

SECTION 4: COUNTY PROFILE

Profile information is presented and analyzed to develop an understanding of a study area, including the economic, structural, and population assets at risk and the particular concerns that may be present related to hazards analyzed later in this plan (e.g., low lying areas prone to flooding or a high percentage of vulnerable persons in an area). This profile describes the general information of the County (physical setting, population and demographics, general building stock, and land use and population trends) and critical facilities located within Saratoga County.

GENERAL INFORMATION

On February 7, 1791, Saratoga County was formed from Albany County. Four towns originally made up Saratoga County, which included Ballston, Stillwater, Halfmoon and Saratoga (Saddlemire, Date Unknown). Saratoga County is now comprised of two cities, 19 towns and nine villages. In 2007, Saratoga County had an estimated population of 215,852. According to the U.S. Census Bureau, Saratoga County is the 17th most populated county in New York State (U.S. Census, 2008).

Physical Setting

This section presents the physical setting of the County, including: location, hydrography and hydrology, topography and geology, climate, and land use/land cover.

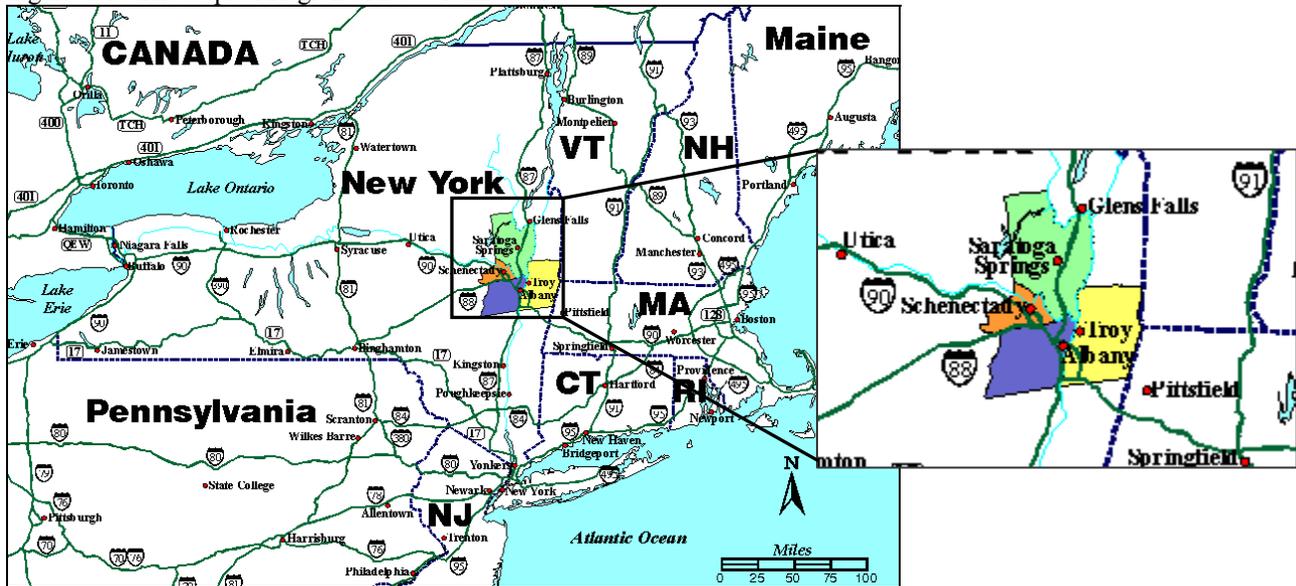
Location

Saratoga County is located in the northeastern section of New York State. The County has a total area of 844 square miles (812 square miles of land and 32 square miles of water) (U.S. Census Bureau, 2008). The County is located in the Capital-Saratoga Region of New York State (New York State Tourism, Date Unknown).

Saratoga County is bordered to the north by Warren County, to the south by Schenectady and Albany Counties, to the east by Washington and Rensselaer Counties, and to the west by Hamilton, Fulton and Montgomery Counties. The Hudson River forms the eastern and northern boundary and the Mohawk River forms the southernmost boundary. The Adirondack Mountains, the Kayaderrossas and Sacandaga Rivers, numerous lakes and streams, and farmland all make up the landscape of the County (Saratoga County Historian's Office, Date Unknown).

Saratoga County is located within the Capital District. This region refers to the four counties surrounding the New York State capital of Albany. These counties include: Albany County, Schenectady County, Rensselaer County and Saratoga County. It is located in the east-central portion of the State, at the confluence of the Hudson and Mohawk Rivers. It covers a total land area of 2,200 square miles. The term "Capital District" was originated in the 1920s in an effort between the Albany Chamber of Commerce and the Albany Times Union (Capital District Regional Planning Commission, Date Unknown; Wechsler, Date Unknown). Figure 4-1 shows the location of the Capital Region.

Figure 4-1. The Capital Region of New York State



Source: Capital District Regional Planning Commission, Date Unknown

Hydrography and Hydrology

The major rivers of Saratoga County include the Hudson River, Mohawk River and the Sacandaga River. The Hudson River, for more than 70 miles of its course, sweeps along the eastern border of Saratoga County. The Mohawk River is found on the southern side of Saratoga County. The Sacandaga River enters Saratoga County on its western border and crosses the whole width of the County and enters into the Hudson River (Sylvester, 1878). Other waterbodies in the County include the Great Sacandaga Lake, Saratoga Lake, Galway Lake, Fish Creek, Kayaderosras Creek, Hans Creek, and the North Chuctanunda Creek.

The land area of the County drains into one major river basin, which contains four watersheds. A river basin is the portion of land drained by a river and its tributaries. It encompasses the entire land surface divided and drained by many streams and creeks that flow downhill into each other and eventually into one river. The final destination is either an estuary or an ocean. A river basin sends all the water falling on the surrounding land into a central river and eventually out to sea (Office of Environmental Education, Date Unknown).

A watershed is the area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater. Watersheds come in all different shapes and sizes, with some covering millions of square miles while others cover only a few acres. They cross county, state and international boundaries (EPA, 2008; Conservation Technology Information Center, Date Unknown).

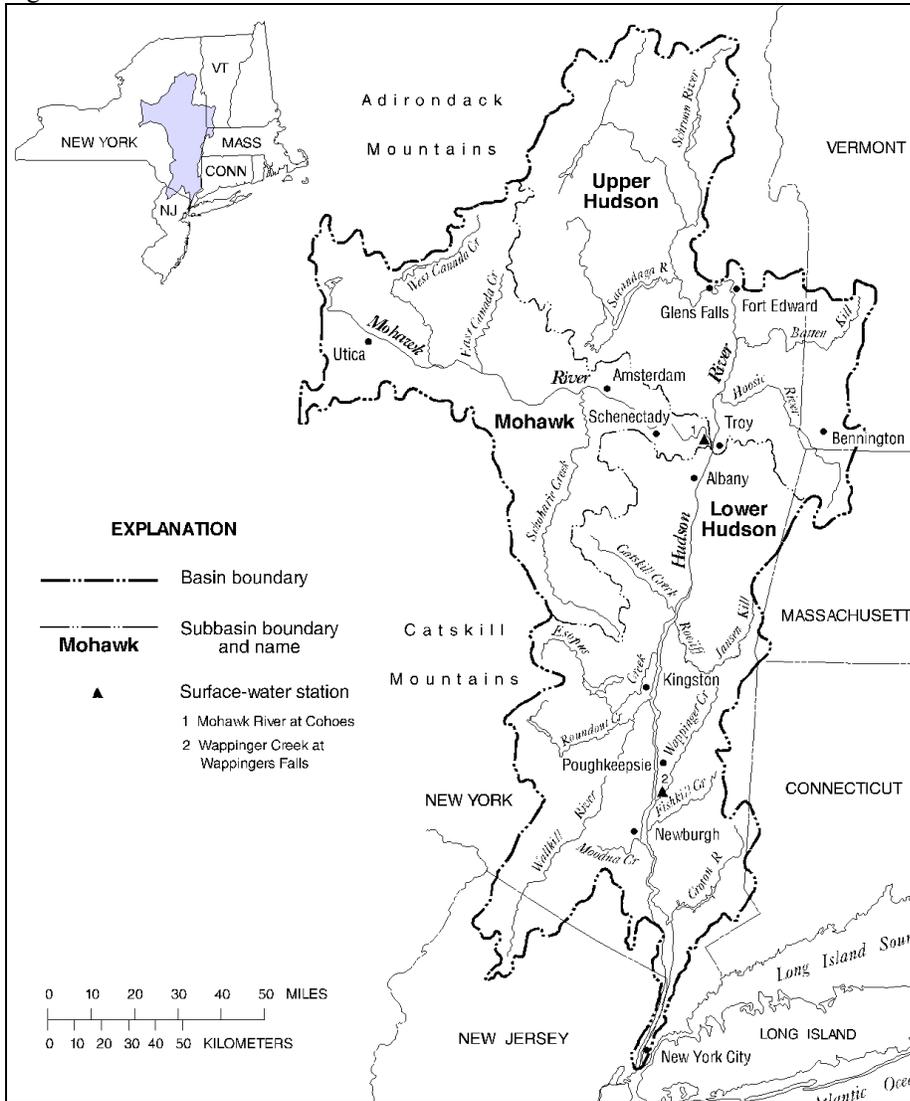
Both river basins and watersheds are areas of land that drain to a particular waterbody, such as a lake, stream, river or estuary. In a river basin, all water drains into a large river. The term watershed is used to describe a smaller area of land that drains to a smaller stream, lake or wetland. There are smaller watersheds within a river basin.

Hudson River Basin

The Hudson River Basin has an area of 13,400 square miles and lies almost entirely with New York State, with parts in Vermont, Massachusetts, New Jersey and Connecticut. The Basin is divided into three

major subbasins: the upper and lower Hudson River and the Mohawk River (Figure 4-2). The upper Hudson River and the Mohawk River subbasins are partially located in Saratoga County. The source of the Hudson River is Lake Tear of the Clouds, a small lake in the Adirondack Mountains, 4,322 feet above sea level. The River flows south-southeast out of the mountain region through primarily forestland. At Hudson Falls, several tributaries flow into the River and the elevation drops to about 200 feet above sea level. From Hudson Falls to Albany, the River is maintained for commercial traffic at a depth of 12 feet. From Hudson Falls south, the River flows through forest and farmland to its confluence with the Mohawk River near Troy in Rensselaer County (Freeman, 1991).

Figure 4-2. Hudson River Basin



Source: Phillips and Hanchar, 1996

The lower Hudson River begins at the Federal Dam in Troy, just downstream from the confluence with the Mohawk River. The lower Hudson River is tidal and can undergo a change in its flow direction four times a day. It has a total length of 154 miles. The lower Hudson River is maintained at a depth of at least 32 feet for commercial traffic from the Port of Albany to New York City. Some areas of the River can be as deep as 200 feet. The lower Hudson River flows south through farmland for about 60 miles but also passes through some industrial areas before entering the Hudson Highlands area. In this section, it

flows through a deep, narrow channel with steep banks and forested mountain slopes. The River then widens near Haverstraw, where its width is 3.5 miles, then narrows as it passes the cliffs of the Palisades and continues south to upper New York Harbor (Freeman, 1991).

Upper Hudson River Subbasin

The upper Hudson River subbasin is comprised of the drainage area of Upper Hudson River, which is a tributary to the Hudson River. It is located above the River's confluence with the Mohawk River at the Troy Dam. The subbasin has a total drainage area of 4,620 square miles. It covers approximately one-third of the Hudson River Basin and includes much of the middle portion of eastern New York State, a portion of southwestern Vermont and a small part of northeastern Massachusetts. Major rivers in the upper Hudson River subbasin include the Hudson, Sacandaga, Schroon, Battenkill, and Hoosic Rivers. Approximately 76-percent of the subbasin is forest, 15-percent is farmed and only 3.4-percent is urban (Phillips and Hanchar, 1996; NYSDEC, 2007). In Saratoga County, the Upper Hudson River forms the eastern and northern boundary of the County. The Champlain Canal of the New York State Canal System extends through the County, parallel with the Hudson River.

Sacandaga Subbasin

The Sacandaga subbasin has a total of 1,003 miles of streams and a drainage area of 1,057 square miles (NYSDEC, 1998). It is found in four New York State Counties, which include: Fulton, Hamilton, Saratoga, and Warren (EPA, 2009).

Hudson-Hoosic Subbasin

The Hudson-Hoosic subbasin has a total of 1,328 miles of streams and a drainage area of 1,893 square miles (NYSDEC, 1998). It is found in five New York State counties, which include: Albany, Rensselaer, Saratoga, Warren and Washington. This subbasin is also found in Massachusetts and Vermont (EPA, 2009).

Mohawk River Basin

The Mohawk River Basin is centrally located in New York State. The Mohawk River is the largest tributary to the Hudson River. It has a total drainage area of approximately 3,460 square miles and represents approximately 25-percent of the entire Hudson River Basin. The Mohawk River starts between the Adirondack Mountains and Tug Hill Plateau in north-central New York State. It flows toward the east, carving a wide valley between the Adirondacks to the north and the Central Appalachian Mountains to the south. The entire basin is located within the borders of the State. The Mohawk River Basin area includes all of Montgomery County, most of Schoharie County, large portions of Schenectady, Greene, Fulton, Herkimer and Oneida Counties, and parts of Albany, Saratoga, Delaware, Otsego, Hamilton, Madison and Lewis Counties (NYSDEC, 2003). About 55-percent of the basin is forested, 40-percent is farmed, and only 6.2-percent is urban (Phillips and Hanchar, 1996). In Saratoga County, the Mohawk River forms the southernmost boundary of the County. The Eric Canal of the New York State Canal System, located within this Basin, extends through the County, parallel with the Hudson River.

Geology and Topography

Saratoga County is part of two physiographic provinces. The northwestern portion of the County is located in the Adirondack Highlands physiographic province. The remainder of the County is located within the Hudson-Mohawk Lowlands province. The boundary between the two provinces is a series of northeast trending block faults. These faults are located primarily in the southeastern section of the

Adirondack Highlands and are marked by long, straight valleys. Sacandaga Reservoir and Lake George occupy two of these valleys. The areas to the northwest of the fault lines have been displaced upward. The amount of displacement varies at the different locations along the fault lines. The Saratoga/McGregor fault line passes through Saratoga Springs and controls the locations of many mineral springs found in this area (USDA, Date Unknown).

The topography of the Adirondack Highlands Province is characterized by old mountain ranges composed of bedrock that is highly resistant to erosion. The highest mountains in New York State, Mt. Marcy and Mt. Alogonquin, both occur in this province. Each of these mountains is over 5,000 feet. Elevations in the Saratoga County portion of this province range between 800 feet above sea level along the southeastern side of the Kayaderosseras Range and to nearly 2,800 feet above sea level at Tenant Mountain in the northeastern corner of the County (USDA, Date Unknown).

In the Kayaderosseras Range, elevation and relief is lower to the east and southeast of the Range in the Hudson-Mohawk Lowlands. It decreases to an elevation of approximately 20 feet above sea level at Waterford, located on the Hudson River (USDA, Date Unknown).

Bedrock within Saratoga County is primarily crystalline in the Adirondack Highlands Region and of the sedimentary origin in the Hudson-Mohawk Lowlands. The crystalline rock is Precambrian in age and is the oldest rock in the country. The crystalline rock is composed of several different types of metamorphic and igneous rocks. Lower Ordovician to Cambrian-age sedimentary rocks border the Adirondack Highlands and extend eastward into the Hudson-Mohawk Lowlands near Saratoga Springs. These rocks are between 500 and 600 million years old. Further to the east, southeast and south, the underlying bedrock consists of Middle Ordovician shales and sandstones of the Canajoharie and Schenectady Formations. These rocks are between 450 and 500 million years old (USDA, Date Unknown).

Climate

The climate of New York State is very similar to most of the Northeast U.S. and is classified as ‘Humid Continental’. Differences in latitude, character of topography, and proximity to large bodies of water all have an effect on the climate across New York State. Precipitation during the warm, growing season (April through September) is characterized by convective storms that generally form in advance of an eastward moving cold front or during periods of local atmospheric instability. Occasionally, tropical cyclones will move up from southern coastal areas and produce large quantities of rain. Both types of storms are typically characterized by relatively short periods of intense precipitation that produce large amounts of surface runoff and little recharge (Cornell, Date Unknown).

The cool season (October through March) is characterized by large, low-pressure systems that move northeastward along the Atlantic coast or the western side of the Appalachian Mountains. Storms that form in these systems are characterized by long periods of steady precipitation in the form of rain, snow, or ice, and tend to produce less surface runoff and more recharge than the summer storms because they have a longer duration and occasionally result in snowmelt (Cornell, Date Unknown).

In winter, the average temperature in Saratoga County is 22 degrees Fahrenheit (°F) and the average daily minimum temperature is 12 °F. Average seasonal snowfall for the County is approximately 62 inches. The greatest snow depth at any one time during the period of record was 42 inches. On average, 95 days of the year have at least one inch of snow on the ground (USDA, Date Unknown).

During the summer months, the average temperature is 69 °F and the average daily maximum temperature is 82 °F. The highest recorded temperature in the County occurred on June 30, 1964 and was

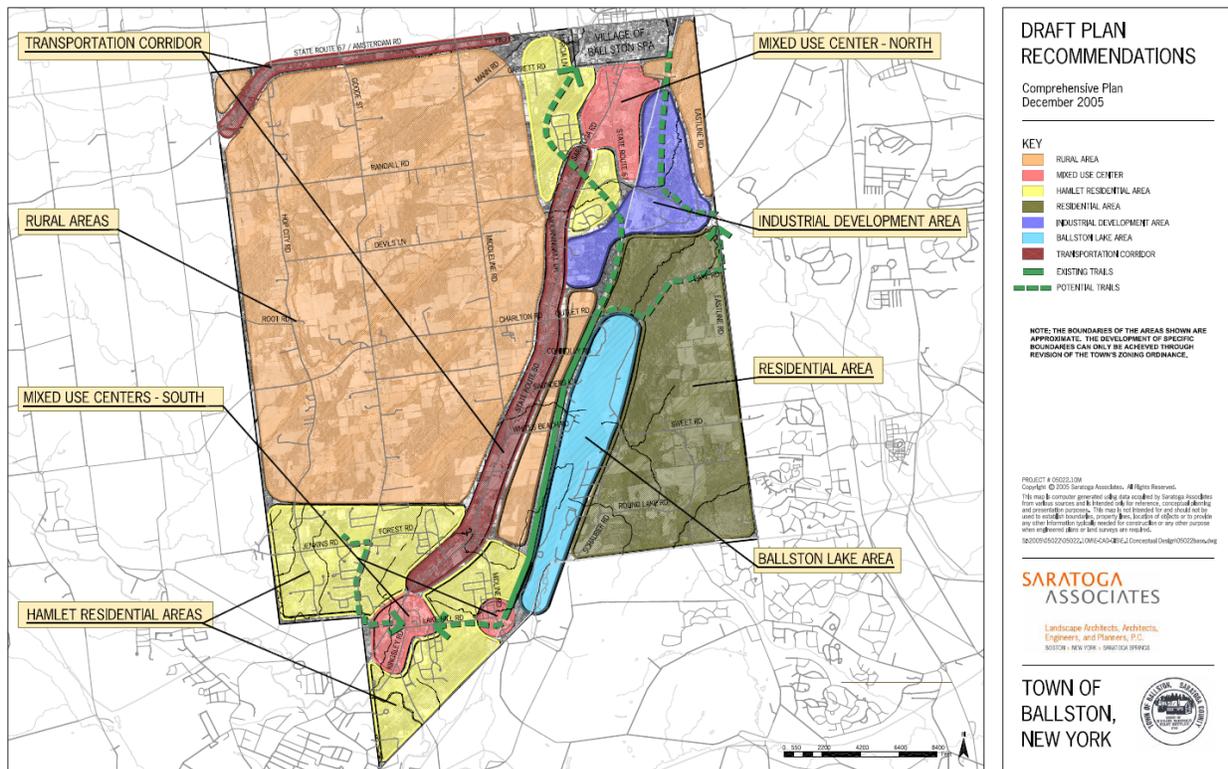
99 °F. The total annual precipitation for the County is approximately 41 inches. Of this, 22 inches usually falls between April and September. The growing season for most crops is within this period. Thunderstorms occur on about 26 days each year, mostly occurring during the summer months (USDA, Date Unknown).

Land Use and Land Cover

Several municipalities within Saratoga County have adopted Comprehensive Plans that summarize their community’s land uses. This subsection describes the land uses for the Towns of Ballston, Clifton Park, Galway, Halfmoon, Saratoga, Stillwater, Wilton and Villages of Galway, Schuylerville, and Victory.

Town of Ballston: The Town of Ballston’s Comprehensive Plan summarizes their land use areas within Figure 4-3. They include mixed use centers, residential, rural and industrial areas (Saratoga Associates, 2005).

Figure 4-3. Town of Ballston Land Use Areas



Source: Saratoga Associates, 2005

Town of Clifton Park: The Town has approximately 2,000 acres of active farmlands. Agricultural lands are located in western Clifton Park, with the most significant core area of adjacent, larger farm parcels located west of Vischer Ferry Road and Route 146 A from the Route 146 area south to Riverview Road (Town of Clifton Park, 2006).

According to the Town’s Comprehensive Plan, the Town is divided into three planning areas: Area 1 is located in the eastern section of the Town and is generally bordered by Vischer Ferry Road and CR 82 to the west, the Malta and Round Lake boundaries to the north, the Halfmoon/Clifton Park boundary to the east, and the County boundary to the south. This area contains approximately 16,525 acres of land and

water with diversified land uses including residential, commercial and industrial centers (Town of Clifton Park, 2006).

Area 2 is located in the western portion of Town bordered by the Mohawk River to the south, the hamlet of Rexford to the west, the Town boundary to the north and Route 146A and Vischer Ferry Road to the east. This area totals approximately 14,553 acres or 45 percent of the Town's land area. Land uses are mainly residential and agricultural with little commercial or industrial development. Area 3 is located in the western part of the Town and includes the Hamlet of Rexford. This area consists of primarily single-family residences with some commercial development (Town of Clifton Park, 2006).

Town and Village of Galway: The Town of Galway is approximately 28,800 acres, or 44.3 square miles. According to the Town of Galway Comprehensive Plan, land use has historically been centered on agriculture. However, as agriculture has declined, the most common land uses are residential and commercial. Residential development is centered in the Village of Galway, around Galway Lake, and in the hamlets and concentrated along roads. Additionally, forestry operations are an important and unregulated land use. The Town of Galway has delineated four zones: an agricultural-residential district (AR); a neighborhood commercial district (C-2), a commercial retail district (C-1) and a lake district (L). Fifty-seven percent of parcels are now built on (Town of Galway, 2002).

Town of Halfmoon: Land uses in the Town of Halfmoon include rural, agricultural, undeveloped, suburban, commercial, industrial, and institutional. According to the Town of Halfmoon’s Draft Comprehensive Plan: A Lifelong Community (2003), Table A-1 summarizes the total acreage of each land use type in Town (Figure 4-4) (Town of Halfmoon Comprehensive Committee and Clough, Harbour & Associates, LLO, 2003).

Figure 4-4. Town of Halfmoon’s Existing Land Use

Land Use	Acres	% of Total
Residential (total)	6246	30
• Single Family	3603	17
• Multi-Family	361	2
• Rural Residential	2282	11
Commercial	1617	7
Industrial	840	4
Public Services	253	1
Community Services	379	2
Agriculture	5947	28
Rec. & Entertainment	333	1
Vacant	5838	27
Wild & Forested Land	57	0.3
Total	21,510	100.3*

**Does not equal 100% due to rounding*

Source: Town of Halfmoon Comprehensive Committee and Clough, Harbour & Associates, LLO, 2003.

Town of Stillwater: According to the Stillwater Comprehensive Plan, land uses in the Town and Village include a mixture of rural residential, agricultural, undeveloped, suburban residential, commercial, industrial, and institutional. Medium high densities occur along Saratoga Lake and within the Village of Stillwater. Figure 4-5 are tables from the Comprehensive Plan that summarizes the land use acreage within the Town and Village (The Chazen Companies, 2005).

Figure 4-5. Land Use within the Town and Village of Stillwater

Land Use – Town and Village of Stillwater		
Property Class	Acres	Percent Total
Agricultural	3,582.45	13.88%
Commercial	436.37	1.69%
Community Services	170.49	0.66%
Industrial	100.81	0.39%
Public Services	486.55	1.89%
Recreation and Entertainment	320.21	1.24%
Residential	7,337.59	28.44%
Vacant Land	7,245.30	28.08%
Wild, Forested, Conservation Lands And Public Parks	6,124.09	23.73%
Total:	25,803.84	100%

Land Use –Village of Stillwater		
Property Class	Acres	Percent Total
Agricultural	14.45	1.92%
Commercial	42.87	5.71%
Community Services	113.80	15.15%
Industrial	4.87	0.65%
Public Services	11.41	1.52%
Recreation and Entertainment	19.32	2.57%
Residential	236.03	31.42%
Vacant Land	278.08	37.02%
Wild, Forested, Conservation Lands And Public Parks	30.32	4.04%
Total:	751.14	100%

Land Use – Town of Stillwater		
Property Class	Acres	Percent Total
Agricultural	3,568.00	14.24%
Commercial	393.5	1.57%
Community Services	56.69	0.23%
Industrial	95.94	0.38%
Public Services	475.14	1.90%
Recreation and Entertainment	300.88	1.20%
Residential	7,101.56	28.35%
Vacant Land	6,967.21	27.81%
Wild, Forested, Conservation Lands And Public Parks	6,093.77	24.32%
Total:	25,052.70	100%

Source: The Chazen Companies, 2005

Town of Saratoga, Villages of Schuylerville and Victory: According to the Town of Saratoga's 2002 Comprehensive Land Use Plan, land use is characterized as predominantly residential. The two village centers have commercial land uses (Schuylerville and Victory) with increasing commercial development along the major traffic corridors. Industrial land use is minimal; therefore, residents commute out of Town to neighboring communities and counties manufacturing or light industry is located (The LA Group, 2002).

Town of Wilton: The Town of Wilton's land uses are residential, commercial, industrial and agricultural (21st Century Planning Commission and Clough, Harbour & Associates LLP, 2004).

POPULATION AND DEMOGRAPHICS

According to the 2000 U.S. Census, Saratoga County had a population of 200,635 people. This is in agreement with the data included in HAZUS-MH which is based on the 2000 U.S. Census data. Table 4-1 presents the population statistics for Saratoga County based on the 2000 U.S. Census data. Figure 4-6 shows the distribution of the general population density (persons per square mile) by Census block. For the purposes of this plan, data available in HAZUS-MH are used (representing 2000 data); this data is considered appropriate given the relatively small population decrease between 2000 and 2006.

DMA 2000 requires that HMPs consider socially vulnerable populations. These populations can be more susceptible to hazard events, based on a number of factors including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing. For the purposes of this study, vulnerable populations shall include (1) the elderly (persons aged 65 and over) and (2) those living in low-income households.

Table 4-1. Saratoga County Population Statistics (2000 U.S. Census)

Location (Municipality)	Census/ HAZUS-MH 2000 Pop.	HAZUS-MH Pop. Over 65	HAZUS-MH Low- Income Pop. **
Town of Ballston	7,548	923	316
Village of Ballston Spa	5,556	919	540
Town of Charlton	3,954	509	81
Town of Clifton Park	32,995	3,288	839
Town of Corinth	3,511	421	302
Village of Corinth	2,474	414	306
Town of Day	920	164	83
Town of Edinburg	1,384	233	137
Town of Galway	3,375	382	192
Village of Galway	214	26	14
Town of Greenfield	7,362	691	452
Town of Hadley	1,971	270	133
Town of Halfmoon	18,474	1,941	1,023
Town of Malta	12,401	1,068	402
City of Mechanicville	5,019	940	613
Town of Milton	12,728	925	540
Town of Moreau	10,458	1,182	587
Town of Northumberland	4,603	325	216
Town of Providence	1,841	163	98
Village of Round Lake	604	38	17
Town of Saratoga	3,400	399	244
City of Saratoga Springs	26,186	3,717	2,282
Village of Schuylerville	1,197	168	156
Village of South Glens Falls	3,368	595	471
Town of Stillwater	5,878	580	311
Village of Stillwater	1,644	209	121
Village of Victory	544	76	41
Town of Waterford	6,311	876	272

Location (Municipality)	Census/ HAZUS-MH 2000 Pop.	HAZUS-MH Pop. Over 65	HAZUS-MH Low- Income Pop. **
Village of Waterford	2,204	328	223
Town of Wilton	12,511	971	604
Saratoga County	200,635	22,741	11,616

Source: Census 2000 (U.S. Census Bureau); HAZUS-MH MR3, 2007

Note: Pop. = Population

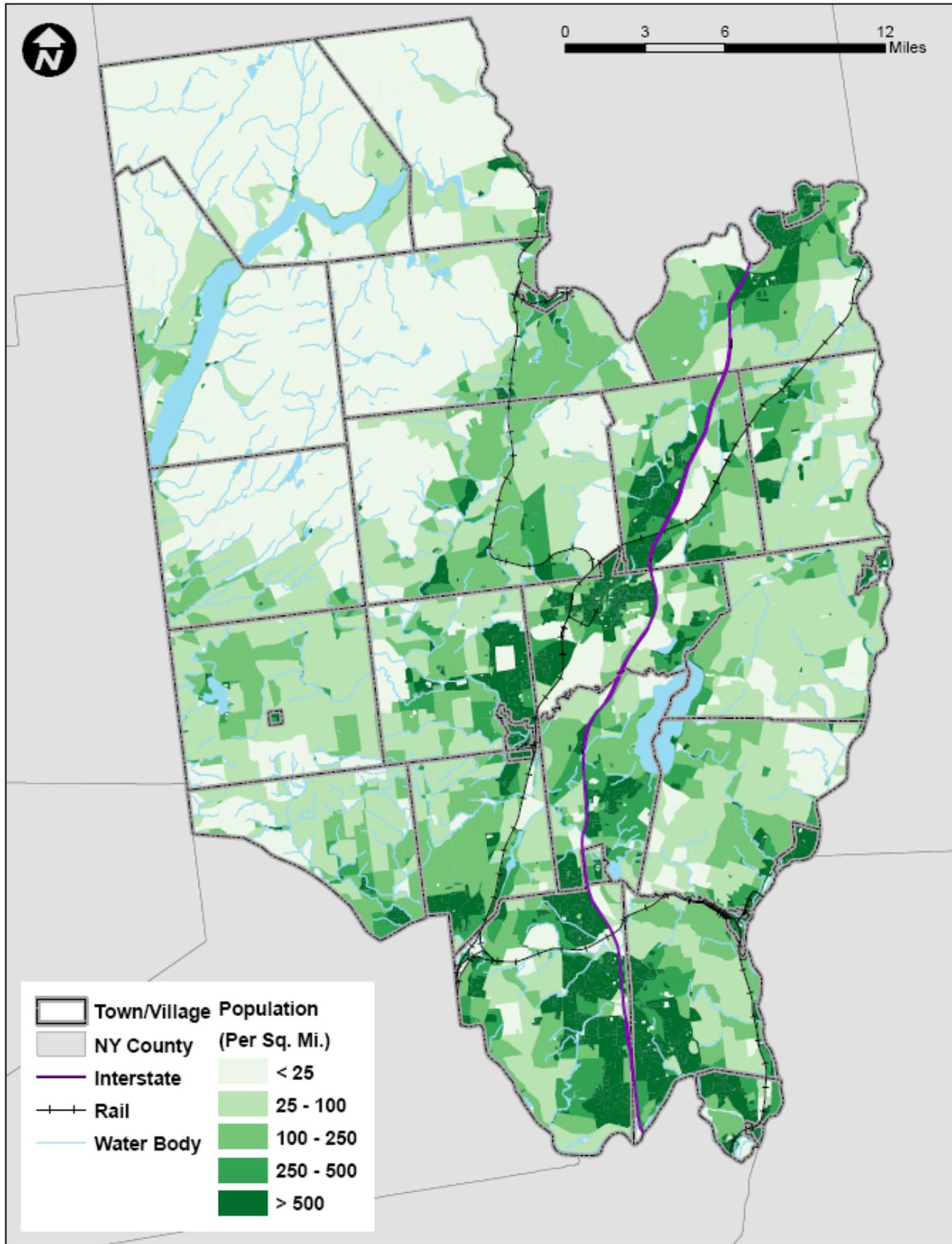
* Individuals below poverty level (Census poverty threshold for a 3-person family unit is approximately \$15,000)

** Households with an income of less than \$20,000

It is noted that the census data for household income provided in HAZUS-MH includes two ranges (\$0-10,000 and \$10,000-\$20,000/year) that were totaled to provide the “low-income” data used in this study. This does not correspond exactly with the “poverty” thresholds established by the U.S. Census Bureau, which identifies households with an annual household income below \$15,000 per year as “low income” for this region. This difference is not believed to be significant for the purposes of this planning effort.

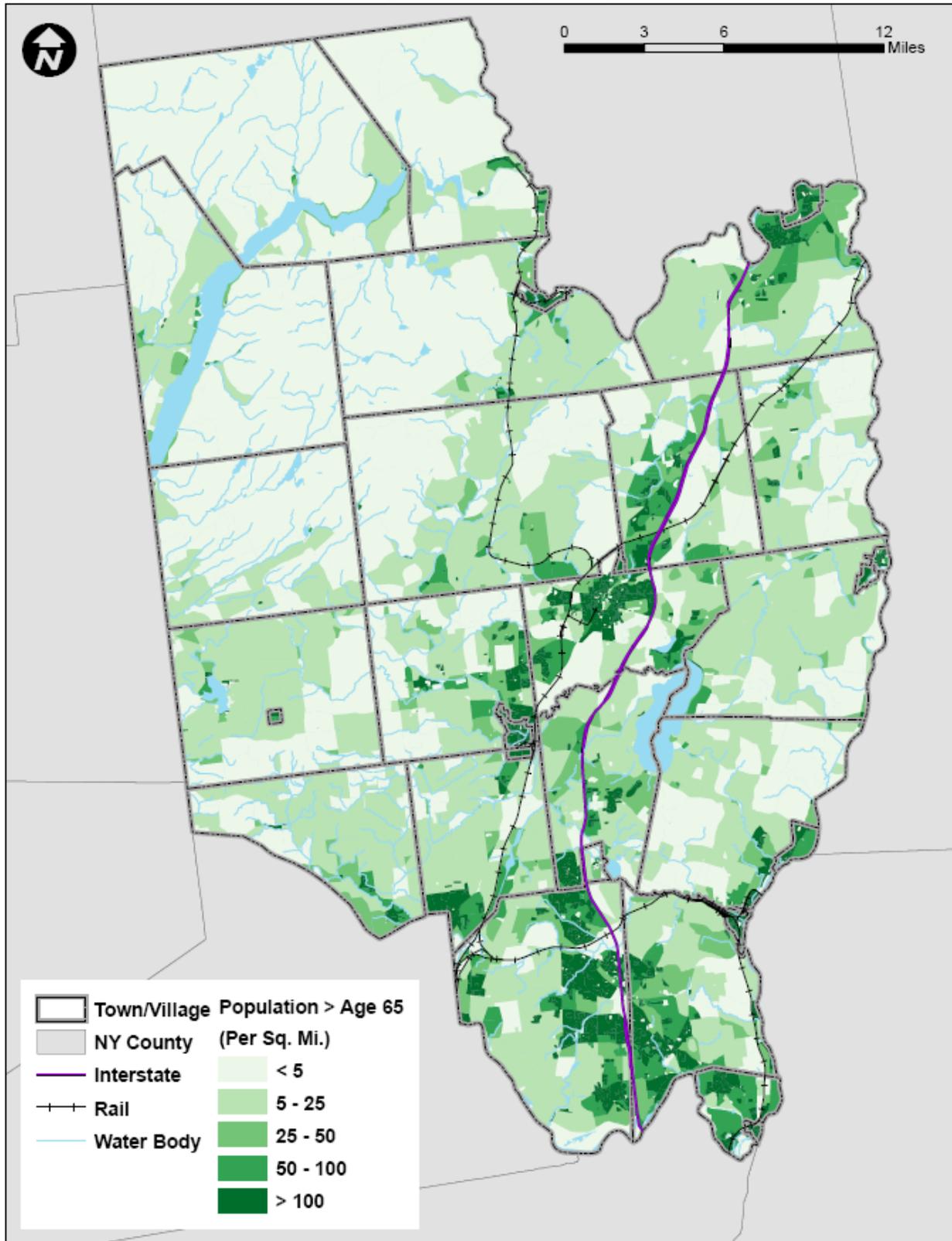
The 2000 U.S. Census data also identified that in 1999, 7,710 of the 78,226 households as having an annual income of less than \$15,000. The 2000 U.S. Census data indicates that in 1999 a total of 11,238 persons living in households below the poverty level (5.7%). Figure 4-7 shows the distribution of persons over age 65 in Saratoga County, while Figure 4-8 shows the distribution of low-income persons.

Figure 4-6. Distribution of General Population in Saratoga County, New York



Source: HAZUS-MH MR3, 2007

Figure 4-7. Distribution of Persons over the Age of 65 in Saratoga County, New York



Source: HAZUS-MH MR3, 2007