

Section 1.0 – Introduction

The following requirement(s) are met throughout this section:

- §201.4(c)(1): *[The State plan **must** include a] description of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how other agencies participated.*
- §201.4(c)(7): *The plan **must** include assurances that the State will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, in compliance with 44 CFR 13.11(c). The State will amend its plan whenever necessary to reflect changes in State or Federal laws and statutes as required in 44 CFR 13.11(d)*
- §201.4(b): *The [State] mitigation planning process **should** include coordination with other State agencies, appropriate Federal agencies, interested groups, during the planning process.*

Please find that the New York State Multi-Hazard Mitigation Plan is also available for download on the New York State Emergency Management Office website at <http://www.semo.state.ny.us/>.

Plan Summary

The New York State Multi-Hazard Mitigation Plan represents the State's approach to mitigating the adverse impacts of natural disasters within its borders and to fulfill its Federal obligations to mitigate the risks resulting from natural hazards. Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, enacted by Section 104 of the Disaster Mitigation Act of 2000 (DMA) provides new emphasis on mitigation planning. Section 322 emphasizes the need for State and Local governments to closely coordinate mitigation planning and implementation efforts as well as continuing the requirement for a State Mitigation Plan as a condition of disaster assistance. This plan is also intended to serve Local jurisdictions as a guide in completing natural hazard mitigation plans that will meet the requirements set forth in DMA 2000. It is acknowledged that the success of any multi-hazard mitigation planning effort can only be achieved if both State and Local resources are utilized to identify risks, analyze vulnerability, and coordinate mitigation goals and objectives.

It is important to point out to all parties who read this plan that the hazards profiled are limited to natural hazards which may be caused by the weather and geology that dominates New York State. This plan represents Volume 1 of the New York State Comprehensive Emergency Management Plan (CEMP), but Individuals or Jurisdictions interested in information about human caused, technological, or biological hazards may find information in Volume 2 of the CEMP. Additional information about the CEMP and the it's critical annexes, such a Pandemic Influenza, Terrorism, and Hazardous Material may be found in Volume 2 or on related State agency websites, such as the New York State Department of Health, New York State Office of Homeland Security, or similar Federal websites.

Planning Assistance for Jurisdictions: Jurisdictions across New York State may also be interested in developing their own Multi- Hazard Mitigation Plan, which will enable them to analyze and profile the natural hazards that impact their Jurisdiction. After hazards are identified

and the community's assets are specified, the Jurisdiction can estimate the impact each hazard will have on the property and critical structures within its borders. The next step would be to develop a comprehensive mitigation strategy to lessen or reduce the damage caused by each natural hazard. Throughout this plan, there are examples of methodologies which will assist Local jurisdictions in complying with the FEMA requirements specified in DMA 2000 for Multi-Hazard Mitigation Plans. As an advisory to Local Jurisdictions, the following suggestions should be considered prior to initiating the planning process:

- Develop a comprehensive understanding of the requirements specified in DMA 2000 regarding local hazard mitigation planning.
- Strongly consider developing your plan with the assistance of a qualified consultant firm that has received approval on a hazard mitigation plan for other jurisdictions. The planning process will usually require two full years of effort, and attempting to complete a plan without professional assistance is extremely difficult.
- Assure that your plan is focused on all natural hazards that impact your jurisdiction, and propose related mitigation goals, objectives, and activities which will reduce the damage caused by each hazard.
- Extensively utilize the "FEMA Region 2 Tool Kit" in order to assure planning requirements are addressed. This tool kit is organized logically by planning requirements and it is designed to assist planning Jurisdictions to succeed in their mitigation planning effort.
- Seek the guidance and technical assistance offered by the Planning Section of the New York State Emergency Management Office.

Utilize the Risk assessment information contained within this plan as a part of the Local risk assessment required to meet Local plan approval. The information contained within is not intended to provide Jurisdictions with all the information needed, but it can be utilized as one source of guidance.

A multi-hazard mitigation plan concentrates on actions that can be implemented prior to, and after disasters in order to reduce or eliminate damage to property, prevent personal injury and loss of life, and reduce disaster response and recovery costs. All stake holders—various State and Local government authorities, certain Federal agencies, and the private sector—will be engaged in implementing, individually or cooperatively, the actions that have been addressed in the plan. The mitigation plan is also intended to help the State identify and prioritize mitigation opportunities in the immediate aftermath of a major disaster and to serve as a guide for Local government actions prior to and after a disaster event.

Planning Process/Planning Committee: The New York State Emergency Management Office, (SEMO), served the lead role in the initial development and the update process of the New York State Multi-Hazard Mitigation Plan, (hereafter referred to as the Plan). Due to the complexity of New York State, a single committee in the traditional sense was not constituted to obtain input to the planning process. Instead, input was sought and obtained from State and Regional organizations in a targeted and strategic fashion. Several internal meetings were held at the initiation of the planning process and a Steering Committee was identified based on the State and

Regional agencies that were active in the initial plan development. The Steering Committee was convened in April of 2007 to identify specific issues that needed to be reviewed and updated in the plan and to exchange information on how to best gather information from agencies and organizations. Given the size and complexity of the State, it was determined that a survey process and a series of collaborative contacts via phone, e-mail, and face to face meetings would serve to provide all parties with the opportunity to provide input and to assist with the update of the plan. Planning Committee Meetings were held with all relevant State and Regional agencies on August 23rd, and September 26th, 2007. Summaries of these meetings can be found in **Section 2 Table 2-2 Summary of Plan Development Collaboration**. The Mitigation Section also worked with personnel from other sections of SEMO, representatives of member agencies of the New York State Disaster Preparedness Commission (DPC), as well as other State, Local, and Regional agencies. A summary of all collaborative contacts can be found in **Table 2-2**.

In addition, the existing approved New York State Standard Multi-Hazard Plan was posted on the SEMO website and comments from the Public and Local Jurisdictions were sought as the plan update was undertaken. Subsequent drafts of the plan shall be posted on the SEMO website and public comment invited.

The DPC member agencies and the other State agencies consulted are responsible for the management or programming of a vast array of the built environment in the State as well as the administration of a myriad of policies and programs that are designed to protect the natural environment and well being of the population. In the language of DMA 2000, these agencies are thus responsible for the various asset classes the mitigation plan is required to address.

The DPC is authorized by the New York State Consolidated Laws, Executive Law, Article 2-B titled "State and Local Natural and Man-Made Disaster Preparedness". This Law establishes the "policy" of the State with respect to disaster preparedness, prevention, response, and recovery. The policy emphasizes Local level authority and responsibility to ensure development of effective and current plans and programs for protection from natural disasters. The provisions of NYS Law Article 2-B are similar to the provisions of Federal laws such as the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, and the Disaster Mitigation Act 2000. Applicable to this State Hazard Mitigation Plan is Section 21 of the NYS Law Article 2-B, titled "Disaster Preparedness Commission Established; Meetings; Powers and Duties". This section is applicable primarily because the DPC constitutes an existing framework employed for the benefit of various elements in emergency management including the mitigation planning process which is specifically required as outlined in Part 201.4 "Standard Mitigation Plan", (b) "Planning Process". The DPC is comprised of the commissioners or directors of 23 state agencies and one voluntary organization. Article 2-B, Section 21 establishes membership to the DPC, as outlined in the following excerpt:

.....consisting of the commissioners of transportation, health, division of criminal justice services, education, social services, economic development, agriculture and markets, housing and community renewal, general services, labor, environmental conservation, the president of the New York State energy research and development authority, the superintendents of state police, insurance, banking, the secretary of state, the state fire administrator, the chair of the public service commission, the adjutant general, the chairman of the thruway authority, the chief professional officer of the state coordinating chapter of the American Red Cross and three additional members, to be appointed by the governor, two of whom shall be chief executives. The governor shall designate the chair of the commission.....

Risk Assessment: In determining which hazards to profile and to use in the vulnerability assessment and estimating losses, a wide variety of factors were considered. Information analyzed included: historical data from Major Disaster declarations, State and Local disasters, flood insurance policy base, flood insurance coverage, flood insurance claims as well as programs and strategies to mitigate the effects of disasters caused by those hazards. Hazards that have the potential to cause significant impact, even though they have not previously resulted in disaster declarations, are also addressed. It should also be noted that while Section 322 emphasizes mitigation planning for natural disasters, the State continues to address all potential hazards in three broad categories: natural, technological, and human-caused. However, the Plan will provide detailed discussions only on natural hazards. For security reasons, human-caused hazards are not addressed in detail within the Plan.

Accordingly, this plan also includes a risk assessment methodology that involves the analysis of several factors to provide the requisite outcomes of 44CFR part 201.4 (2).

The risk assessment process employed in the plan profiled the following hazards: flood, wind events (including hurricanes, nor'easters, tropical storms, and high wind events), tornado, earthquake, drought, landslide, winter/ice storms, land subsidence, wildfire, power failure, extreme heat, and hail storm. The cascading effects of several of these disasters were also considered. For example, hurricanes, tropical storms, and nor'easters usually cause coastal erosion, and winter and ice storms frequently cause wide scale power outage. Hazards that result from the cascading effect of a primary hazard were not always considered by themselves but were evaluated under the section for their primary hazards.

Given that all areas of the State are not exposed to the same hazards or to the same intensity and vulnerability, **Section 3** of the Plan addresses hazards on a County by County basis. However, it should be noted that some regions of the State may be more prone to specific hazard events, and it is recommended that Local Jurisdictions also examine the histories of neighboring Counties or Municipalities as they perform their risk analysis.

While New York State has carefully outlined the natural hazards that threaten our communities, the State recognizes the changing nature of climate. As the changing climate affects the State's weather, threats and hazards can evolve. Therefore it is recommended that Jurisdictions that are developing or updating a plan take into account the effects that climatic change may have on their vulnerability to specific hazards.

The methodology employed to satisfy the requirements of 44CFR Part 201.4 resulted in the development of detailed vulnerability and risk assessments for Jurisdictions within New York State. **Section 3** provides an extensive discussion of the results of this analysis.

This analysis considers information relating to previous occurrences of hazard events emphasizing the major disasters that have affected the State. From 1956 through the present, all but five of the disasters, or emergencies, that were declared major disasters or emergencies have been the result of damages from severe floods, hurricanes, coastal storms, and severe winter storms. The five disaster declarations that do not fall into those categories are: Love Canal, the World Trade Center bombing in 1993, the Long Island wildfires in 1995, the September 11, 2001 Terrorist Attacks, and the April 2002 Earthquake.

Mitigation Strategy: **Section 4** provides a detailed discussion of the State's mitigation strategy. The basis of the mitigation strategy section was developed during the prior State plan

development effort which resulted in initial plan approval in 2005. In keeping with the requirements for the State plan update and in consideration of the recommended revisions from FEMA, an effort was made to analyze Local plans and to integrate mitigation actions as appropriate. It should be noted that specific mitigation projects that did not have a widespread or regional impact were not reported, but action items with a more generalized impact were discussed or integrated into this section. In keeping with prior determinations, the general headings of end users, services, administration, and legislation were maintained as it was felt that these were still valid.

Following the discussion of goals and objectives, a thorough assessment of Local capabilities was presented as well as implementation tools for Local government. A prioritized list of mitigation actions based on performance is presented as opposed to detailed hazard mitigation projects. It was not considered technically or politically feasible for the plan to include a detailed identification of mitigation projects as required by 44 CFR Part 201.4. The reason being, such detail is beyond the scope of the plan as most mitigation projects are identified and implemented at the Local level. State level actions are more in the form of program and policy implementation and legislative enforcement. Finally, **Section 4** also addresses examples of mitigation actions and activities, multi-hazard mitigation strategies, and hazard specific strategies.

Local Mitigation Planning: The Mitigation Section of SEMO has been providing technical assistance to Local governments for the past several years. Starting in 1997 following the passage of the National Flood Insurance Reform Act of 1994, which mandated the preparation of floodplain management plans as a pre-requisite for the ability to obtain project funds, SEMO's Mitigation Section has facilitated planning at the Local level. With the enactment of DMA 2000, Local planning assistance has been intensified. Accordingly, the Mitigation Section currently provides technical assistance to any community that requests such assistance. Technical assistance has been provided at regional workshops, during one-on-one meetings with the community officials and via telephone conversations. Mitigation planning tools, guidance material, hazard maps, and data including: landslide susceptibility mapping, wind zone mapping, peak ground acceleration (seismic) mapping, as well, historical information including disaster declaration and NFIP report statistics describing both the number of policies and claims are frequently provided to communities engaged in the planning process. Finally, the Mitigation staff review and critique locally prepared draft mitigation plans prior to submitting the plans to FEMA for review and approval. In addition to the foregoing, **Section 5** details the State's efforts in assisting Local governments in identifying mitigation funding sources, ensuring that Local plans are integrated in mitigation planning and prioritizing Local assistance.

Plan Monitoring and Evaluation System: **Section 6** of the plan explains in detail the State's plan monitoring and evaluation process. The past several years have revealed certain weaknesses in the monitoring and evaluation methodology proposed in the prior plan, so revisions were incorporated into the Plan to build in more specific accountability and to assure timelines are monitored.

In collaboration with key State agencies, SEMO has developed Plan monitoring and maintenance procedures that will facilitate regular review and revisions to the Plan. SEMO will conduct an annual review of the Plan and the progress made toward achieving the listed planning goals, objectives, and action items. All pertinent information obtained during the year will be reviewed and documented by the Mitigation Staff. If deemed appropriate and necessary, the Plan will be revised as updated information becomes available. Each year, following FEMA approval/re-

approval of the State Mitigation Plan, SEMO will conduct a formal review of the Plan. Plan Status Reports will be distributed to State agencies or organizations in order to monitor progress toward the implementation of mitigation actions and obtain information required to update the Plan and keep it current. For example, agencies will be asked to complete a Status Report on their progress in accomplishing assigned projects with an emphasis on measurable outcomes. In particular, quantifiable information gathered from State agencies may include, but not be limited to, funding amounts, community technical assistance totals, Local plan development totals, advancements in natural hazard analysis, vulnerability assessments and regulations or policies that support mitigation programmatic development and descriptions of mitigation property protection and infrastructure projects. The formal plan review process will include an official reactivation of the Planning Committee during the second twelve month period following the date of FEMA Plan approval. All of the information gathered at the various planning meetings will be combined into the revised Plan and submitted to FEMA for review and approval.

Project Management Capability: Project Management is necessary for any mitigation program to be successful and to insure that approved mitigation measures (projects) are implemented in accordance with approved project provisions and published regulations and guidelines. Once a mitigation project has begun, SEMO Mitigation Staff will monitor the project's progress through closeout; follow-up contacts will also be maintained after project completion to ensure that approved projects are meeting their proposed intent.

SEMO Project Managers will ensure that all supporting documentation (building or regulatory agency permits) are in order and up to date, quarterly reports are received and submitted to FEMA on time, and all reimbursement requests are accurate and relevant to the projects authorized expenses. Approved reimbursement requests will be forwarded to SEMO Finance for processing and payment and every effort will be made to close projects out in a timely manner. The SEMO Mitigation Section will maintain the project file for three years from the date of the AGAR signature on the Closeout Form.

The Mitigation planning Section has demonstrated the capacity to manage the statewide planning development effort over several years. The number of approved plans in NYS has more than doubled in the past two years. SEMO will continue to allocate the resources needed to properly educate Jurisdictions in the requirements of DMA 2000, and also to provide the technical assistance to assist Jurisdictions toward development and approval of their Local plans.

On a statewide basis, New York has demonstrated outstanding managerial capability to implement and achieve numerous mitigation related goals. As demonstrated within the pages of this document, the mitigation related efforts undertaken by numerous agencies reveals a deep and unwavering commitment to mitigate hazards which threaten our citizens. In addition to the statewide implementation and review of the Plan, all DPC agencies have a mandate to assure that the safety and protection of New York States Citizens is never overlooked.

Program Management Capability/Assessment of Mitigation Actions: Sections 8 & 9 describe the State's program management capabilities and approaches to assess mitigation actions. Specifically, these sections of the plan outline the State's capabilities in environmental reviews, benefit cost analysis and management, and reporting on the various mitigation projects and on the assessment of mitigation actions. These activities and other activities are expertly managed by the appropriate sections of SEMO.

Effective Use of Available Mitigation Funding: Discussed in **Section 10** are the State's strategies to use or allocate the various mitigation funds that it manages. The objective process that the State uses to award funding from the HMGP, FMA, and PDM programs is clearly outlined.

Commitment to Comprehensive Mitigation Programs: Outlined in **Section 11** is a clear demonstration of the State's commitment to a comprehensive mitigation program. Information is provided on the State's support for Local mitigation planning, adoption, and enforcement of applicable codes, mitigation efforts for critical facilities, and the integration of mitigation into recovery operation.

Mitigation Plan Adoption Process: The final section of the plan, Section 12, outlines the adoption process for the plan and identifies several State and Federal authorities and references. After FEMA determines that the revised plan is approvable, the plan shall be formally adopted by the Disaster Preparedness Commission, and in so doing, the State of New York will assure that it will comply with all applicable Federal Statutes and Regulations during the periods for which it receives grant funding, and it will amend its plan whenever necessary to reflect changes in State or Federal Laws as required by 44 CFR 13.11 (d).

1.2 – State Background Information

The following sections provide background information for the State of New York. General information for the State is listed in **Table 1-1**.

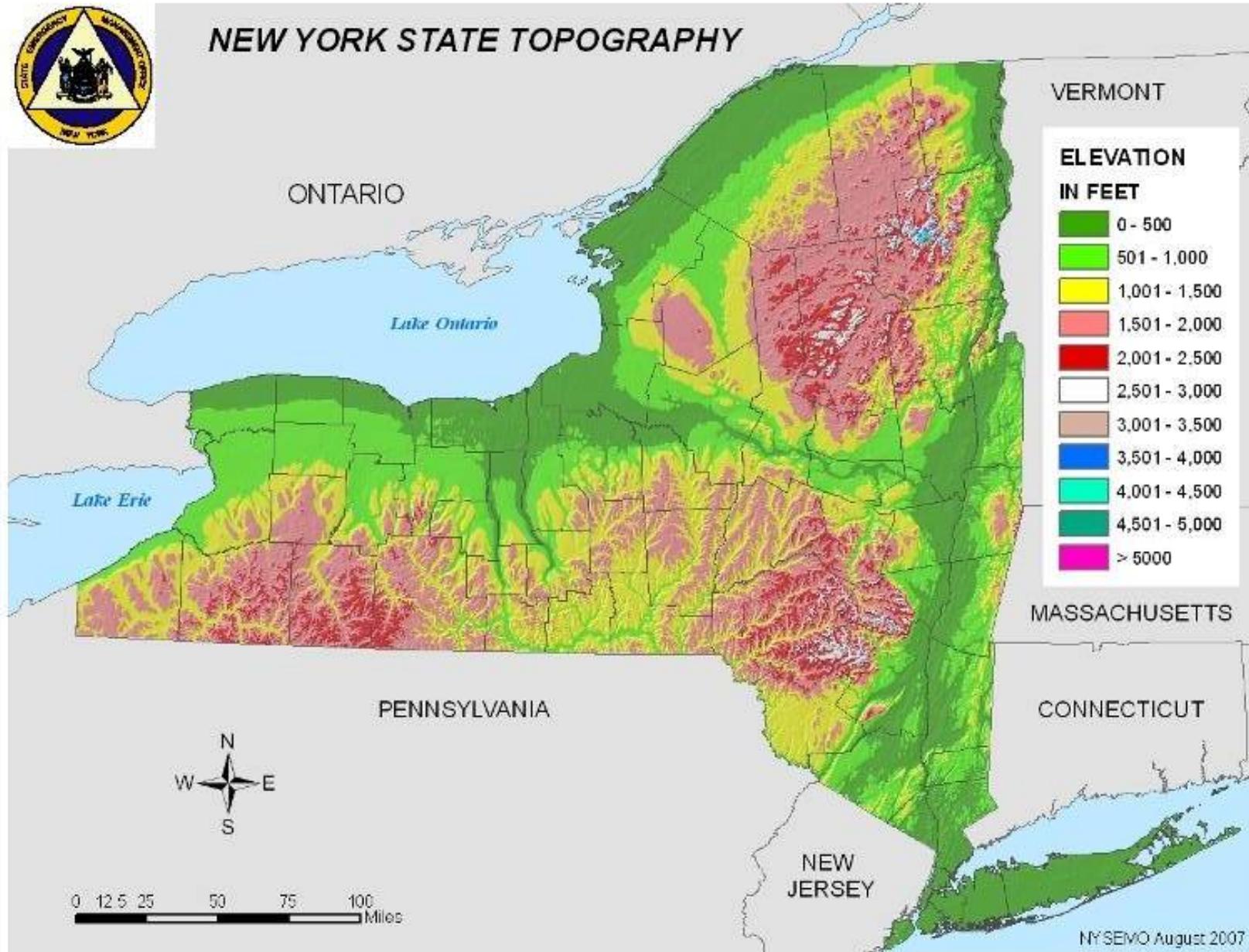
Table 1-1
New York State Facts

State Capital	Albany
Land Area	47,223.839 square miles
Depth (North-South)	310 miles
Length (East-West)	440 miles, including Long Island
Counties	62
Number of Cities	62
Number of Villages	553
Number of Towns	932
Population	19,306,183
State and Local Roads	112,956.17 miles
State Roads	16,489.91 miles
Local Road	96,466.26 miles
Number of Hospitals	259 estimated
Highest Point	Mount Marcy, 5,344 feet above sea level
Lakes, Ponds and Reservoirs	Over 6,700
Largest City	New York City
Largest Park	The Adirondack Park (larger than the Yellowstone, Yosemite, Grand Canyon, Glacier, and Olympic National Parks combined)
Largest Lake (within State borders)	Oneida, 79.8 square miles
Longest river	Hudson, 306 miles
Longest toll expressway in the world	Governor Thomas E. Dewey Thruway, 559 miles
State Motto	Excelsior, which means Ever Upward
State Nickname	Empire

1.2.1 – Land Area

The total area of New York State is 54,471.144 square miles (47,223.839 in land and 7,247.305 in inland water). There are four mountain ranges in New York State: the Adirondacks in the North, the Catskill and Shawangunk ranges in the South Central, and the Taconic in the East. The highest point in New York State is Mount Marcy, Essex County in the Adirondacks which is 5,344 feet above sea level. A topography map of New York State is shown as **Figure 1-1**.

Figure 1-1: New York State Topography



1.2.2 – Bodies of Water

There are 6,713 natural ponds, lakes, and reservoirs of one acre or more, 76 with an area of one square mile or more. There are 1,745 square miles of inland water, including some 4,000 lakes, ponds, and reservoirs.

The state has 70,000 miles of rivers and streams; 127 miles of Atlantic Ocean coastline; 9,767 miles of shoreline which includes 8,778 miles of Lake Shoreline, 231 miles of shorefront on the Long Island Sound, 548 miles of beachfront in the Long Island area, and 83 miles of coastal barrier islands off of Long Island.

Traversing the state from east to west, the New York State Barge Canal System is the longest internal waterway system in any state (800 miles), carrying over 2 million tons of cargo per year. The canal, however, is primarily used as a water recreation resource

1.2.2.1 – Rivers

The state has approximately 70,000 miles of rivers and streams, with the majority of these located along the Hudson River Valley.

Longest

The Hudson River is the longest river in the state at 306 miles long and drains an area of 13,370 square miles. Its average discharge is 21,500 cubic feet per second. The Hudson's most distant source is in Essex County, the Adirondack Mountains. Lake Tear of the Clouds is the highest lake in the state - 4,320 feet above sea level - and is considered the source of the Hudson River. The Hudson empties into the Atlantic Ocean at New York City.

Greatest Volume

The Niagara River has the highest flow, spilling 40 million gallons of water 180 feet downward each minute across a ledge nearly 2/3 of a mile wide at Niagara Falls.

1.2.2.2 – Lakes

There are over 6,700 natural ponds, lakes and reservoirs of one acre or more in the State of New York. There are 76 lakes with an area equal to or greater than one square mile and there are 10 natural fresh-water lakes of 10 square miles or more.

Oneida Lake, at 79.8 square miles, is the largest lake completely within the state. Other prominent lakes are the Finger Lakes, Otsego Lake, Lake George, Lake Placid, and Lake Champlain, which is 107 miles long.

Lake Champlain, in Essex County, covers a 490-square-mile area and includes islands that total about 55 square miles.

Lake Erie borders New York State for a linear distance of 64 miles. Its surface area in the U.S. totals 5,002 square miles.

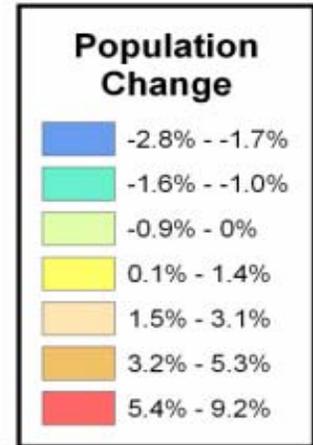
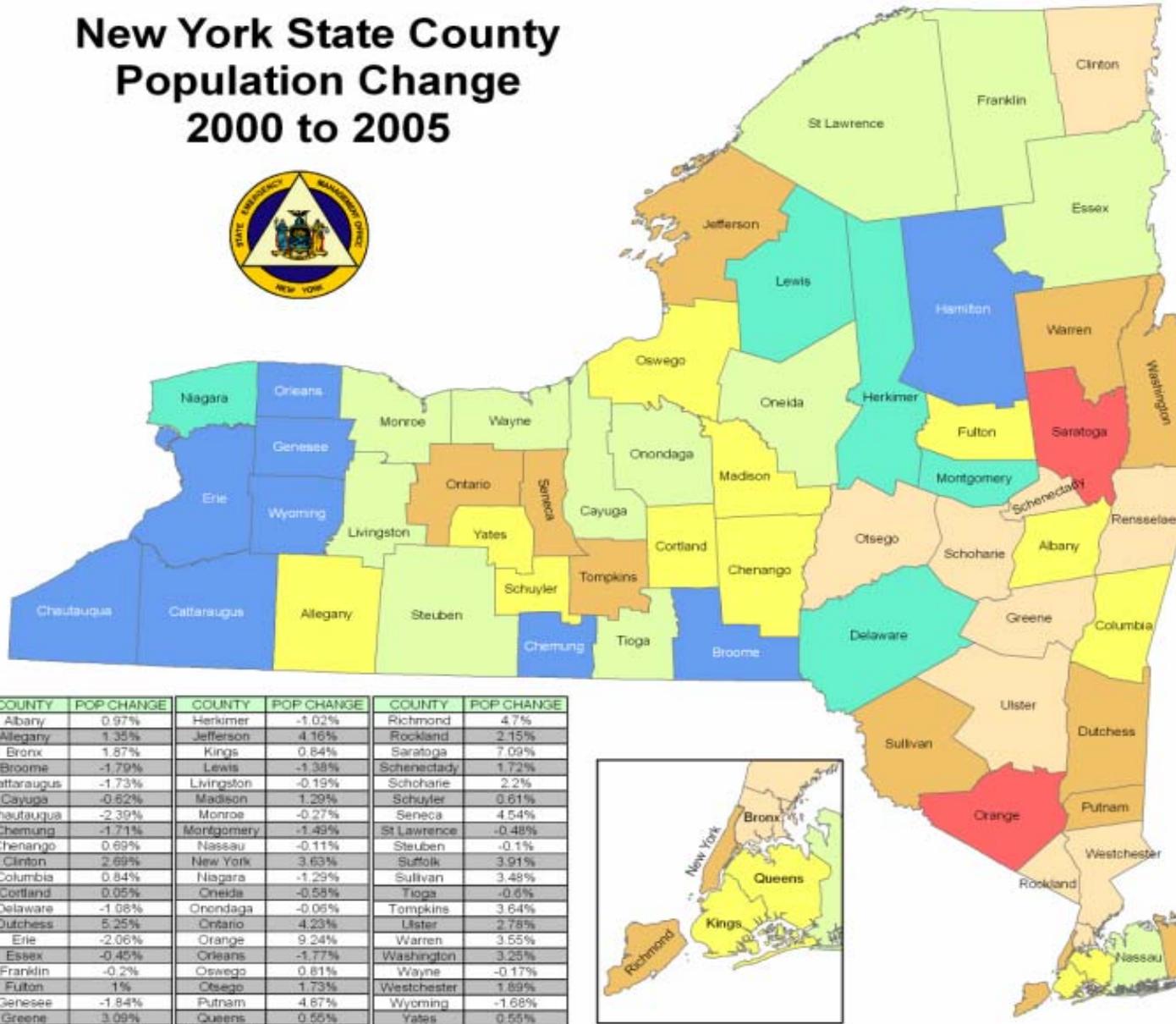
Lake Ontario forms the northern boundary of New York State and central Canada for a linear distance of 146 miles, and the area in the U.S. is 3,033 square miles.

1.3 – Population and Development

The State's 19 million people and general building stock (valued at roughly \$1.2 trillion) are not evenly dispersed throughout its borders, neither are they equally exposed to the major hazards of the state. Population and building stock are measures that provide indications of the potential vulnerability to natural hazards. **Figure 1-2** and **1-3** show the population change within NYS from 2000 to 2005 by County and Municipality. **Figure 1-4 and 1-5** present population data including recent population trends and a summary of population by percent of NY state total by municipality and county. The majority of the population resides in the Southeastern, and Western sections of the state.

Figure 1-2: New York State County Population Change 2000 – 2005

New York State County Population Change 2000 to 2005



COUNTY	POP CHANGE	COUNTY	POP CHANGE	COUNTY	POP CHANGE
Albany	0.97%	Herkimer	-1.02%	Richmond	4.7%
Alegany	1.35%	Jefferson	4.16%	Rockland	2.15%
Bronx	1.87%	Kings	0.84%	Saratoga	7.09%
Broome	-1.79%	Lewis	-1.38%	Schenectady	1.72%
Cattaraugus	-1.73%	Livingston	-0.19%	Schoharie	2.2%
Cayuga	-0.62%	Madison	1.29%	Schuyler	0.61%
Chautauq	-2.39%	Monroe	-0.27%	Seneca	4.54%
Chemung	-1.71%	Montgomery	-1.49%	St Lawrence	-0.48%
Chenango	0.69%	Nassau	-0.11%	Steuben	-0.1%
Clinton	2.69%	New York	3.63%	Suffolk	3.91%
Columbia	0.84%	Niagara	-1.29%	Sullivan	3.48%
Cortland	0.05%	Oneida	-0.58%	Tioga	-0.6%
Delaware	-1.08%	Onondaga	-0.06%	Tompkins	3.64%
Dutchess	5.25%	Ontario	4.23%	Ulster	2.78%
Erie	-2.06%	Orange	9.24%	Warren	3.55%
Essex	-0.45%	Orleans	-1.77%	Washington	3.25%
Franklin	-0.2%	Oswego	0.81%	Wayne	-0.17%
Fulton	1%	Otsego	1.73%	Westchester	1.89%
Genesee	-1.84%	Putnam	4.67%	Wyoming	-1.68%
Greene	3.09%	Queens	0.55%	Yates	0.55%
Hamilton	-2.81%	Rensselaer	1.78%		



Source:
U.S. Census Bureau,
2005 Population Estimates

NYSEMO GIS
July 2007

Figure 1-3 New York State Municipality Population Change 2000 – 2005

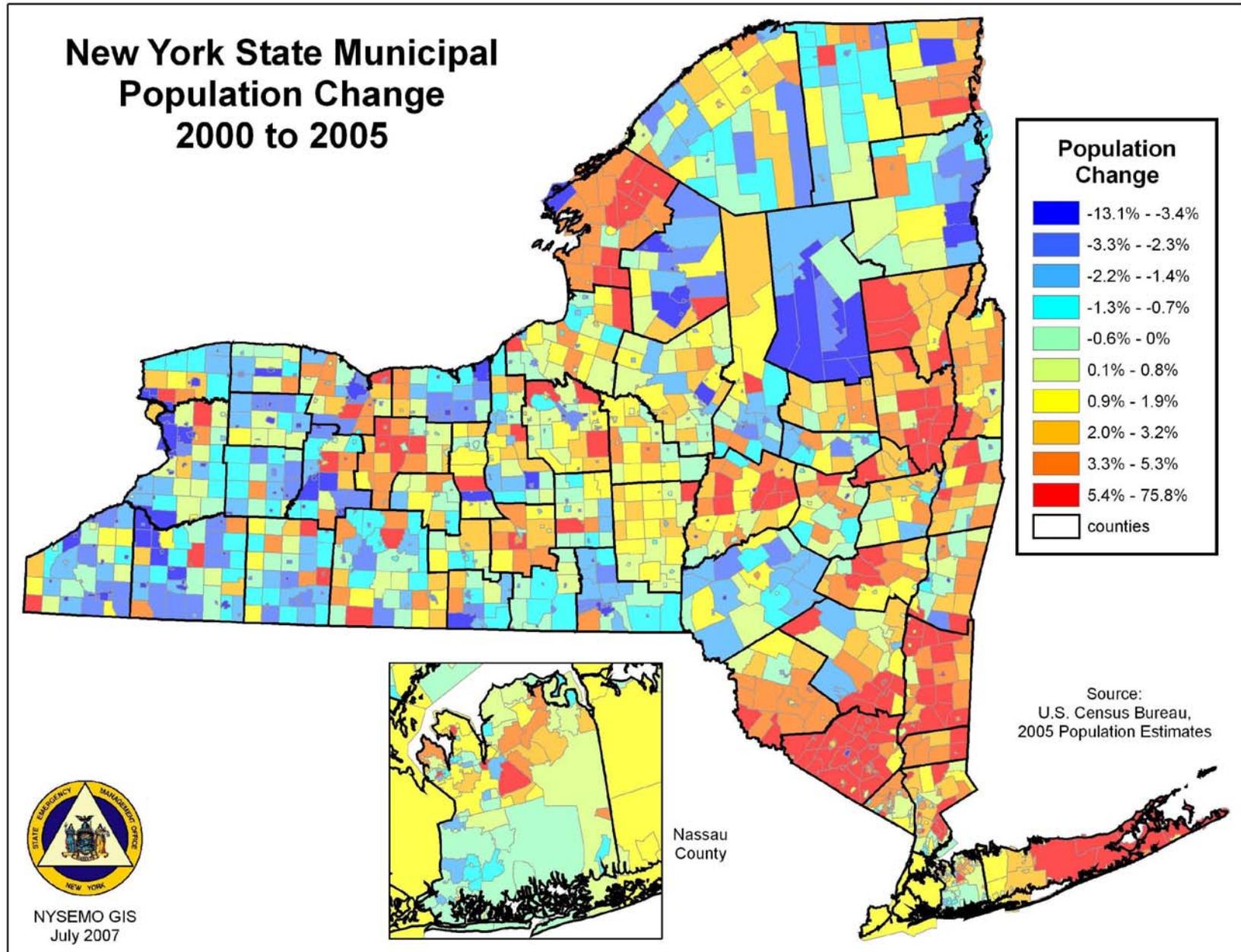


Figure 1-4: New York State Municipal 2005 Population Estimates

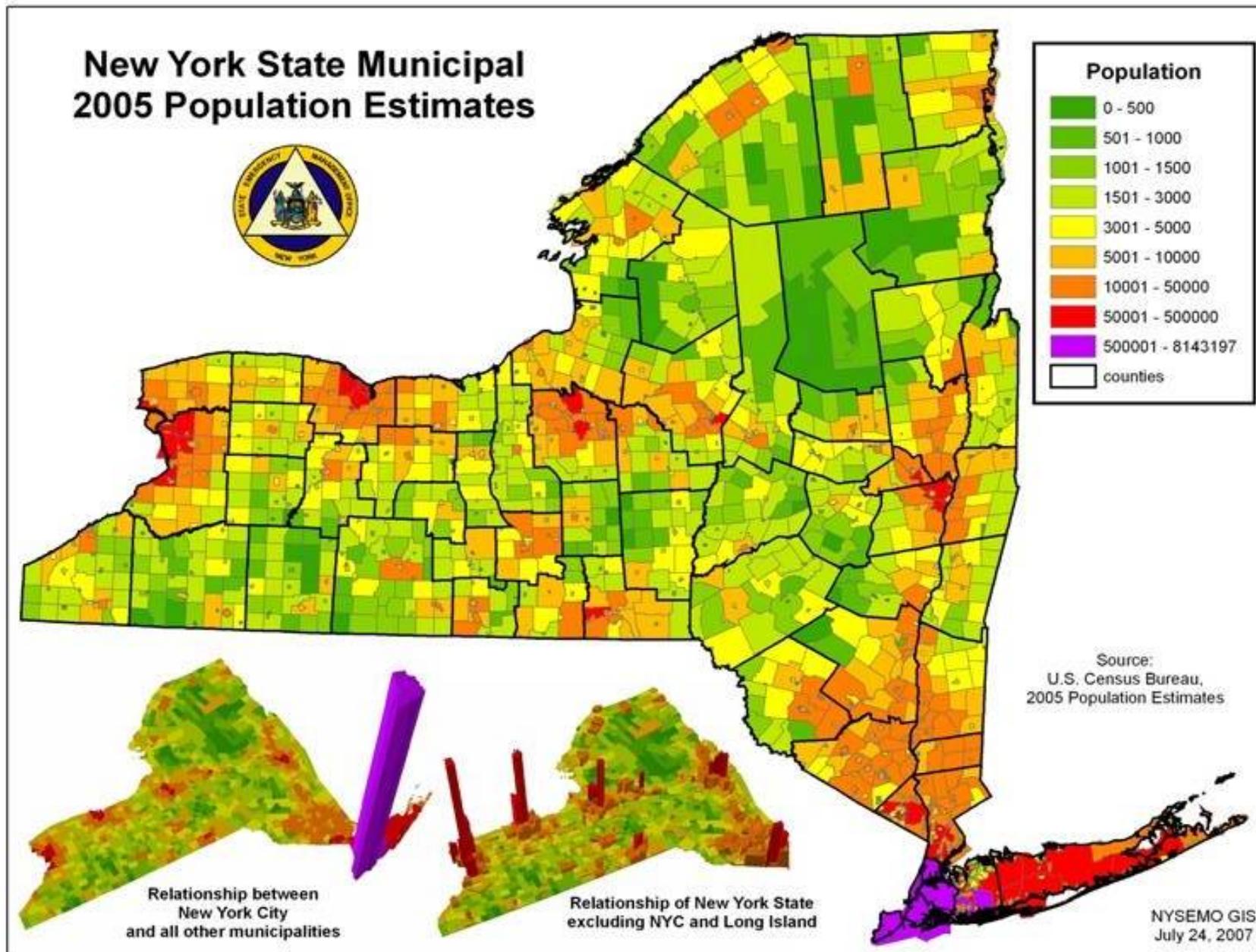


Figure 1-5: New York State County 2005 Population Estimates

New York State County 2005 Population Estimates

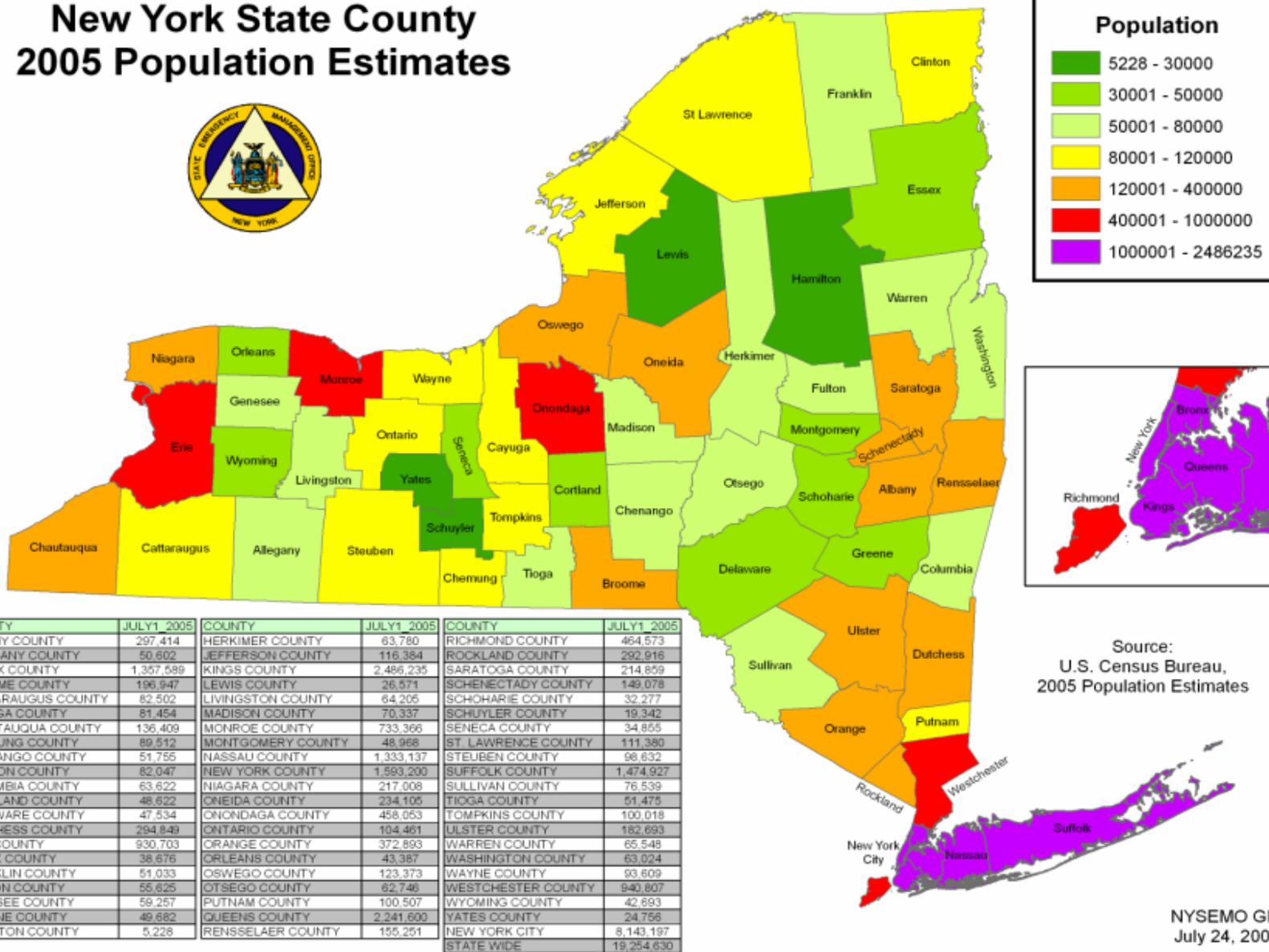


Table 1-2 presents the general building stock dollar value exposure by county.

**Table 1-2
New York State General Building Stock Dollar Value Exposure by County (\$000)**

COUNTY	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	AG	RELIGION	GOV	EDUCATION	TOTAL
Albany	15,255,303	3,503,104	348,262	26,828	257,975	498,617	229,524	20,119,613
Allegany	2,654,728	205,528	24,002	4,072	35,810	21,672	44,302	2,990,114
Bronx	47,763,305	8,376,990	590,055	9,666	359,432	48,481	563,649	57,711,578
Broome	9,311,283	1,530,790	281,759	24,856	125,506	35,343	73,243	11,382,780
Cattaraugus	4,388,381	506,320	94,922	14,149	52,445	31,687	64,668	5,152,572
Cayuga	4,121,137	575,239	118,299	21,709	59,561	22,710	63,636	4,982,291
Chautauqua	6,593,864	781,265	233,494	23,095	90,550	25,894	60,997	7,809,159
Chemung	3,965,121	730,810	205,948	7,886	50,055	20,557	22,000	5,002,377
Chenango	2,429,238	342,407	134,170	25,447	41,677	14,685	14,877	3,002,501
Clinton	3,242,792	566,991	117,427	7,557	33,322	16,785	71,198	4,056,072
Columbia	3,827,996	420,953	83,459	18,058	35,590	13,432	25,170	4,424,658
Cortland	2,358,716	375,598	99,403	6,496	28,062	14,545	38,766	2,921,586
Delaware	3,123,257	276,849	65,294	14,876	41,410	15,974	25,867	3,563,527
Dutchess	15,580,257	2,039,964	465,612	48,886	185,924	60,512	242,391	18,623,546
Erie	49,684,027	7,975,254	1,871,924	66,338	564,096	131,023	406,132	60,698,794
Essex	2,716,389	287,495	32,439	10,573	33,250	23,227	31,086	3,134,459
Franklin	2,714,670	319,325	41,025	20,311	37,214	35,476	48,612	3,216,633
Fulton	3,108,310	335,603	92,278	4,466	34,842	12,519	22,439	3,610,457
Genesee	2,896,868	442,554	148,348	14,342	43,131	36,842	62,448	3,644,533
Greene	3,116,936	335,320	53,582	10,038	36,199	17,201	44,710	3,613,986
Hamilton	883,908	53,035	6,912	433	8,669	4,824	5,938	963,719
Herkimer	3,505,133	372,551	66,106	9,276	29,250	17,279	24,628	4,024,223
Jefferson	5,308,266	614,481	118,005	11,398	42,813	26,314	33,078	6,154,355
Kings	112,905,255	15,116,410	2,530,429	22,679	1,344,608	220,016	1,073,220	133,212,617
Lewis	1,632,992	237,387	41,381	19,928	17,800	5,134	9,776	1,964,398
Livingston	3,072,685	335,814	83,925	10,551	53,863	17,048	65,911	3,639,797
Madison	3,505,665	379,812	136,993	34,309	36,437	56,198	60,100	4,209,514
Monroe	37,691,978	6,036,041	1,177,471	42,266	420,646	85,965	450,655	45,905,022
Montgomery	2,478,002	347,716	103,149	7,161	23,994	8,390	9,194	2,977,606
Nassau	89,953,540	14,196,396	1,842,284	94,373	644,965	181,233	2,400,550	109,313,341
New York	75,774,455	65,225,255	4,450,023	50,585	2,534,360	836,931	1,530,635	150,402,244
Niagara	11,163,264	1,202,306	395,610	25,286	95,680	46,316	101,279	13,029,741
Oneida	10,522,065	1,547,519	286,721	18,037	101,322	60,169	119,658	12,655,491
Onondaga	23,151,246	4,137,458	914,958	92,740	233,209	89,992	189,875	28,809,478
Ontario	5,472,352	725,954	194,746	17,555	44,434	13,541	106,633	6,575,215
Orange	17,973,981	2,676,600	542,636	56,954	185,345	1,073,339	169,664	22,678,519
Orleans	2,011,884	233,494	111,646	6,167	15,617	4,543	18,147	2,401,498
Oswego	5,769,111	688,404	90,709	8,693	61,681	21,405	81,233	6,721,236
Otsego	3,350,701	410,421	64,698	26,362	56,882	13,947	47,716	3,970,727
Putnam	6,146,789	576,385	827,036	10,328	59,335	11,166	19,004	7,650,043

COUNTY	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	AG	RELIGION	GOV	EDUCATION	TOTAL
Queens	91,019,571	9,926,176	1,919,944	24,240	722,188	116,449	577,815	104,306,383
Rensselaer	8,466,129	868,383	156,420	13,070	69,812	32,731	511,571	10,118,116
Richmond	22,733,050	1,606,191	152,003	7,614	101,135	12,175	117,893	24,730,061
Rockland	16,215,878	2,116,029	425,195	19,615	176,017	54,346	223,989	19,231,069
Saint Lawrence	5,686,706	628,781	163,069	12,757	46,485	29,155	36,549	6,603,502
Saratoga	11,191,083	1,298,623	193,420	24,371	69,548	17,490	237,809	13,032,344
Schenectady	7,714,998	1,907,774	598,534	6,803	56,628	16,056	29,259	10,330,052
Schoharie	1,778,971	214,507	37,575	17,588	44,478	9,691	27,565	2,130,375
Schuyler	1,017,533	60,691	10,047	1,929	6,454	4,097	3,347	1,104,098
Seneca	1,705,613	293,481	32,556	6,845	22,403	12,389	31,523	2,104,810
Steuben	5,001,249	596,202	189,481	25,005	49,611	15,872	83,515	5,960,935
Suffolk	86,848,991	12,502,395	3,264,084	225,917	600,390	193,733	457,219	104,092,729
Sullivan	5,401,804	482,607	78,125	14,755	50,612	19,438	33,863	6,081,204
Tioga	2,452,362	199,144	86,163	13,542	29,629	7,366	20,635	2,808,841
Tompkins	4,928,651	631,911	55,441	12,298	41,570	17,467	200,347	5,887,685
Ulster	10,062,381	1,226,486	278,292	57,990	107,699	34,777	101,147	11,868,772
Warren	3,711,285	610,222	79,109	6,691	40,367	13,882	13,794	4,475,350
Washington	3,181,050	256,888	106,725	29,063	33,101	17,072	22,453	3,646,352
Wayne	4,777,982	476,441	134,213	67,542	47,872	14,998	28,721	5,547,769
Westchester	56,947,555	9,235,555	1,451,128	89,984	674,934	109,616	638,620	69,147,392
Wyoming	2,029,101	234,194	37,568	16,889	24,201	15,429	11,474	2,368,856
Yates	1,460,154	157,321	22,869	7,642	13,600	4,022	15,317	1,680,925
TOTALS	965,457,947	190,571,800	28,559,101	1,646,880	11,185,695	4,659,183	12,097,034	1,214,177,640

1.4 – Summary of 2007 New York State Hazard Mitigation Plan Revisions

The following **Table 1-3** represents a summary of revisions and additions made to the 2005 NYS Hazard Mitigation Plan. While every effort was made to incorporate the best, readily available data, there were some sections that did not warrant revision. While not a specific regulatory element required for plan approval, several changes were made to facilitate and guide local jurisdictions in their planning efforts.

**Table 1-3
Summary of 2007 State Plan Revisions**

Section 1.0 - Introduction
<p>1.1 – Plan Summary: Minor revisions were made to this portion of the plan in order to describe some of the significant changes and to suggest to Jurisdictions some strategies to utilize as they develop their plans. The statistical information about NYS was reviewed and updated as appropriate. Population information was updated and supplemental maps were incorporated to reflect population trends.</p>

Section 2.0 – State Coordination Efforts & Capabilities

2.1 – Multi-Hazard Mitigation Planning Process

The planning process section was updated to reflect activities undertaken to accomplish the 2007 Plan Update while coordinating the input and involvement of large numbers of people and agencies. References to the DPC were not significantly changed; efforts were made to update the organizational chart and the listing of State agencies. The information gathering process and the listing of collaborative efforts were extensively updated to reflect recent planning activities. All appropriate plans and information were reviewed and the listing of resources was updated, and some Local plans were specifically cited as they had significant relevance to some elements of the plan update.

2.2 & 2.3– Integration with State Planning Efforts

Extensive effort went into an update of this section, particularly in the description of the NYS CEMP and how it integrates several other planning categories with the hazard mitigation effort in NYS. All DPC agencies were asked to review the programs and services described in this section, and where appropriate, they submitted revised text to better demonstrate capabilities and mitigation efforts. A few agencies, such as DEC, DOT, and DOS submitted interesting and helpful additions to their section of the plan. Additional research was conducted to update the descriptions and services of the Federal Agencies. Agencies such as the Delaware River basin Commission, The Susquehanna River Basin Commission and the Genesee / Finger Lakes Regional Planning Council participated in the planning process, and submitted material for these sections.

2.4 - State Approach for Integrating Mitigation Initiatives

A significant addition to this section was the inclusion of NY Alert, which provided NYS with a much improved warning system in the face of pending disasters. All agencies referenced were provided opportunity to update their information to assure accuracy.

Section 3.0 - Risk Assessment

This section of the plan was extensively revised to reflect the most current, readily available information relative to each

Hazard. In addition, the previous plan had devoted much attention to the ranking of hazards on a Statewide and Regional basis, but the presentation appeared to have some misleading concepts, especially for the Local Jurisdictions. Efforts were made to create this section of the plan with appropriate detail and information describing each hazard so Jurisdictions could model their plans after the State plan.

In the previously approved plan, a great deal of effort went into a methodology of ranking hazards for the State and for several regions. However, this was changed significantly in Section 3. Each hazard was completely researched and updated with the most readily available information. Historical data was significantly researched and expanded. An expansion of the number hazards included in the addition of hail and extreme heat. All hazard profiles will show expanded information and offers several improved examples of GIS data to predict vulnerability. NFIP maps, Earthquake Loss, and Landslide maps show some improved presentation. Unfortunately, some data was not updated or available, such as the Q3 data for **some** counties and the OGS Fixed Asset inventory.

Section 4.0 – Mitigation Strategy

Some of the detail in the Mitigation Strategy Section was edited to eliminate inaccuracies and outdated text. However, after discussion and consideration, the DPC agencies felt that the Mitigation Vision Statement, and the Goals / Objectives were still relevant to the needs of the State of New York. The group felt the term “Customers” was inaccurate, and preferred to change it to “End Users”. Goal 6 calling for a hazard mitigation outreach effort was eliminated because it was felt the State has incorporated that into several other goals/objectives. Minor additions or edits were made to the objectives under Goal 10- Wildfire, Goal 11- Utility Down Time and Administration. The hazards of Hail and Extreme Heat were added to the list of hazards for the state in **Table 4-2**. In addition, the status of each past Mitigation Activity was evaluated on **Tables 4-3** through **Tables 4-8**. Additional information is presented for various types of flooding hazard. In an effort to integrate Local plans into the State plan, we inserted **Tables 4-9 to 4-15**. These tables list mitigation activities extracted from Local plans, but the table cross references the State plan activities in a code format on the right side of each table. Throughout the plan, several references were made to the Severe Repetitive Loss Program (SRL) and the Repetitive Flood Claims Program (RFC), both of which are newer additions to the menu of mitigation funding sources.

Section 5.0 –Local Mitigation Planning

Section 5 does not immediately reveal significant changes. However, the Mitigation Section does show promise for an expanded availability of GIS information for planning purposes. The current plan shows examples of a more sophisticated mapping methodology in various sections, but particularly **Section 3**. The Training Section has been expanded to reflect the significance of training across the State and how it relates to mitigating many hazard related elements. Numerous exercises are conducted, and they serve to prepare communities and to help mitigate the impact of future hazards. **Table 5-1** appears similar to the past plan's list of Funding sources, but it was checked for accuracy and updated where necessary. Almost all governmental funding sources have funds available on a cyclical basis or after a budget authorization tied to specific activities or events. Therefore, seeking funding for a specific mitigation activity is typically an opportunistic funding activity, and the availability of funds cannot easily be predicted well in advance. The majority of **Section 5** has not been significantly changed from the prior approved plan.

Section 6.0 –Plan Maintenance Procedure

This section was significantly revised due its weakness in terms of accountability and scheduling activities needed to monitor, evaluate, and maintain the plan. This section now has more specific requirements for an annual review and for the three year update of the plan. **Table 6-1** was created to set dates and determine responsibility for each level of plan maintenance. Both DPC agencies and SEMO Senior Management will be involved twice a year in the plan monitoring process. It is felt that these improvements in this section will assist the plan is remaining a living document.

Section 7.0 –Monitoring Progress of Mitigation Activities

Section 7 was reviewed and revised by the SEMO Mitigation Department. The monitoring process of activities and projects was proven to still be relevant, in use, and up to date. The **Section 7.2 Review of Plan Progress** was removed because the review and maintenance of the plan is described and addressed in detail in **Section 6 Plan Maintenance Procedures**.

Section 8.0 – Program Management Capability

Updates in **Section 8** pertain to an example of a Benefit Cost Analysis of Mitigation Projects as well as an update of **8.3 Financial and Project Reports**, pertaining to HMGP, FMA, PDM, RFC, and SRL funds.

Section 9.0 – Assessment of Mitigation Actions

Minor revisions were made to **Section 9** the removal of SEMO region information and a more limited community based assessment is detailed.

Section 10.0 – Effective Use of Available Mitigation Funding

Section 10 was updated in many areas. The HMGP funding figures and tables were updated and by County as well as Project Type. The following tables were updated to reflect the current position of localities within New York State regarding Mitigation Plan status, **Table 10-3 Funded Mitigation Planning Communities**, **Table 10-6 Flood Mitigation Assistance Program FMA Projects**, and **Table 10-7 Flood Mitigation Assistance Program Planning Grants**.

The following tables were created to give a detailed representation of Local Plan status **Table 10-4 Approved Local All-Hazard Mitigation Plans** and **Table 10-5 Municipalities Not in the Planning Process**. Sub-Sections **10.1.4 Repetitive Flood Claims Program (RFC)** and **10.1.5 Severe Repetitive Loss Program (SRL)** were created for the update to reflect the relevance and use of these projects within New York State.

Section 11.0 – Commitment to a Comprehensive Mitigation Program

Minor changes occurred within **Section 11**. **Section 11.2.3 New York City Building Codes** was updated to reflect the changes in the codes that have occurred since the 2005 plan. **Section 11.3.2 Recovery Operations** was updated with new disaster and emergency declaration information

Section 12.0 – Mitigation Plan Adoption Process

The addition of **Section 12.2.3 Sample Adoption Resolution** was created to show the final process in which the Hazard Mitigation Plan is approved and the format of such approval by New York State.