of the County. The hazards include flooding, severe storms, hurricanes, tornadoes, winter storms (blizzards), ice storms, ice jams, temperature extremes, drought, landslides, earthquake, blight, infestation, fire, hazardous material releases, oil spills, utility failure, dam failure, water supply contamination, transportation accidents, structural collapse, wildfire, mine collapse, explosion, civil unrest, epidemic, air contamination, radiological releases, fuel shortage and terrorism.

The Planning Committee ranked each of the hazards identified above using a scoring system developed by the American Red Cross and New York State Emergency Management Office (SEMO) called HIRA (Hazard Identification and Risk Assessment). The scoring system uses a weighted numeric system using the following as input parameters:

- Scope
- Frequency
- Cascade Effects
- Onset
- Impact
- Duration
- Stabilization

The scope factor includes the area or areas that could be impacted by the hazard, and the possibility of the hazard triggering another hazard. The scope of the hazard may be in a single location, several individual locations, throughout a small region or throughout a large region. According to the HIRA model, a small region is defined as a portion County, or perhaps a neighborhood, and a large region would apply to a hazard that could happen over a significant portion of the County.

The frequency is an estimation of how often the hazard would occur. According to the HIRA model, the frequency factor could be described as rare (occurring once every 50 years), infrequent (occurring between once every 8 years and once every 50 years), a regular event (occurring between once a year and once every 7 years) or frequent (occurring more than once a year).

Cascade effects are hazards that may be caused by other hazards.

The onset factor is whether there is any warning time before the event. The onset could be no warning, several hours warning, one day warning, one week warning or more than one week warning.

The impact factor considers the impact on people, property and infrastructure. Impact on people would consider whether serious injury or death is unlikely, likely but not in large numbers (casualties treatable through the normal operation of emergency system), likely in large numbers (casualties require full activation of the County's medical facilities' disaster plan) or likely in extremely large numbers (casualties overwhelms the County medical system and outside assistance is required).

The impact on property includes damage to, homes, businesses, government buildings, roads, bridges, water, sewer and power facilities, structures, belongings and income. The damages could be considered little (or none), moderate or severe.

Hazard duration includes the length of time that the hazard lasts and how long emergency operations continue. The duration could be less than one day, one day, two or three days, four days to one week or more longer than one week.

The duration of emergency operations could be less than one day, one to two days, three days to one week, one to two weeks or longer than two weeks.

Stabilization is the time it would take for municipal resources to either remedy the impact or stabilize the situation created due to the hazard. Stabilization may take a day or less, to more than two weeks.

## **Hazard Analysis**

The evaluation of the 32 hazards applicable to Albany County have been scored and grouped into the following categories in accordance with the HIRA model.

321 to 400 High Hazard: (none)

241 to 320 Moderately High Hazards

Natural Hazards: severe storms, ice storms, landslides, severe winter storms, tornadoes and floods.

Technological Hazards: utility failure, hazardous material releases from fixed sites, terrorism and fire.

161 to 240 Moderately Low Hazards

Natural Hazards: wildfire, extreme temperatures, earthquake, hurricane, blight, epidemic, ice jam, drought and infestation.

Technological Hazards: dam failure, oil spill, structural collapse, transportation accident, air contamination, mine collapse, hazardous materials release during

transit, water supply contamination, explosions, civil unrest, radiological releases and fuel shortage.

44 to 160 Low Hazards (none)

The Planning Committee chose to exclude the following hazards that do not apply to the Albany County: avalanche, food shortage (resulting in the disruption of distribution to retailers) and tsunami.

The plan includes an analysis of vulnerable assets, a discussion of past events, historical damages, probable future events, development trends and estimates of potential losses for the moderately high hazards. A general discussion of the low hazards is also included.

### **Mitigation Strategy**

Mitigation strategy is provided for each of the moderately high hazards, including a brief discussion of goals, objectives and actions.

## ALBANY COUNTY

### ALL - HAZARD MITIGATION PLAN

## I. Introduction

### A. County Profile

Albany County is located in the east central part of New York State, as shown on the Location Map. The center of the county is approximately 135 miles due north of New York City. Albany County was created in 1683, and is one of the original counties in the State (although it was originally much larger). Albany County is bound by Saratoga and Schenectady County to the north, Rensselaer County to the east, Greene County to the south and Schoharie County to the west.

Albany County includes 3 cities (namely Albany, Cohoes and Watervliet), 6 incorporated villages (Altamont, Colonie, Green Island, Menands, Ravena and Voorheesville), and 10 towns (Berne, Bethlehem, Coeymans, Colonie, Green Island, Guilderland, Knox, New Scotland, Rensselaerville and Westerlo). This report has been prepared for the entire County, including the incorporated villages and cities, as shown on the County Map.

The County encompasses approximately 533 square miles, including 523 square miles of land and 10 square miles of water. The County lies on the southwest quadrant of the confluence of the Mohawk and Hudson Rivers. The Hudson River forms the eastern boundary of the County and the Mohawk is located along a portion of the northern boundary of the County. The terrain of the County ranges from nearly level in the vicinity of the Hudson River to high and hilly to the southwest, near the edge of the Catskill Mountains. Elevations range from near sea level along the Hudson River to more than 2,100 feet at the edge of the Catskills. The Hudson River is tidal along the County boundary.

The County is governed by a 39-member County Legislature headed by a County Executive. Among other offices and bureaus, the County includes the following:

- Department of Consumer Affairs, responsible for the protection of consumers and businesses
- Cornell Cooperative Extension Office, providing information pertaining to agriculture, including gardening, lawn maintenance and pest control
- County Attorney, provides legal services to all County departments
- County Clerk, responsible for maintaining County records

- Children, Youth and Families, serving families and aiding in the care and adoption of children
- County Comptroller, responsible for County financial matters and auditing
- Department of Economic Development, Conservation and Planning, who studies the County patterns, trends and needs pertaining to economics, development and conservation to make informed recommendations to the County Executive, Legislature or Planning Board
- General Services, responsible for coordination with other County offices, relative to space management, building maintenance, security for County facilities, acquisition of goods and services, and vehicle maintenance
- Hall of Records
- Department of Health, responsible for the prevention of communicable and chronic diseases, protection against environmental hazards, and to promote health and wellness
- Human Resources, responsible for the administration of personnel
- Department of Law
- Department of Management and Budget, who ensures the wise use of the County's financial resources
- Department of Public Works
- Department of Social Services, who services the needs of the poor and needy
- Soil and Water Conservation District, responsible for the protection of natural resources such and soil

Albany County does not have a county police department, nor does it have a county fire department. Rather, there are many municipal police departments that have jurisdiction over police matters within their municipal jurisdiction, which rely on the New York State police for backup. The Albany County Sheriff's Department is the primary police agency for the Towns of New Scotland, Knox, Berne, Westerlo and Rensselaerville, and the Village of Voorheesville.

The three cities within the County and the Village of Green Island have professional fire fighting departments. The remainder of the County relies on all-volunteer local fire departments (within 41 local departments) for protection from fire.

## Location Map

## County Map

## **B. Land Use**

There are residential, commercial (including retail space, business, office, warehousing and storage, restaurants, hotels and motels), community service (including health, education, correction and welfare facilities), recreational (including areas for entertainment and amusement, such as sports facilities, beaches, camping facilities, marinas and parks), industrial (including manufacturing and mining), vacant (not in use with no permanent improvement), public service (including gas, electric, water, communication and waste disposal), public conservation (preserves), and agricultural lands within the County. Most development is concentrated generally on the main roads, as shown on the County Transportation Map.

Residential land use includes single family and multi-family housing. According to City-Data.com, in 2005, there were 132,706 housing units in Albany County. Approximately 50% of all housing units within the County were single family houses, and approximately 48% of housing units were attached or multi-unit structures. According to the US Census, the homeownership rate in the County was 57.7% and the number of housing units in multi-unit structures was 44.5% in 2000.

There are a number of mobile home parks within the County, including Meilak's Mobile Home Park on Old Ravena Road in Coeymans, Flemmings Mobile Home Park and Pine Ridge Estates (mobile homes) on NYS Route 9W in Selkirk and the Kountry Knolls trailer park on County Road 252 in the Town of Knox. According to City-Data.com in 2005, mobile homes represent nearly 2% of housing units within the County.

Businesses include wholesale and retail establishments. Wholesale businesses include durable goods such as motor vehicle parts, furniture, lumber, equipment, machinery and electrical supplies, and nondurable goods including paper products, apparel, groceries, beverages, and petroleum products. Retail businesses include motor vehicle parts and dealerships, furniture, electronic equipment and devices, building materials, food and beverage items, clothing, sporting goods, health and personal care items and gasoline.

Industrial activities include printing, and the manufacturing of food, chemicals, plastics, metal fabrication, furniture and production of other items.

Park land and preserves include the Delmar State Game Farm, the Partridge Run Game Management Area, the Pine Bush State Unique Area and Thacher State Park.

According to the New York Agricultural Statistics Service in Albany, in 2003, there were 69,000 acres of farmland in Albany County, which represents 21% of the County land area. The main agricultural products are nursery and greenhouse products, cattle, dairy products, vegetables, hay and other crops. Cropland encompasses nearly 60% of agricultural land County-wide, and hay fields account for more than 35% of the total agricultural land in the County. Pasture land makes up less than 10% of the agricultural land in the County. According to City-Data.com, less than 1% of agricultural land in the County is used for growing vegetables, and less than 1% is used for orchards.

According to the US Census Bureau, 2002 Economic Census, the following is a list of the types of establishments within the County.

### **Types of Economic Activities, Albany County**

<b><u>Type of Activity</u></b>	<b><u>Number of Establishments</u></b>
Retail Trade	1,365
Professional	1,051
Health Care/Social Assistance	961
Accommodations/Food Service	847
Other Services	763
Wholesale Trade	543
Administration/Support Services	401
Real Estate	370
Manufacturing	260
Information	235
Arts/Entertainment	123
Educational Services	76
Waste Management	29

### C. Demography

The population of Albany County was 294,565 according to the 2000 census, and the 2005 estimate is 297,414. Albany County ranks 13 in population among the 62 counties in the State of New York. According to the 2000 census, there were 120,512 households and 70,981 families in the County. The average household size in the County in 2000 was 2.32 people and the average family size was 2.99 people. According to a report by City-Data.com, in 2005, 90% of the residents of Albany County lived in urban areas. The City of Albany is the largest city in the County and remains the main population center having nearly one-third of the County's people, with a population of 95,658 in 2000.

The following is a summary of demographic data from the US Census estimates for Albany County in 2005.

**Summary of Demographic Data 2005**

	<u>Albany County</u>	<u>New York State</u>
Children under 5 years of age	5.3%	6.5%
Adults over 65 years old	13.7%	13.1%
Household size (pop/house)	2.3	2.6
Median household income	\$48,958	\$49,480
Population below poverty level	12.1%	13.8%

According to City-Data.com, private wage earners made up 67% of the workforce, while 28% were employed by the government and 5% were self employed in 2005. The median household income was \$42,935 and the median family income was \$56,724.

According to the Capitol District Planning Commission in a report from 2002, the total population of the County is projected to increase through the year 2040. Although the population of the City of Albany has leveled off in recent decades, over 95% of the projected growth in the County would take place in the suburban Towns of Colonie, Guilderland and Bethlehem, located adjacent to the City of Albany. The following page contains a table of projected population for Albany County, from the Capitol District Planning Commission.

Tables of population statistics provided by the US Census by municipality are shown on the following pages. It should be noted that the tables include the number and percentage of population of more vulnerable segments of the population such as those 65 years of age or older, people with disability (not institutionalized), those whose language is other than English and those below the poverty level. According to the census year 2005 estimates, there were approximately 40,750 people over the age of 65 and 15,750 under the age of 5 year in Albany County. According to the 2000 census, there were 52,366 disabled people in the County, which is nearly 18% of the total County

population. According to the US Census, disability status includes blindness, deafness, severe vision or hearing impairments, limitations on physical activities, long term physical, mental or emotional conditions that related to learning, memory or self-care.

### Population Projection by Municipality

Source: Capital District Planning Commission

Population Projection	2000	2010	2020	2030	2040
Albany County	294,565	302,162	307,201	311,707	316,197
City of Albany	94,301	94,741	94,740	94,846	94,922
Town of Berne	2,846	2,811	2,794	2,796	2,808
Town of Bethlehem	31,304	33,922	35,730	37,510	39,296
Town of Coeymans	8,151	8,122	8,162	8,200	8,234
Village of Ravena	3,369	3,317	3,289	3,289	3,288
City of Cohoes	15,521	14,998	14,670	14,455	14,309
Town of Colonie	79,258	81,970	83,725	84,731	85,402
Village of Colonie	7,916	7,823	7,736	7,624	7,531
Village of Menands	3,910	3,920	3,921	3,921	3,922
Town/Village of Green Island	2,278	2,508	2,515	2,522	2,540
Town of Guilderland	34,045	36,093	37,715	39,238	40,964
Village of Altamont	1,737	1,701	1,670	1,638	1,613
Town of Knox	2,647	2,720	2,779	2,845	2,940
Town of New Scotland	8,626	8,700	8,798	8,925	9,079
Village of Voorheesville	2,775	2,750	2,795	2,844	2,889
Town of Rensselaerville	1,915	1,986	2,047	2,107	2,165
City of Watervliet	10,207	9,994	9,804	9,665	9,536
Town of Westerlo	3,466	3,597	3,722	3,867	4,002

There are 29,041 people who do not speak English at home, according to the 2000 Census. Many municipalities in the County have a non-English speaking population of 3% to 5%, but the Towns of Colonie and Guilderland, the Village of Menands and the Cities of Albany, Cohoes and Watervliet have 9% to 13% non-English speaking population.

There are a number of hospitals in Albany County, as shown in the following table. The patients within the hospitals would also be considered a vulnerable segment of the population.

#### **Albany County Hospitals**

Albany Medical Center	619 beds
Albany Memorial Hospital	165 beds
St. Peters Hospital	447 beds
Stratton Veterans Affairs Medical Center	99 (avg. daily occupancy)

There are other segments of the population of the County that reside in group quarters are shown as follows.

#### **Population by Group Housing**

College dormitories	9,037
Nursing home	3,027
Jail/correctional institution	800
Home for mentally retarded	669
Religious home quarters	467
Halfway houses for drug/alcohol abuse	298
Mental hospital	363
Juvenile delinquent homes	334
Homes for physically handicapped	14
Short term care facilities	22









#### **D. Purpose of the Plan**

The purpose of this plan is to recognize the County's natural and technological hazards, estimate the probability of occurrence, identify vulnerability, determine priorities and recommend solutions to mitigate damage from the hazards to protect the public and resources within the County. This report will explore mitigation opportunities, evaluate resources, needs and shortfalls.

The County has experienced disasters resulting in huge expenditures of both public and private funds, including federal and state funds, in repairing and rebuilding facilities severely damaged as a result of flooding and to a lesser extent wind damage from natural disasters such as hurricanes, nor'easters and other severe storms.

Section 322 of the federal Disaster Mitigation Act of 2000, entitled "Mitigation Planning," is an amendment to the Robert T. Stafford Disaster Relief and Emergency Assistance Act. According to this amendment (known as the Stafford Act amendments), all local governments must have an approved All-Hazard Mitigation Plan in order to be eligible to receive Hazard Mitigation Grant Program (HMGP) funding. The Stafford Act amendments established a national program for pre-disaster mitigation and streamlined the administration of federal disaster relief. The interim Final Rule is found at 44CFR Parts 201 and 206.

After responding to comments from review agencies, the Draft Hazard Mitigation Plan (dated \_\_\_\_\_) was submitted to the New York State Emergency Management Office (SEMO) who accepted the plan and forwarded it to the Federal Emergency Management Administration (FEMA) for review and approval. FEMA approved the plan on \_\_\_\_\_. Albany County (County Legislature) must formally adopt the final plan, which may be done at a regular County Legislature meeting. The plan has considered any comments made during a series of two 30-day public comment periods.

## II. Planning Process

### A. Description of Planning Process

Creation of a planning committee or team to conduct the planning process is a key element in mitigation planning. A planning committee that includes public representation ensures broad community support for the plan. To that end, the County passed a formal resolution on February 14, 2005 approving a grant application to the New York State Emergency Management Office (SEMO) and on February 13, 2006 approving an agreement with SEMO for a mitigation plan. The County created a Hazard Mitigation Planning Committee. The committee was charged with drafting an action plan in order to address the requirements of the Stafford Act and related issues concerning storm, flood and other hazards. The function of the Committee was to pool resources among various County departments and personnel and a cross section of the community to compile an All-Hazard Mitigation Plan.

The Hazard Mitigation Planning Committee was chaired by the County Commissioner of Public Works and included representatives from the Sheriff's Office and Planning Department, who offered first-hand experience with natural disasters including storm and flood problems, emergency management and security problems. Also included on the committee were individuals from the Albany County Soil & Water Conservation District and the County Executive's staff. These employees were chosen because of their key roles with mitigation planning and activities with community organizations outside of their County employment. The Committee met regularly and members were responsible for supplying information to the project consultant, Sidney B. Bowne & Son, LLP. A representative of the NY State Emergency Management Office (SEMO) was available in an advisory capacity.

The following was accomplished during the Planning Committee meetings:

- The "kickoff" meeting included an introduction of committee members, and introduction to the planning area, an overview of past hazards, an overview of past hazard rankings conducted within the County, and a review of tasks regarding known hazards and an assignment of tasks to committee members.
- The Planning Committee met with representatives from involved County, County, Regional, State and Village agencies.
- The Planning Committee conducted a group survey to determine which hazards should be considered for analysis.
- Each hazard was assigned a rank in accordance with the applicable NY State hazard ranking model (HIRA).
- Rankings were reviewed at two Planning Committee meetings to ensure that rankings are indicative of the actual situation within the County.
- Individual hazards were reviewed in detail at numerous Planning Committee meetings and via e-mail among the Planning Committee members.

- The Planning Committee discussed potential hazard mitigation projects with due consideration to existing regional master plans and goals of the County and municipalities.
- The Planning Committee met specifically to conduct the STAPLEE analysis.
- The Planning Committee reviewed numerous versions of the draft Hazard Mitigation Plan, and circulated copies of the “final” draft to the municipalities within the County for review and comment.
- The draft Hazard Mitigation Plan was reviewed by SEMO representatives.

The planning process included two public comment periods, one in \_\_\_\_\_ and the second in \_\_\_\_\_. On \_\_\_\_\_ County Board formally adopted the plan by approval at a regularly scheduled public meeting.

## **B. Planning Committee**

The County recognized that it could institute a program by drafting an action plan in order to address related issues concerning storm, flood and other hazards passed a formal resolution on February 14, 2005 approving a grant application to the New York State Emergency Management Office (SEMO) and on February 13, 2006 approving an agreement with SEMO for a mitigation plan. The County created a Hazard Mitigation Planning Committee. The function of the Committee was to pool resources among various County departments and personnel and a cross section of the County and various communities to compile an All-Hazard Mitigation Plan.

The Hazard Mitigation Planning Committee was chaired by a County official, the Commissioner of the Department of Public Works, and included representatives from the Sheriff’s Office, the Department of Planning, the County Executives Office and the Albany County Soil & Water Conservation District, who serve key roles in the community and offered first-hand experience with natural disasters including storm and flood problems, emergency management and security problems. The Committee met regularly and members were responsible for supplying information to the project consultant, Sidney B. Bowne & Son, LLP (SBB). The project manager from SBB is a certified and professional planner and professional engineer.

Individual members of the committee were as follows:

Michael Franchini, the Commissioner of Public Works, Committee chairperson. Mr. Franchini has years of experience in the day to day workings of the public systems within the County. The Department of Public Works is responsible for the maintenance and repair of 594 lane miles of County Roads, 78 bridges, thousands of culverts, thousands of road signs and road markings, snow plowing and de-icing of all County roads plus 136 miles of State Highways and the maintenance of 3 County owned recreation areas.

John Layton, Captain, with the Albany County Sheriff’s Department, Emergency Management Unit.

Terrence Ryan, with the Albany County Sheriff's Department, Emergency Management Unit.

Radworth E. Anderson - State Emergency Management Office Associate Planner/Manager, Community Mitigation Programs. Mr. Anderson and members of his staff served in an advisory capacity and were especially instrumental in providing guidance to the committee. The SEMO staff was always available for helping the committee when needed.

The Planning Committee met on \_\_\_\_\_ The following is a description of the proceedings of each of the meetings during 2006 and 2007.

On January 20, 2006, the Planning Committee met with representatives of the 19 municipalities to review the SEMO/FEMA Hazard Mitigation Plan process, and the specific plans for the Albany County All-Hazard Mitigation Plan.

On July 19, 2006, the Planning Committee met for the first time for a "kickoff" meeting. The meeting included a review of tasks regarding known hazards and an assignment of tasks to committee members.

On January 31, 2007, the Planning Committee met to discuss the draft rankings. The Committee reached out to each municipality within the County (including 3 Cities, 6 Villages and 10 Towns) by way of a questionnaire prior to the meeting. The questionnaire listed all potential hazards and solicited information whether the hazards are known to exist at the local level. At this meeting, the Committee reviewed and discussed the completed questionnaires. Additionally, the draft rankings were discussed in detail, and examples of hazards were discussed, as well as sources of information pertaining to certain hazards.

The Committee discussed potential projects and report format at the meetings held on \_\_\_\_\_.

On \_\_\_\_\_ the Planning Committee met to review a draft Hazard Mitigation Plan with SEMO representatives.

The preparation of the All Hazard Mitigation Plan included a review of the following regional master plans:

- The Albany County Hazard Mitigation Plan;
- Albany County Emergency Management Plan,

### **C. Coordination With Regional/Local Agencies**

In an effort to obtain as much information as possible, such as technical information on risk assessment, vulnerability and various mitigation measures, guidance on regulatory requirements, advice and assistance in the planning effort, the following agencies were contacted and invited to participate in the planning process:

New York State Emergency Management Office

New York State Police

New York State Department of Transportation

National Weather Service

Albany County Emergency Management Office

Albany County Sheriff

Albany County Fire Coordinator

School Districts within the County

Hospitals within the County

County Fire Districts

County Water Districts

Cities of Albany, Cohoes and Watervliet

Towns of Berne, Bethlehem, Coeymans, Colonie, Green Island, Guilderland, Knox, New Scotland, Rensselaerville and Westerlo

Villages of Altamont, Colonie, Green Island, Menands, Ravena and Voorheesville

Local civic advisory groups

### **D. Public Participation**

Besides the solicitation of information and direct participation from the agencies listed above, during \_\_\_\_\_ 2007, the Executive Summary to the Draft Plan (dated \_\_\_\_\_) was made available for review within all participating municipalities within the County. In addition, The County sent the Executive Summary to \_\_\_\_\_ (\_\_\_\_) local civic associations and organizations in order to obtain their input on the draft plan (see Appendix). Copies of these letters are included. The Executive Summary was posted on the County website, with an invitation for public comment. The Executive Summary sent to the parties described above, including the document posted on the website, cited that the complete Draft Plan was available for public inspection at County offices in Voorheesville. The comment period remained open until \_\_\_\_\_. A second 30-day public comment period was opened in \_\_\_\_\_, affording the public an opportunity to express any comments. It should also be noted that local civic group representatives attended each of the Planning Committee meetings.

On \_\_\_\_\_, the County Legislature formally adopted the plan by approval at a regularly scheduled public meeting.

## Sample letter for public input

**E. Review and Incorporation of Existing Plans and Studies**

### III. Risk Assessment

#### A. Hazard Identification

Hazards are defined as something that can cause harm. Hazards are classified in two general categories, i.e., natural and technological. Natural hazards include atmospheric, biological and geologic conditions that may be harmful. Technological hazards are related to man's activities, and are a result of the technological setting in which we live and are directly induced by people or their actions.

As a result of much discussion, the Planning Committee, with input from representatives of various agencies, identified 32 hazards that pose a realistic threat to residents of the County. The evaluation of the 32 hazards applicable to Albany County include severe storms, ice storms, landslides, tornadoes, floods, severe winter storms, wildfire, extreme temperatures, earthquake, hurricane, blight, epidemic, ice jam, drought, infestation, utility failure, hazardous material releases from fixed sites, terrorism, fire, dam failure, oil spill, structural collapse, transportation accident, air contamination, mine collapse, hazardous materials release during transit, water supply contamination, explosions, civil unrest, radiological releases and fuel shortage. Sections B and C below explain how the hazards were ranked and the rationale for inclusion or exclusion of potential hazards.

The Planning Committee chose to exclude the following hazards that do not apply to the Albany County: avalanche, food shortage (resulting in the disruption of distribution to retailers) and tsunami.

#### B. Assessment Factors

The Planning Committee ranked each of the hazards identified above using a scoring system developed by the American Red Cross and New York State Emergency Management Office (SEMO) called HIRA (Hazard Identification and Risk Assessment). The scoring system uses a weighted numeric system using the following as input parameters:

- Scope
- Frequency
- Cascade Effects
- Onset
- Impact
- Duration
- Stabilization

The scope factor includes the area or areas that could be impacted by the hazard, and the possibility of the hazard triggering another hazard. The scope of the hazard may be in a single location, several individual locations, throughout a small region or throughout a large region. According to the HIRA model, a small region is defined as a portion County, or perhaps a neighborhood, and a large region would apply to a hazard that could happen over a significant portion of the County.

The frequency is an estimation of how often the hazard would occur. According to the HIRA model, the frequency factor could be described as rare (occurring once every 50

years), infrequent (occurring between once every 8 years and once every 50 years), a regular event (occurring between once a year and once every 7 years) or frequent (occurring more than once a year).

Cascade effects are hazards that may be caused by other hazards. The onset factor is whether there is any warning time before the event. The onset could be no warning, several hours warning, one day warning, one week warning or more than one week warning.

The impact factor considers the impact on people, property and infrastructure. Impact on people would consider whether serious injury or death is unlikely, likely but not in large numbers (casualties treatable through the normal operation of emergency system), likely in large numbers (casualties require full activation of County's medical facilities' disaster plan) or likely in extremely large numbers (casualties overwhelms the County medical system and outside assistance is required).

The impact on property includes damage to, homes, businesses, government buildings, roads, bridges, water, sewer and power facilities, structures, belongings and income. The damages could be considered little (or none), moderate or severe.

Hazard duration includes the length of time that the hazard lasts and how long emergency operations continue. The duration could be less than one day, one day, two or three days, four days to one week or more longer than one week.

The duration of emergency operations could be less than one day, one to two days, three days to one week, one to two weeks or longer than two weeks.

Stabilization is the time it would take for municipal resources to either remedy the impact or stabilize the situation created due to the hazard. Stabilization may take a day or less, to more than two weeks.

### **C. Hazard Analysis**

The evaluation of the 32 hazards applicable to the Albany County have been scored and grouped into the following classification categories in accordance with the HIRA model.

321 to 400 High Hazards: (none)

241 to 320 Moderately High Hazards

Natural Hazards: severe storms, ice storms, landslides, severe winter storms, tornadoes and floods.

Technological Hazards: utility failure, hazardous material releases from fixed sites, terrorism and fire.

161 to 240 Moderately Low Hazards

Natural Hazards: extreme temperatures, earthquake, drought, infestation, wildfire, blight, epidemic, hurricane and ice jam.

Technological Hazards: dam failure, oil spill, structural collapse, transportation accident, mine collapse, hazardous materials release during transit, water supply contamination, explosions, civil unrest, radiological releases, air contamination and fuel shortage.

44 to 160 Low Hazards (none)

The following tables indicate the various scores according to the HIRA model, and show the hazards, in order of rank according to score, grouped by hazard classification (moderately high and moderately low ranking hazards), and shown again separated into groups of natural hazards and technological hazards.

## **Albany County, NY All Hazard Ranking**

### **Moderately High Hazards** **(241 – 320)**

<b>SEVERE STORM:</b>	<b>300</b>
<b>UTILITY FAILURE:</b>	<b>295</b>
<b>ICE STORM:</b>	<b>290</b>
<b>LANDSLIDE:</b>	<b>288</b>
<b>WINTER STORM (Severe):</b>	<b>288</b>
<b>TORNADO:</b>	<b>280</b>
<b>HAZMAT (Fixed Site):</b>	<b>273</b>
<b>FLOOD:</b>	<b>270</b>
<b>TERRORISM:</b>	<b>252</b>
<b>FIRE:</b>	<b>245</b>

**Albany County, NY  
All Hazard Ranking**

**Moderately Low Hazards  
(161 – 240)**

<b>DAM FAILURE:</b>	<b>234</b>
<b>OIL SPILL:</b>	<b>229</b>
<b>STRUCTURAL COLLAPSE:</b>	<b>227</b>
<b>TRANSPORTATION ACCIDENT:</b>	<b>227</b>
<b>EXTREME TEMPS:</b>	<b>217</b>
<b>MINE COLLAPSE:</b>	<b>212</b>
<b>HAZMAT (In Transit):</b>	<b>210</b>
<b>EARTHQUAKE:</b>	<b>209</b>
<b>DROUGHT:</b>	<b>201</b>
<b>INFESTATION</b>	<b>201</b>
<b>WATER SUPPLY CONTAMINATION:</b>	<b>200</b>
<b>WILDFIRE:</b>	<b>192</b>
<b>EXPLOSION:</b>	<b>188</b>
<b>CIVIL UNREST:</b>	<b>185</b>
<b>BLIGHT:</b>	<b>185</b>
<b>EPIDEMIC:</b>	<b>179</b>
<b>RADIOLOGICAL (Fixed Site):</b>	<b>176</b>
<b>HURRICANE:</b>	<b>170</b>
<b>ICE JAM:</b>	<b>169</b>
<b>AIR CONTAMINATION:</b>	<b>168</b>
<b>FUEL SHORTAGE:</b>	<b>164</b>
<b>RADIOLOGICAL (In Transit):</b>	<b>163</b>

**Albany County, NY  
Hazard Ranking**

**Natural Hazards  
Moderately High Hazards  
(241 – 320)**

<b>SEVERE STORM</b>	<b>300</b>
<b>ICE STORM</b>	<b>290</b>
<b>LANDSLIDE</b>	<b>288</b>
<b>WINTER STORM (Severe)</b>	<b>288</b>
<b>TORNADO</b>	<b>280</b>
<b>FLOOD</b>	<b>270</b>

**Natural Hazards  
Moderately Low Hazards  
(161 – 240)**

<b>EXTREME TEMPS</b>	<b>217</b>
<b>EARTHQUAKE</b>	<b>209</b>
<b>DROUGHT</b>	<b>201</b>
<b>INFESTATION</b>	<b>201</b>
<b>WILDFIRE</b>	<b>192</b>
<b>BLIGHT</b>	<b>185</b>
<b>EPIDEMIC</b>	<b>179</b>
<b>HURRICANE</b>	<b>170</b>
<b>ICE JAM</b>	<b>169</b>

**Albany County, NY  
Hazard Ranking**

**Technological Hazards  
Moderately High Hazards  
(241 – 320)**

UTILITY FAILURE	295
HAZMAT RELEASE (Fixed Site)	273
TERRORISM	252
FIRE	245

**Technological Hazards  
Moderately Low Hazards  
(161 – 240)**

DAM FAILURE:	234
OIL SPILL	229
STRUCTURAL COLLAPSE	227
TRANSPORTATION ACCIDENT	227
MINE COLLAPSE	212
HAZMAT RELEASE (In Transit)	210
WATER SUPPLY CONTAMINATION	200
EXPLOSION	188
CIVIL UNREST	185
RADIOLOGICAL RELEASE (Fixed Site)	176
AIR CONTAMINATION	168
FUEL SHORTAGE	164
RADIOLOGICAL RELEASE (In Transit)	163

Based on the analysis performed by the Planning Committee, there are no high hazards in the County according to the HIRA model scores. There are 10 moderately high hazards and 22 moderately low hazards. The moderately high hazards include severe storms, ice storms, landslides, severe winter storms, tornados, floods, utility failure, hazardous releases from fixed sites, terrorism and fire. Moderately low hazards include wildfire, extreme temperatures, earthquakes, hurricanes, blight, epidemic, ice jams, drought, infestation, dam failure, oil spill, structural collapse, transportation accident, air contamination, mine collapse, hazardous material releases during transit, water supply contamination, explosions, civil unrest, radiological release from a fixed site, fuel shortage and radiological releases during transit. All natural hazards and moderately high ranking hazards are profiled in this report. Technological moderately low hazards are discussed in the report, but are not profiled completely due to their relative low priority as demonstrated by their ranking.

The Planning Committee decided that there are a number of potential hazards on the FEMA list of potential hazards that are not considered applicable to the County according to the FEMA definitions, and consequently were eliminated from analysis in this report. The non-applicable hazards are avalanche, food shortage and tsunami. The following is a discussion of why the chance of occurrence of these hazards is so remote that they were eliminated and not ranked.

FEMA defines avalanche as a mass of sliding snow in mountainous terrain on slopes of 20° or more. Although there are hills within the County, there is no land in Albany County that is considered mountainous, and there is very little land that approaches slopes of 20°. There are no records of avalanches in the County.

Food shortage was eliminated because there has never been a situation in the County where the distribution of food to retailers had been curtailed.

FEMA defines a radiological release from a fixed site as a release from a nuclear power generating station or research reactor. None of these exist within the County.

Tsunamis occur due to earthquakes and/or volcanic eruption, and are very rare in the Atlantic region, and do not apply to inland areas such as Albany County.