SECTION 4: COUNTY PROFILE

Greene County profile information is presented in the plan 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 provides general information for Greene County (physical setting, population and demographics, general building stock, and land use and population trends) and critical facilities located within the County.

GENERAL INFORMATION

Greene County was formed by an act of the New York State Legislature on March 25, 1800. It included the towns of Catskill, Coxsackie, Freehold and Durham, and had a total population of approximately 13,000. By 1852, the present pattern of towns had emerged, following a series of sub-divisions and combinations. Today, Greene County consists of 14 towns and 5 villages and has more than 48,000 residents (Greene County Department of Planning and Economic Development, 2000). According to the 2006 U.S. Census, the estimated Greene County population was 49,822. Greene County is one of the 62 counties in New York State and is comprised of 14 towns and 5 villages. The County ranks as the 52nd most populated county in the State (U.S. Census Bureau, 2000). Greene County is bordered to the north by Albany and Schoharie Counties, to the south by Ulster County, to the east by Columbia County and the Hudson River and to the west by Delaware County.

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

Greene County is located in the northern end of the Catskill Mountains and part of the Upper Hudson Valley Region. The County is situated in the mid-eastern part of New York State and is bordered to the south by Ulster County, to east by Columbia County and the Hudson River, to the north by Albany and Schoharie Counties, and to the west by Delaware County. The County is made up of 19 jurisdictions (including towns and villages) and encompasses an area of approximately 653 square miles. Greene County extends 37 miles east and west and 25 miles north and south (Greene County Department of Planning and Economic Development, 2000). The County is divided into three specific areas: river towns, valley towns, and mountain towns. Figure 4-1 displays these different areas.



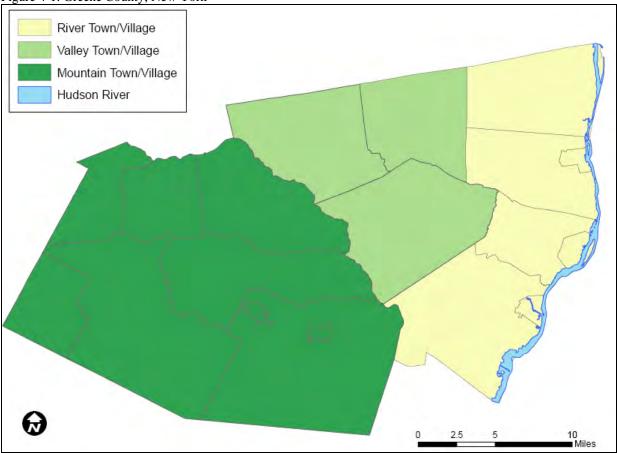


Figure 4-1. Greene County, New York

Source: Greene County GIS

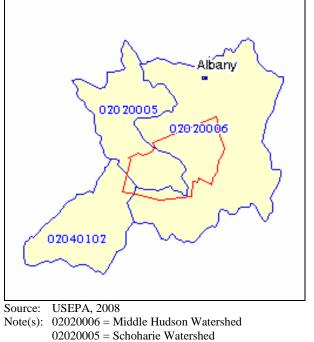
Hydrography and Hydrology

Numerous ponds, lakes, creeks and rivers make up the waterscape of Greene County, which lie within three major watersheds (which are further located within the major Hudson River Basin and sub-basins of the State). The major bodies of water and waterways within the County include Schoharie Reservoir, Schoharie Creek (Main Stem), Manor Kill, Batavia Kill, West Kill, East Kill (within the Mohawk River Basin) and the Stony Clove Brook, Broadstreet Hollow Brook, Catskill Creek, Hollister Lake, Kaaterskill Creek, Shingle Kill, Potic Creek, Hans Vosen Kill and Sleepy Hollow Lake (within the Lower Hudson River Basin) [New York State Department of Environmental Conservation (NYS DEC), 2006].

Three watersheds and one drainage basin make up Greene County. According to the U.S. EPA, a watershed is the area of land where all of the water that is under it or drains off of it drains or seeps into a marsh, stream, river, lake or groundwater (USEPA, 2007; Conservation Technology Information Center, Date Unknown). Figure 4-2 depicts the watersheds of Greene County.







02040102 = East Branch Delaware Watershed

The three watersheds within the County include: Middle Hudson Watershed, Schoharie Watershed, and the East Branch Delaware Watershed. The Middle Hudson Watershed is located in Massachusetts and New York (USEPA, 2008) and covers 10 counties, including Greene County. This watershed has a total drainage area of 2,401 square miles and 1,965 miles of streams. Thirty different bodies of water are located within this watershed, including but not limited to the Hudson River, Catskill Creek and Stony Clove Brook (NYS DEC, 1998).

The Schoharie Watershed is located in New York State and is found in seven different counties, including Greene County (USEPA, 2008). This watershed has a total drainage are of 930 square miles and over 930 miles of streams (NYS DEC, 1998). It drains into the Mohawk River (Reigner, 1951). Thirteen different bodies of water are located within the Schoharie Watershed, including but not limited to the Schoharie Creek, Batavia Kill and East Kill (NYS DEC, 1998).

The East Branch Delaware Watershed is located in New York and Pennsylvania and is found in five different counties, including Greene County (USEPA, 2008). This watershed has a total drainage area of 836 square miles and approximately 560 miles of streams. Eight different bodies of water are located within the East Branch Delaware Watershed (NYS DEC, 1998).

Within these watersheds of the County is one distinctive major drainage basin known as the Hudson River Basin. The Hudson River Basin, which includes the Upper Hudson, Middle Hudson, Lower Hudson and Mohawk River Sub-basins, is one of the largest drainage basins on the eastern seaboard. The Hudson River Basin encompasses about 13,300 square miles and lies in parts of eastern New York State, Vermont, New Jersey, Massachusetts, and Connecticut (NYS DEC, 2006; Philips and Hanchar, 1996) (Figure 4-3).





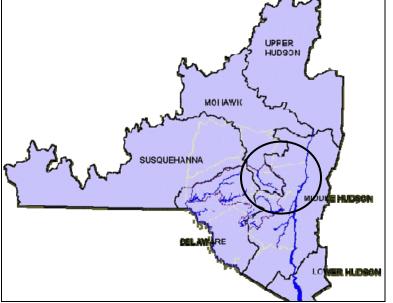
Figure 4-3. County Boundaries in the Hudson River Basin in New York and Adjacent States

Source: Phillips and Hanchar, 1996

Within the Hudson River Basin, Greene County falls within the Middle Hudson River and Mohawk River Sub-Basins (Figure 4-4). A small percentage of the southwestern section of the County falls within the Delaware River Basin, which consists of minor tributaries that lead to the East Branch Delaware River.



Figure 4-4. Sub-Basins within New York State



Source(s): Catskill Center for Conservation and Development (GIS Atlas), Date Unknown; NYS DEC, 2006 Note (1): Circle indicates the approximate location of Greene County.

Note (2): Some sources indicate that the Middle Hudson (as seen in this Figure) is actually only one sub-basins known as the Lower Hudson. However, documentation provided by the NYS DEC indicates the basin is separated as shown in this figure.

Within the Mohawk River Sub-Basin, the Schoharie Creek is one of two major tributaries of the Mohawk River that extends north to south-southeast in Greene County. Encompassing approximately 315 square miles, 80-percent of the Schoharie Creek watershed is located primarily in Greene County, New York (GCSWCD, 2007). The Schoharie Creek drains eight Greene County municipalities, including large sections of the Towns of Hunter, Lexington, Jewett, Windham, Ashland, Prattsville and the Villages of Hunter and Tannersville. Traveling from east (Hunter) to west (Prattsville), the primary tributaries that drain into the Schoharie Creek are the East Kill, West Kill, Little West Kill, Batavia Kill, Huntersfield Creek, Johnson Hollow Brook, and directly into the reservoir the Bear Kill and Manor Kill (Figure 4-5) (Catskill Streams, Date Unknown; GCSWCD, Date Unknown).



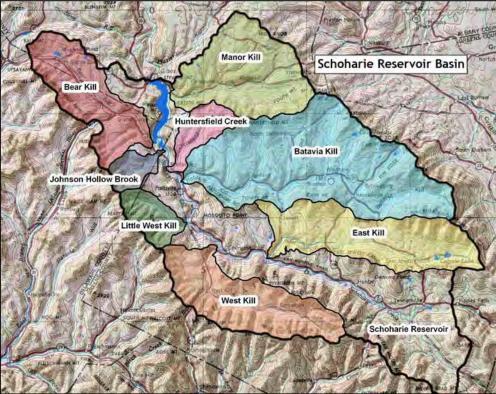


Figure 4-5. Tributaries Draining Into the Schoharie Creek

Source: GCSWCD, Date Unknown

Within the Middle-Hudson River Sub-Basin, the Catskill Creek is one of four major tributaries of the Hudson River that extends north to southeast in Greene County. The upper portion of the Catskill Creek is a coldwater stream with whitewater areas, which is relatively uncommon in the Hudson Valley Region (New York State Division of Coastal Resources, Date Unknown).

Greene County is also a part of what of the New York City Reservoir Watershed, which covers an area of over 1,900 square miles in the Catskill Mountains and the Hudson River Valley. The reservoir systems in the watershed supplies approximately 1.4 billion gallons of water each day to nearly 9 million people in New York City, much of Westchester County, and areas of Orange, Putnam, and Ulster Counties (USEPA, 2008). Greene County partially lies within the Catskill District of the Catskill/Delaware Watershed, which is one of three systems (Delaware, Catskill, Croton) that delivers water to the New York City West-of-Hudson water supply system. This system includes the Schoharie Reservoir, Shandaken Tunnel, Ashokan Reservoir and the Catskill Aqueduct west of the Hudson River. Approximately 40% of the City's average water supply demand is provided by the Catskill System (Cornell Cooperative Extension of Ulster County, 2007).

Seven jurisdictions of Greene County are incorporated into the Catskill System, including Halcott, Lexington, Hunter, Jewett, Prattsville, Ashland and Windham. The Shandaken Tunnel, and its outfalls, is a handmade aqueduct that connects the Schoharie Reservoir to the Upper Esopus (Cornell Cooperative Extension of Ulster County, 2007). It carries water underground from the Schoharie Reservoir in Gilboa, New York (Schoharie County) through the Towns of Prattsville and Lexington in Greene County. The water flows south and finally empties into a man-made pool in Allaben, New York, within the Township of Shandaken and furthers feeds into Esopus Creek (Ulster County) and Ashoken Reservoir before being routed to the New Croton Reservoir (Westchester County) within the Croton System (Catskill Center for Conservation and Development, Date Unknown).



Topography

The topography of Greene County is dominated by the valleys of the Hudson and Mohawk Rivers. There is limited flat land which is surrounded by uplands comprised of the Berkshire Hills to the east, the Catskill Mountains to the west and south, and the foothills of the Adirondack Mountains to the north. The County has flat land primarily on the eastern portion near the Hudson River (Moran, Stahl and Boyer, 2006).

Greene County is divided into two physiographic provinces, provinces the Appalachian Plateau and the Ridge and Valley Province, by the Northeast Escarpment of the Great Northern Catskills. The southwestern half of Greene County is located in the mountainous Catskill section of the Appalachian Plateau. The northeastern half of the County consists of the Hudson Valley section of the Ridge and Valley Province. The Hudson Valley section consists of a level terrace, elevated 100 to 150 feet, bordering the Hudson River and extending to a maximum width of about 4 miles between Athens and Coxsackie. The Hudson Valley also consists of the Kalkberg Hills, which is a narrow north-south range between 300 to 500 feet in elevation and lies on the western margin of the terrace section. The Hoogeberg Hills makes up this part of the Hudson Valley. They encompass a large portion of northern Greene County and consist of numerous rounded hills with an elevation of 600 to 800 feet (Greene County Department of Planning and Economic Development, 2000).

The Catskill Mountains are geologically part of the Appalachian Plateau and rise to an elevation of over 4,000 feet, with a maximum height in Greene County of 4,025 feet at Hunter Mountain. The lowest point in Greene County is at the Hudson River, which is at 5 feet above sea level. A prominent escarpment exists on the eastern front facing the Hudson River, rising about 3,000 feet above the surrounding land. This escarpment is less pronounced in the north, and is about 2,000 feet above the Hoogenberg Hills.

Geology

Greene County is located within the Appalachian Plateau and Ridge and Valley physiographic provinces. The Appalachian Plateau extends continuously from New York to Alabama and forms the western boundary of the Appalachian Mountains. The rocks of this plateau are sedimentary rocks of similar age and type to those found in the Valley and Ridge province. The rocks of the Appalachian Plateau were uplifted during the formation of the Appalachian Mountains (Chowns, 2006).

The Appalachian Plateau extends southwest in New York State. It curves eastward across the State, south of Rochester and Syracuse, to the Helderberg Escarpment southwest of Albany. The plateau surface rises in this direction until it becomes the Catskill Mountains. Rivers and their tributaries have cut the originally level Appalachian Plateau into hilly uplands. The branching drainage pattern typically is developed by streams eroding horizontal layers of rock (Rogers et al., Date Unknown).

The Catskill Mountains are an extension of the greater Appalachian Plateau in southern New York State. The outcrop belt of the Late Devonian Catskill Group forms the Catskill Mural Front, the strikingly steep eastern side of the Catskill Mountains that rises to around 2,000 feet in elevation just west of Kingston and extends northward to the area north and west of Catskill (Montgomery County). The Catskills are an erosionally dissected plateau, with 98 peaks that rise over 3,000 feet in elevation. Many bedrock exposures in the upland areas display evidence of scour of glacial ice, indicating that during periods of Pleistocene glaciations, the entire Catskills region was submerged in ice (USGS, 2003).

The erosional characteristics of the sedimentary rock formations exposed along great anticlines and synclines of the Appalachian Mountains are responsible for the characteristic Valley and Ridge topography. Layers of sandstone and conglomerate form ridges and resistant limestone and shale underlie



the valleys in this Province. The Valley and Ridge Province extends from the Adirondack Mountains region, encompassing the upper Hudson River Valley between the Taconic Mountains and the Catskills. It gradually bends westward into northern New Jersey, forming a broad, low valley broken by long, low ridges. This Province is bordered by the Highlands of the Reading Prong on the south and east, and the high ridge of Kittatinny Mountain to the west (USGS, 2003).

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 typically are 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).

Greene County generally experiences seasonable weather patterns characteristic of the northeastern U.S. Warm summers are typically experienced, with occasional high temperatures and humidity. Midsummer temperatures typically range from about 68°F to 80°F (Fahrenheit). The winters of Greene County are long and cold. Winter high temperatures are usually in the middle to upper 20s°F, with minimum temperatures of 15°F expected. During the winter, temperatures are cooler than the temperatures in areas located near large bodies of water. Snow accumulates to an average depth of 68 inches each year (Greene County Department of Planning and Economic Development, 2000).

Land Use and Land Cover

The rural landscape of Greene County is a combination of second-growth forest, brush land and fields, as a result of the gradual abandonment of small farms over the past 100 years. Much of the County's pre-Columbian forest had been cleared for forest products by the mid-19th century and replaced with pastureland for the production of sheep and cattle. As farming became more mechanized, hillside farms were abandoned in favor of level farmland, some of which remains in production today. Some of the former pasture lands are now developed as residential housing (Greene County Department of Planning and Economic Development, 2000).

Land uses in Greene County include: forested land, community and public services, recreational, agricultural, residential, commercial, and industrial (Greene County Department of Planning and Economic Development, 2000). In 2002, residential land occupied the largest percentage of the County at 37.8-percent. The other land uses made up the following percentage of land in Greene County: vacant land at 24.97-percent; forested land at 24.1-percent; agricultural land at 4.88-percent; recreation and entertainment at 2.13-percent; commercial land at 1.7-percent; community services at 1.4-percent; industrial at 1.25-percent; public services at 0.81-percent; and 0.78-percent of Greene County's land had an unknown use in 2002. Table 4-1 below shows the land use categories and their total square miles and percentages. Figure 4-6 shows the distribution of land use throughout Greene County.



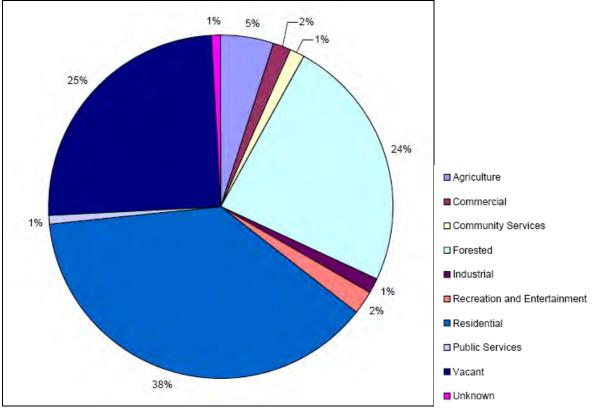


Figure 4-6. Land Use in Greene County

Source: Greene County Department of Economic Development and Planning, 2008

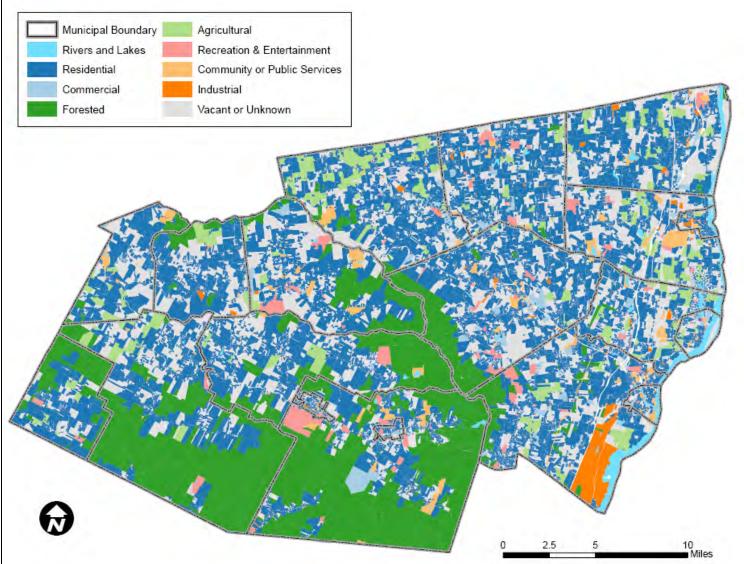
Land Use Category	Total Square Miles	Percent (%) of County
Agricultural	33.1	4.88%
Commercial	11.6	1.70%
Community Services	9.5	1.40%
Forested	163.7	24.10%
Industrial	8.5	1.25%
Public Services	5.5	0.81%
Recreation and Entertainment	14.5	2.13%
Residential	258.0	37.98%
Vacant	169.6	24.97%
Unknown	5.3	0.78%
Greene County Total	679.3	100%

Table 4-1. Land Use in Greene County

Source: Greene County Department of Economic Development and Planning, 2008 Note: Percent of County is the percent of County total square miles (679.3).







Source: Greene County Department of Planning and Economic Development, 2008 Note: For the purposes of this Plan, Public Services and Community Services have been combined, as well as Vacant and Unknown land uses.



POPULATION AND DEMOGRAPHICS

According to the 2000 U.S. Census, Greene County had a population of 48,195 people. This is in agreement with the data included in HAZUS-MH which is based on the 2000 U.S. Census data. Table 4-2 presents the population statistics for Greene County based on the 2000 U.S. Census data. Figure 4-8 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 increase 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.

Jurisdiction	Census 2000 Pop.	HAZUS-HM 2000 Pop.	HAZUS-MH Pop. Over 65*	Percent of HAZUS-MH Pop. Over 65*	HAZUS-MH Low-Income Pop. **	Percent of HAZUS-MH Low-Income Pop. **
Town of Ashland	752	752	121	16.09	70	9.31
Town of Athens	2,296	2,296	363	15.81	211	9.19
Village of Athens	1,695	1,695	270	15.93	137	8.08
Town of Cairo	6,355	6,355	1,074	16.90	677	10.65
Town of Catskill	7,457	7,457	1,351	18.12	795	10.66
Village of Catskill	4,392	4,392	799	18.19	625	14.23
Town of Coxsackie	5,989	5,989	374	6.24	249	4.16
Village of Coxsackie	2,895	2,895	392	13.54	332	11.47
Town of Durham	2,592	2,592	451	17.40	259	9.99
Town of Greenville	3,316	3,316	604	18.21	305	9.20
Town of Halcott	193	193	38	19.69	28	14.51
Town of Hunter	1,783	1,783	313	17.55	183	10.26
Village of Hunter	490	490	53	10.82	82	16.73
Village of Tannersville	448	448	55	12.28	51	11.38
Town of Jewett	970	970	157	16.19	88	9.07
Town of Lexington	830	830	175	21.08	119	14.34
Town of New Baltimore	3,417	3,417	456	13.35	112	3.28
Town of Prattsville	665	665	129	19.40	42	6.32
Town of Windham	1,660	1,660	310	18.67	199	11.99
Greene County (Total)	48,195	48,195	7,485	15.53	4,564	9.47

Table 4-2. Greene County Population Statistics (2000 U.S. Census)

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

Note: Pop. = population

* Individuals over the age of 65. Percentage is calculated out of total population of municipality.

** Households with an income of less than \$20,000. Percentage is calculated out of total population of municipality.

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 3,267 of the 18,276 households as having an annual income of less than \$15,000. The 2000 U.S. Census data indicates a total of 5,432 persons living in households below the poverty level (12.2%). Figure 4-9 shows the distribution of persons over age 65 in Greene County, while Figure 4-10 shows the distribution of low income persons.



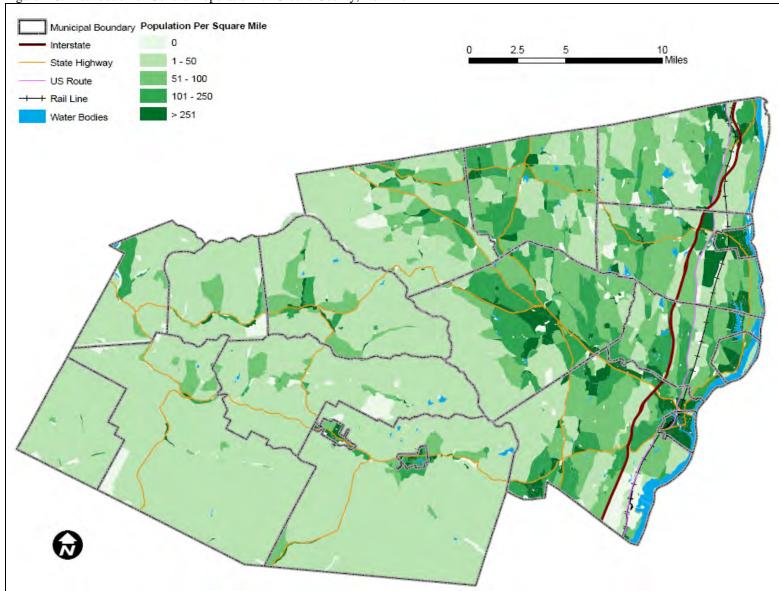


Figure 4-8. Distribution of General Population for Greene County, New York

Source: HAZUS-MH MR3, 2007



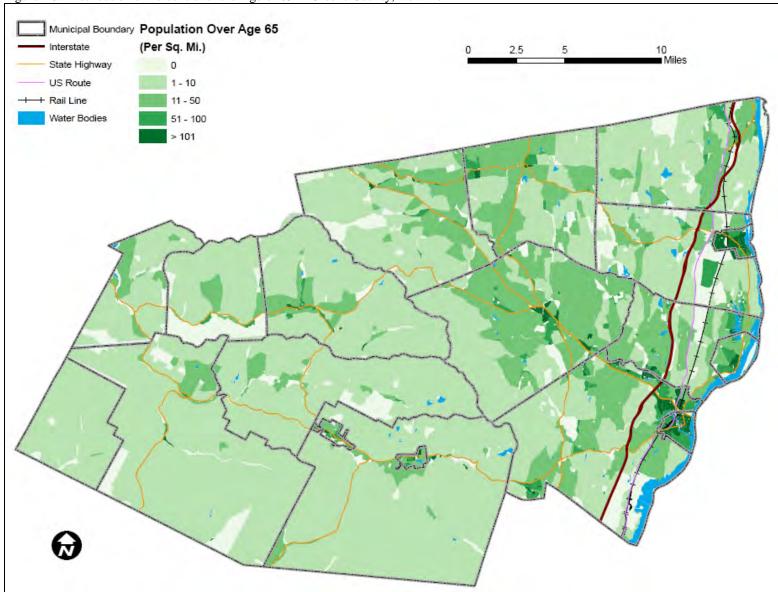


Figure 4-9. Distribution of Persons over the Age of 65 in Greene County, New York



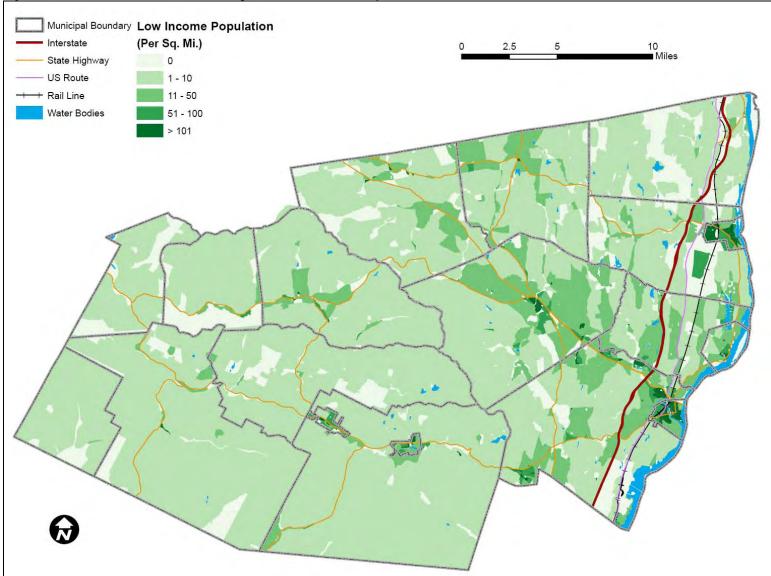


Figure 4-10. Distribution of Low-Income Population in Greene County, New York



GENERAL BUILDING STOCK

The 2000 U.S. Census data identifies 18,256 households in Greene County. The U.S. Census data identified 26,544 housing units in Greene County in 2000. U.S. Census defines household as all the persons who occupy a housing unit, and a housing unit as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. Therefore, you may have more than one household per housing unit. The median price of a single family home in Greene County was estimated at \$92,400 in 2000 (U.S. Census, 2000).

The data in HAZUS-MH estimates that there are 29,159 structures in Greene County, with a total building replacement value (structure and content) of greater than \$6.4 billion. Approximately 99% of the buildings and 81% of the building stock structural value are associated with residential housing. Table 4-3 presents Building Stock Statistics by Occupancy Class for Greene County, based on HAZUS-MH provided data.



	Т	otal		Residen	lential Commercial Indus			Industrial
Jurisdiction	Count	Value (\$K)	Total RES Count	Value (\$K)	RES1 Count	RES2 Count	Value (\$K)	Value (\$K)
Town of Ashland	700	\$120,010	683	\$111,979	479	102	\$4,686	\$1,685
Town of Athens	1,392	\$281,294	1,328	\$224,936	928	167	\$31,970	\$8,770
Village of Athens	950	\$224,451	871	\$156,174	593	67	\$31,995	\$20,748
Town of Cairo	3,582	\$690,593	3,417	\$561,378	2,271	493	\$76,010	\$16,120
Town of Catskill	4,240	\$1,032,330	3,952	\$734,313	2,578	662	\$208,819	\$62,714
Village of Catskill	1,776	\$586,776	1,560	\$356,833	1,042	31	\$161,995	\$19,652
Town of Coxsackie	1,164	\$397,940	1,064	\$320,355	1,045	330	\$53,213	\$17,074
Village of Coxsackie	1,729	\$400,478	1,646	\$233,060	802	44	\$74,148	\$12,934
Town of Durham	2,045	\$366,723	1,958	\$286,534	1,259	323	\$45,016	\$13,805
Town of Greenville	1,916	\$404,803	1,797	\$284,713	1,262	261	\$73,702	\$22,420
Town of Halcott	325	\$40,774	320	\$38,374	237	47	\$1,382	\$0
Town of Hunter	1,832	\$418,007	1,768	\$370,496	1,234	100	\$30,128	\$3,703
Village of Hunter	379	\$86,425	363	\$68,078	365	33	\$15,830	\$953
Village of Tannersville	509	\$83,663	498	\$74,754	375	24	\$4,418	\$4,425
Town of Jewett	1,309	\$323,021	1,240	\$242,364	921	104	\$49,409	\$7,481
Town of Lexington	984	\$136,315	955	\$115,546	705	137	\$3,604	\$4,061
Town of New Baltimore	1,727	\$356,974	1,633	\$272,832	1,069	296	\$41,367	\$6,521
Town of Prattsville	513	\$81,346	480	\$56,662	298	91	\$20,409	\$1,725
Town of Windham	2,087	\$461,227	1,978	\$362,794	1,539	97	\$65,877	\$7,341
Greene County (Total)	29,159	\$6,493,150	27,511	\$4,872,175	19,002	3,409	\$993,978	\$232,132

Table 4-3. Building Stock Count and Replacement Value by Occupancy Class

Source: HAZUS-MH MR3, 2007

Note(s):

RES1 = Single-family dwellings

RES2 = Manufactured housing

Value reflects the replacement cost for building structure and contents. Generally, contents for residential structures are valued at about 50 percent of the building's value. For commercial facilities, the value of the content is generally about equal to the building's structural value. Building stock is generated by using 2000 U.S. Census data. Total is total of all building classes (Residential, Commercial, Industrial, Agricultural, Religious, Government and Education).

Only RES1 and RES2 occupancy class building counts are provided because they are based on census housing unit costs. All other occupancy class building counts are calculated in HAZUS-MH MR3 based on regional average square footage values for specific occupancy class/building types, and may significantly over- or under-estimate actual structure counts.



The 2000 Census data identify that the majority of housing units (68.8%) in Greene County are singlefamily detached units. The 2005 U.S. Census Bureau's County Business Patterns data identified 1,192 business establishments employing 10,526 people in Greene County. The majority (63%) of these establishments employed between one and four employees.

Figure 4-11 through Figure 4-13 show the distribution and exposure density of residential, commercial and industrial buildings in Greene County. Exposure density is the dollar value of structures per unit area, including building content value. Generally, contents for residential structures are valued at about 50 percent of the building's value. For commercial facilities, the value of the content is generally about equal to the building's structural value. The densities are shown in units of \$1,000 (\$K) per square mile.

Viewing exposure distribution maps such as Figures 4-X through 4-X can assist communities in visualizing areas of high exposure and in evaluating aspects of the study area in relation to the specific hazard risks.



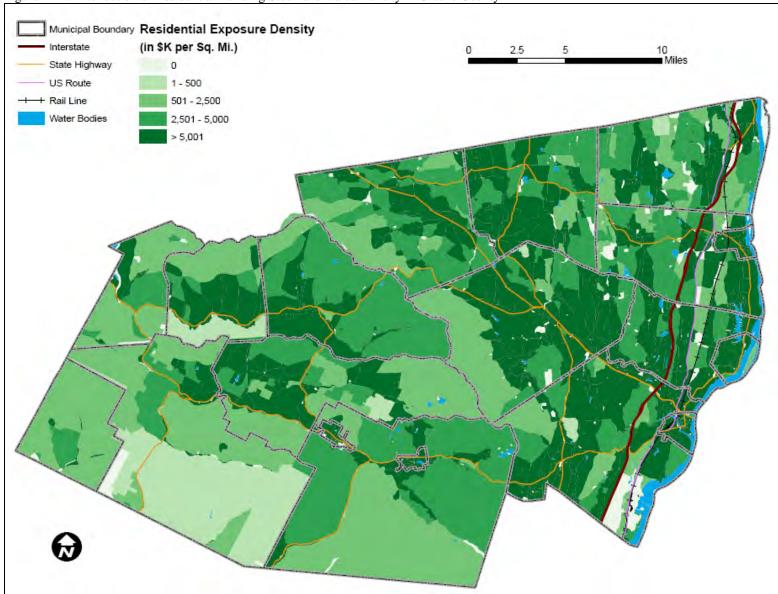


Figure 4-11. Distribution of Residential Building Stock and Value Density in Greene County



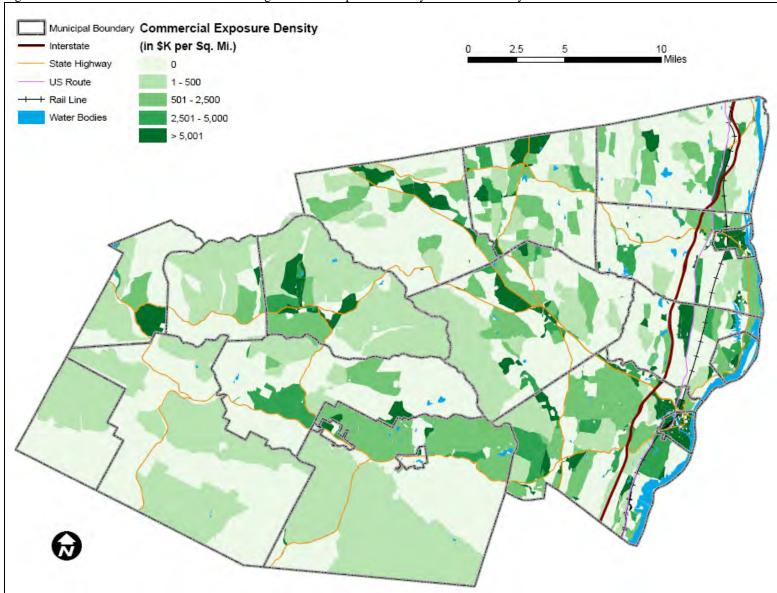


Figure 4-12. Distribution of Commercial Building Stock and Exposure Density in Greene County



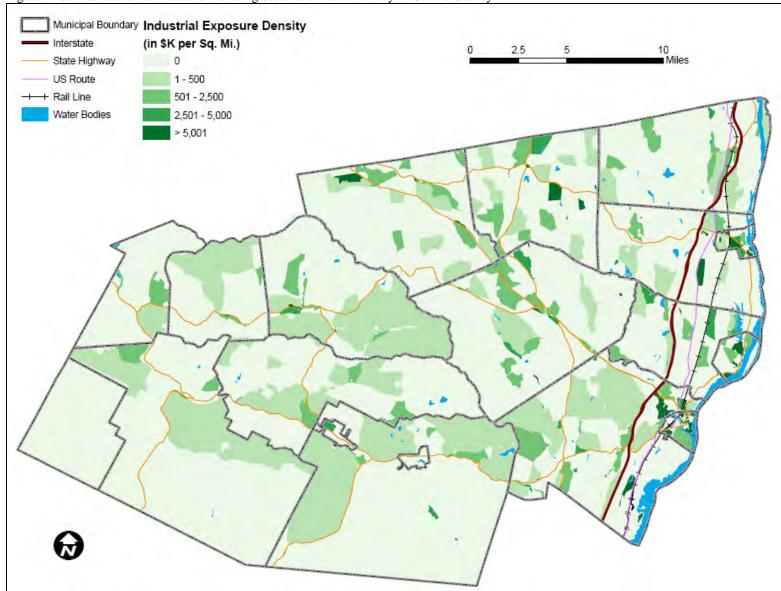


Figure 4-13. Distribution of Industrial Building Stock and Value Density in Greene County



LAND USE AND POPULATION TRENDS

Land use regulatory authority is vested in New York State's towns, villages, and cities. However, many development and preservation issues transcend location political boundaries. DMA 2000 requires that communities consider land use trends, which can impact the need for, and priority of, mitigation options over time. Land use trends significantly impact exposure and vulnerability to various hazards. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

This Plan provides a general overview of population and land use and types of development occurring within the study area. An understanding of these development trends can assist in planning for further development and ensuring that appropriate mitigation, planning, and preparedness measures are in place to protect human health and community infrastructure.

LAND USE TRENDS

As previously stated and shown in Figure 4-1, the County is divided into three specific areas, river towns, valley towns, and mountain towns. Each has their own unique land use trends and economy. Each area is further described below.

River Towns

The current patterns of development within the River Towns show the typical "village" center with higher population, gridiron street patterns, buildings indicative of the social and industrial history, sidewalks, parks, and an overall feel of a walkable and friendly place. As development continues, residential development will begin (and has already begun) extending outwards to the rural areas (Greene County Department of Planning and Economic Development, 2007). Table 4-4 shows the existing acreage by land use in the River Towns.

Land Use	Total Acreage	Percent of Total Land
Agriculture	7,793	8.3%
Commercial	2,059.5	2.2%
Community Service	1,928.7	2.1%
Forested	2,440.9	2.6%
Industrial	3,251.3	3.5%
Public Service	1,492.9	1.6%
Recreation and Entertainment	1,444	1.6%
Residential	42,775.9	46%
Vacant	29,877.4	32.1%
Total	93,009.5	100%

Table 4-4. Existing Acreage by Land Use in the River Towns

Source: Greene County Department of Planning and Economic Development, 2007

Valley Towns

Greene County's Valley Towns include Cairo, Durham, and Greenville. These towns have developed at a slower pace than those along the river. Originally, the valley towns focused mainly on farming, tanning, and shingle making. Today, the main agricultural industries include apple orchards, raising hay, and dairying (Greene County Department of Planning and Economic Development, 2007).

The Valley Towns have a fair number of summer residents, although the overall residential character of the subregion remains fairly rural in nature. The pastoral qualities that the Valley Towns possess serve as



an attraction for year round and seasonal residents. Land use for this subregion is primarily residential. The patterns of development within the Valley Towns are traditional, yet small (Greene County Department of Planning and Economic Development, 2007). Table 4-5 shows the existing acreage by land use in the Valley Towns.

Land Use	Total Acreage	Percent of Total Land
Agriculture	4,942.8	6.0%
Commercial	2,554.5	3.1%
Community Service	1,338.4	1.6%
Forested	3,640.7	4.4%
Industrial	411.2	0.5%
Public Service	187.8	0.2%
Recreation and Entertainment	1,441.4	1.8%
Residential	44,362.9	54.0%
Vacant	23,207.9	28.3%
Total	82,087.7	100.0%

Table 4-5.	Existing	Acreage h	v Land	Use in	Valley	7 Towns
1 able + J.	LAISUNG	I torougo 0	y Lana		v and	1000113

Source: Greene County Department of Planning and Economic Development, 2007

Mountaintop Towns

The towns located in the Catskill Mountains of Greene County make up the Mountaintop Towns. Along with being located in the mountains, the Mountaintop Towns developed as a result of agriculture. Major agricultural drivers for this subregion included cattle, apple orchards, and growing crops. Tanning was another successful industry in these towns. Historically, tourism has been a prominent business in this area, due to the number of hotels and inns located throughout (Greene County Department of Planning and Economic Development, 2007).

Today, the Mountaintop Towns are continuing to thrive with tourism as their major industry. Two major ski resorts are located in this subregion, Windham Mountain and Hunter Mountain. There are many locally owned shops and restaurants that attract visitors to this area. Agriculture is also a stable industry in these towns, with many of the farms operating in the Town of Jewett. The development pattern of the Mountaintop Towns reflects village-type growth. There are a lower number of residential areas compared with the River and Valley Towns. This is most likely due to the number of mountainous areas. Outside of the villages and hamlets are more rural residential areas, farms, and large portions of open space as a result of the Catskill State Park (Greene County Department of Planning and Economic Development, 2007). Table 4-6 shows the existing acreage by land use in the Mountaintop Towns.

Table 4-6. Existing Acreage by Land Use in Mountaintop Towns

Land Use	Total Acreage	Percent of Total Land
Agriculture	5,840.3	2.8%
Commercial	2,742.3	1.3%
Community Service	1,711.4	0.8%
Forested	74,493	35.3%
Industrial	319.2	0.2%
Public Service	1,460.1	0.7%
Recreation and Entertainment	5,374.9	2.6%
Residential	71,123.6	33.7%
Vacant	47,789.8	22.7%
Total	210,864.5	100.0%

Source: Greene County Department of Planning and Economic Development, 2007



ECONOMY

The following sections present an overview of the County economy including: agriculture, retail trade, tourism, industrial, government, leisure and hospitality, and manufacturing. Figure 4-14 shows the distribution of businesses by industry in Greene County.

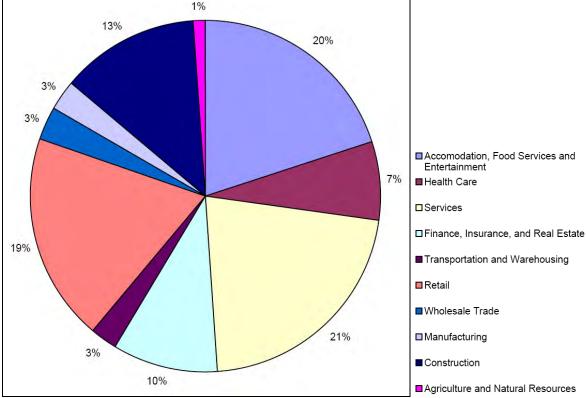


Figure 4-14. Distribution of Business by Industry in Greene County, New York

Source: Greene County Department of Planning and Economic Development, 2000

Greene County is located at the northern end of New York State's Hudson Valley Region and just south of the Capital Region. The County is positioned halfway between the Luther Forest Technology Campus in Saratoga County to the north and the IBM semiconductor operations in Dutchess County to the south. There is also a 30 to 45 minute commute to the research centers at SUNY-Albany, Rensselaer Polytechnic Institute and Albany Nano-Tech (Moran, Stahl and Boyer, LLC, 2006).

The economic census provides a detailed portrait of the nation's economy once every 5 years, from the national to the local level. The most recent economic census is from 2002, which covers nearly all of the U.S. economy in its basic collection of establishment statistics. The 2002 Economic Census was conducted for Greene County and the information are presented in Table 4-7.

Industry	Number of Establishments	Total Sales (\$1,000)	Number of Employees*
Accommodation & food services	206	73,256	1,943
Administrative & support & waste management & remediation service	36	14,615	226
Arts, entertainment, & recreation	31	22,390	542
Construction (not published for counties)	Х	Х	Х
Educational services	5	D	(1-19)

Table 4-7. 2002 Economic Census for Greene County, New York



Industry	Number of Establishments	Total Sales (\$1,000)	Number of Employees*
Finance & insurance (not published for counties)	Х	Х	Х
Health care & social assistance	89	62,058	959
Information	25	N	186
Management of companies & enterprises (not published for counties)	x	Х	x
Manufacturing	39	147,952	817
Mining (not published for counties)	Х	Х	Х
Other services (except public administration)	86	22,972	311
Professional, scientific, & technical services	74	22,487	355
Real estate & rental & leasing	32	D	(100-249)
Retail trade	214	459,733	2,367
Transportation & warehousing (not published for counties)	х	Х	Х
Utilities (not published for counties)	Х	Х	X
Wholesale trade	35	275,983	444

Source: U.S. Census, 2002

* = This number only includes paid employees

D = Withheld to avoid disclosing data of individual companies; data are included in higher level totals

N = Not available

X = Not applicable

The County Business Pattern is provided by the U.S. Census Bureau and is an annual series that presents sub-national economic data by industry. County Business Patterns covers most of the country's economic activity (U.S Census Bureau, 2008). According to the 2005 Greene County Business Pattern, the County had a total of 1,192 business establishments. The retail trade industry had the highest number of establishments in the County, making up 17.4-percent of all businesses. Following retail trade is accommodation and food service, making up 15.9-percent of all business. The third highest industry in 2005 was construction, making up 14.8-percent of all businesses. Table 4-8 provides 2005 industry and employment information in Greene County.

Table 4-8. 2005 Greene County Business Patterns

Industry	Number of Establishments	Number of Employees
Accommodation & food services	189	2,388
Admin, support, waste mgt, remediation services	42	139
Arts, entertainment & recreation	34	840
Construction	177	584
Educational services	9	56
Finance & insurance	59	356
Forestry, fishing, hunting, and agriculture support	5	20-99
Health care and social assistance	89	1,104
Information	22	185
Management of companies & enterprises	3	0-19
Manufacturing	37	875
Mining	2	20-99
Other services (except public administration)	116	481
Professional, scientific & technical services	82	384
Real estate & rental & leasing	42	200
Retail trade	207	2,015
Transportation & warehousing	37	322
Unclassified establishments	3	0-19
Utilities	1	20-99
Wholesale trade	36	467
Total	1,192	10,526

Source: U.S. Census Bureau, 2005



Agriculture

Agriculture remains a viable industry in Greene County. The County ranks 48th in New York State for number of farms and 47th for land in farms. According to the New York Agricultural Statistics Service, in 2003, Greene County was covered by 57,800 acres of farms. There were 340 farms in the County averaging 170 acres per farm. The amount of land used for farming has decreased by 152,077 acres between 1940 and 2003 (Greene County Planning and Economic Department, 2007). Table 4-9 shows the number of farms and land use in Greene County between the years 1940 and 2003.

Year	Number of Farms	Land in Farms (acres)	Total Cropland (acres)	Permanent Pasture (acres)	Total Woodland (acres)	Other Land (acres)
1940	1,653	209,877	N/A	N/A	58,401	N/A
1950	1,300	171,835	77,073	30,211	53,162	11,389
1959	733	136,459	71,194	20,794	36,842	7,629
1969	377	79,284	34,489	N/A	26,026	N/A
1978	304	67,365	34,095	5,302	22,910	5,058
1982	301	63,598	31,646	8,104	18,402	5,446
1987	310	58,400	26,900	8,300	19,400	3,800
1992	206	50,400	25,700	4,900	15,700	4,100
1997	290	52,400	26,700	5,700	15,200	4,800
1998	280	51,200	25,800	5,700	15,100	4,600
1999	285	52,200	26,300	5,400	14,800	5,700
2000	280	49,600	N/A	N/A	N/A	N/A
2001	275	52,100	N/A	N/A	N/A	N/A
2002	340	57,900	31,841	5,120	17,717	3,122
2003	340	57,800	N/A	N/A	N/A	N/A

Table 4-9	Farms in	Greene	County	New York
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Source: U.S. Department of Agriculture, New York Agricultural Statistical Service, 2005

According to the 2002 Census of Agriculture, the market value of all agricultural products sold was \$14.4 million. Dairy remains the number one commodity, but nursery and greenhouse production is a close second and likely to be the number one category in the near future. Agriculture in Greene County generates annual sales of over \$8 million and produces a higher economic multiplier than any other sector (Greene County Planning and Economic Department, 2007).

Agriculture is much more than farming. A substantial number of non-agricultural businesses supply the needs of farmers. The businesses include processors, vehicle and equipment dealers, etc. Farmers own and maintain mowers, balers, trucks, tractors and other numerous pieces of equipment. They also purchase over \$300,000 of electricity, \$490,000 of petroleum products, \$834,000 in repairs and maintenance, \$926,000 of property taxes, \$1.3 million of hired farm labor, \$2 million of feed and approximately \$2.7 million of other products and services from Greene County and other nearby enterprises (Greene County Agricultural and Farmland Protection Board, 2002).

Retail Trade

The retail trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. Retailers are organized to sell merchandise in small quantities to the general public. The two main types of retailers are store and non-store. Store retailers operate fixed point-of-sale locations, located and designated to attract a high volume of walk-in customers. Non-store retailers are organized to serve the general public, but have different retailing methods. This type of retailer reach customers and market merchandise with methods, such as infomercials, publishing paper and electronic catalogs, door-to-door solicitation, in-home demonstration, selling from portable stalls (street vendors), and distribution through vending machines



(U.S. Census, Date Unknown). According to the 2002 Economic Business Census, the retail trade industry employs 2,367 people in Greene County. Overall, the retail trade industry had over \$459 million in sales in 2002.

Tourism

Tourism includes both the accommodation and food service sector, along with arts, entertainment, and recreation. Accommodation and food services is comprised of establishments that provide customers with lodging and/or preparing meals, snacks and beverages for immediate consumption. Arts, entertainment and recreation include a wide range of establishments that operate facilities or provide services to meet varied cultural, entertainment and recreational interests of their customers. This sector comprises: establishments that are involved in producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; establishments that preserve and exhibit objects and sites of historical, cultural, or educational services; and establishments that operate facilities or provide services that enable patrons to participate in recreational activities or pursue amusement, hobby and leisure time interests (U.S. Census, Date Unknown).

Greene County is host to two major ski resorts and other smaller resort operations that serve vacationers and weekenders from New York City, New Jersey, the Hudson Valley, and the Capital Region (Moran, Stahl and Boyer, LLC, 2006). Tourism is a critical part of the Greene County economy, with its businesses providing roughly 10-percent of all County jobs. Tourism is not generally classified as a discrete industry; rather, it comprises a diverse mix of industries and establishments that supply goods and services to travelers, as well as local residents. The County's greatest tourism advantage is its proximity to the New York/New Jersey Metropolitan Area (Greene County Department of Planning and Economic Development, 2007).

Industrial

Over the past 10 years, the County has heavily invested in the development of industrial parks in areas with access to an Interstate interchange and labor resources. This led to the designation of several sites as Empire Zones. This started an aggressive program for building shovel-ready industrial parks (Greene County Department of Planning and Economic Development, 2007). The Greene County Empire Zone program is managed by the County's Department of Planning and Economic Development. The program was developed by New York State to foster the creation of jobs and encourage investment in certain areas of the County (Greene County Department of Planning and Economic Development, Date Unknown). Industrial growth will be focused on these sites, as many of them have been certified "shovel ready" and are available for immediate development (Greene County Department of Planning and Economic Development, 2007).

Greene County contains four empire zones located in New Baltimore and Coxsackie (Area 1), Town of Coxsackie (Area 2), Town of Athens (Area 3), and in the Town and Village of Catskill (Area 4) (Greene County Department of Planning and Economic Development, Date Unknown).

Greene County Empire Zone Area 1 includes 728 acres located in New Baltimore and Coxsackie. This empire zone includes two shovel-ready industrial/commercial parks. The northern-most park is the Kalkberg Commerce Park. The southern-most park is the Greene Business & Technology Park. There is also vacant, undeveloped land just north of Kalkberg Commerce Park that will be developed as an additional industrial/commercial park (Greene County Department of Planning and Economic Development, Date Unknown).



Greene County Empire Zone Area 2 includes 100 acres located in the Town of Coxsackie. This empire zone includes the Hudson Valley Commerce Park. A Build Now-NY grant from New York State is in place to complete developing this privately owned park into a shovel-ready facility (Greene County Department of Planning and Economic Development, Date Unknown).

Greene County Empire Zone Area 3 includes 167 acres located in the Town of Athens. This empire zone includes the former Travco Industrical Park. This parcel includes buildings of the former Travco industrial plant, the entire parcel the plant sits on, and considerable vacant land north of the former plant. Northeast Treaters of New York also have a facility in this empire zone. A Build Now-NY grant from New York State is in place to begin developing this privately owned property into a shovel-ready facility (Greene County Department of Planning and Economic Development, Date Unknown).

Greene County Empire Zone Area 4 includes 265 acres located in the Town and Village of Catskill. This empire zone is a collection of privately owned properties that have significant potential for the industrial development. Just south of the village of Catskill and adjacent to Route 9W, the proposed Catskill Industrial Park will offer companies the benefit of the Catskill's municipal infrastructure (Greene County Department of Planning and Economic Development, Date Unknown).

Government

The Capital Region of New York State is located to the north of Greene County. The high percentage of government employment reflects both the rural areas and the presence of two state prisons in the County. In addition, many County residents that live in the northern section of the County, commute into the Capital Region and are employed by New York State.

Manufacturing

The County has a long tradition of supporting manufacturing that currently represents a diverse base that includes precision metal fabrications, pharmaceutical preparations, wooden furniture, mattress manufacturing, toys and millwork, as well as cement processing.

POPULATION TRENDS

This section discusses population trends to use as a basis for estimating future changes that could result from the seasonal character of the population and significantly change the character of the area. Population trends can provide a basis for making decisions on the type of mitigation approaches to consider and the locations in which these approaches should be applied. This information can also be used to support planning decisions regarding future development in vulnerable areas.

There are two types of residents of Greene County: full-time residents who spend the majority of the year living in the County and who are counted in as residents by the U.S. Census Bureau; and, part-time (seasonal) residents who, because they spend the majority of year living elsewhere, are uncounted in Greene County's Census Population (Envision Communications, 1990).

The U.S. Census Bureau estimates Greene County's 2006 population to be 49,822 persons, which is a 3.4 percent increase from the 2000 Census population of 48,195. From 1800 to 2006, the County has experienced a fluctuation in its population. The largest increase was seen between the years 1800 to 1810, when the County experienced a 55.2 percent (6,988 persons) population increase. The largest decrease was seen between the years 1910 and 1920, when the County experienced a 14.6 percent (-4,418 persons) population decrease. The smallest increase was seen between the years 1940 and 1950, when Greene County experienced a 2.9 percent (819 persons) percent increase. More recently, from 1990 to



2000, Greene County experienced a 7.7 percent (3,456 persons) population increase. The County experienced an overall growth from 1990 to 2006, an 11.4 percent (5,083 persons) population increase (U.S. Census Bureau, 2007). Table 4-10 displays the population and population differences from 1800 to 2006 in Greene County. Figure 4-15 depicts the past, current, and projected population statistics/trends for the County.

Year	Population	Change in Population	Percent (%) Population Change
1800	12,584		
1810	19,536	6,988	55.2
1820	22,996	3,460	17.7
1830	29,525	6,529	28.4
1840	30,446	921	3.1
1850	33,126	2,680	8.8
1860	31,930	-1,196	-3.6
1870	31,832	-98	-0.3
1880	32,695	863	2.7
1890	31,598	-1,097	3.4
1900	31,478	-120	-0.4
1910	30,214	-1,264	-4.0
1920	25,796	-4,418	-14.6
1930	25,808	-12	0.0
1940	27,926	2,118	8.2
1950	28,745	819	2.9
1960	31,372	2,627	9.1
1970	33,526	2,154	5.6
1980	40,861	7,335	23.3
1990	44,739	3,878	9.5
2000	48,195	3,456	7.7
2006	49,822	1,627	3.4

Table 4-10. Greene County Population Trends, 1800 to 2000

Source: U.S. Census Bureau, 1995 and 2007; University of Virginia, 2004

Note: Change in population and percent in population change was calculated from available data



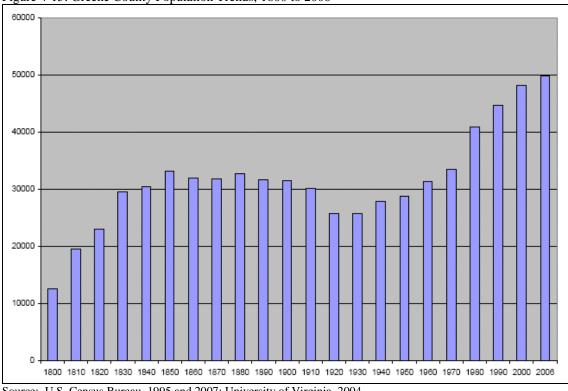


Figure 4-15. Greene County Population Trends, 1800 to 2006

Source: U.S. Census Bureau, 1995 and 2007; University of Virginia, 2004

Seasonal Population Trends

A study was conducted by Envision Communications and STAT Resources for the Greene County Economic Development, Planning, and Promotion Departments. The purpose of the study was to gather and organize information about Greene County's part-time residents and to determine their characteristics (age, education, income, etc.); when and why they purchased their home in the County; characteristics of the home and information about how it is used; and their views on social and economic issues and government actions related to zoning, business development, etc. A questionnaire was developed and was distributed to 1,000 people. Responses were analyzed as a total group and two sub-groups (Mountaintop and Other) (Envision Communications, 1990).

According to the survey, Greene County's part-time residents spend approximately one-quarter of the year in their home in the County, with more than one in four homeowners spending more than four months in their home. Both sub-groups spend, on average, between 86 and 90 days annually at their County residence. The different sub-groups spend different times of the year at their homes. The parttime residents in the Mountaintop area spend more time at their homes during the winter than those who live in the other areas of the County (Envision Communications, 1990).

2008 Greene County Real Property Data indicates that 8,106 properties (presumably seasonal residences) have tax bills being mailed to out of county addresses. (Greene County, 2008) This would result in an increase of seasonal properties of 509%, since 1990 and using a family of 4 as standard occupancy, the seasonal residential population would be 32,424 in 2008 excluding seasonal visitors due to the hospitality industry.



FUTURE GROWTH AND DEVELOPMENT

DYNABIL INDUSTRIES

DynaBil Industries is a local aerospace and defense contractor located in Greene County (Zangla, 2008).

DynaBil Industries plans to expand their existing facilities in Greene County. The project will cost approximately \$6 million and will create 120 additional manufacturing jobs. The president of Dynabil stated that the company will lease long-term 33,000 square feet at a new facility constructed in the Greene Business and Technology Park. The new facility will handle the expansion of manufacturing operations within the company and provide space for new employees (Zangla, 2008).

TRAVCO INDUSTRIAL SITE

The Greene County Industrial Development Agency (Greene IDA) entered a contract to purchase the Travco Industrial Site, located in Athens. The plan for the property is to redevelop the old industrial site with a critical rail component, preserving approximately 30 jobs in the community and creating over 100 new jobs.

The property consists of 60 acres and two buildings. One building is 84,000 square feet and the other is 24,250 square feet. The re-development plan is to confine new economic activity to the existing disturbed portion of the land and preserve the back of the site for wetland and open space protection. An adjacent rail line will be extended into the site to enhance the multi-model options of the facility (Zangala, 2007).

The Greene IDA also entered into a re-development agreement with Peckham Industries, Inc. for a longterm lease of the back section of the current industrial portion of the site for re-location of select operations currently operating at the Hudson River site in Athens (Zangala, 2007).

TECHNOLOGY DRIVE

The Greene IDA and Greene Development LLC were approved by the Greene IDA Board to develop high-tech space at the Greene Business and Technology Park in Coxsackie. The plans include the construction of a 60,000 square foot site pad to accommodate a mixed use space, including all levels of clean room specifications. Greene Development has a 2-year option on the remaining 19 acres of "shovel ready" land located on Technology Drive. Currently, the Greene Business and Technology Park has two tenants that employees 90 people and \$15 million worth of investment. With the development plans, it is estimated that within three to five years, that the current numbers will grow to over 500 jobs and \$75 million in additional capital investment (Greene IDA, 2007).

THE SHOPPES AT GREENE FLATS

The Shoppes at Greene Flats encompasses 20 acres of land in Coxsackie. This retail area includes a grocery store, pharmacy and retail stores (Macko, 2007).

KALKBERG COMMERCE PARK

The Kalkberg Commerce Park is a 146 acre commerce park that can accommodate larger development (200,000 to 300,000 square feet). This commerce park is located directly north of the Greene Business and Technology Park and located within the towns of Coxsackie and New Balitmore (Greene IDA, Date Unknown).



GREENE BUSINESS AND TECHNOLOGY PARK

The Greene Business and Technology Park is a 200 acre "shovel ready" business park designed to accommodate a mix of business types, including technology, light manufacturing, commercial and bank office operations. It is located in Coxsackie, within seconds of exit 21B off of the New York State Thruway, and about 20 minutes south of Albany (Greene IDA, Date Unknown).



CRITICAL FACILITIES

A comprehensive inventory of critical facilities in Greene County was developed from various sources including HAZUS-MH provided data, Greene County Planning and Economic Development Department, and input from the Steering and The inventory of critical facilities Planning Committees. presented in this section represents the current state of this effort at the time of publication of the draft HMP and used for the risk assessment in Section 5.

ESSENTIAL FACILITIES

This section provides information on emergency facilities, hospital and medical facilities, shelters, schools, and senior care and living facilities.

Critical Facilities are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard. As defined for this HMP, critical facilities include essential facilities, transportation systems, lifeline utility systems, high-potential loss facilities, and hazardous material facilities.

Essential facilities are a subset of critical facilities that include those facilities that are important to ensure a full recovery following the occurrence of a hazard event. For the County risk assessment, this category was defined to include police, fire, EMS, schools/colleges, shelters, senior facilities, and medical facilities.

Emergency Facilities

For the purposes of this Plan, emergency facilities include police, fire and emergency medical services (EMS). Tables 4-11 and 4-12 provide an inventory of police stations, fire stations and EMS facilities in Greene County. Figure 4-16 displays the location of these facilities based on the HAZUS-MH inventory data, Greene County GIS and input from the Planning Committee.

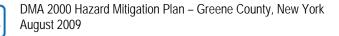
Police Facility Name	Address	Location (Municipality)	Cost (Structural Value) (1)	Bldg. Type	Backup Power
Village of Athens Police Department	21 st Street	Athens (V)	\$1,652,000	Concrete	TBD
Town of Cairo Police Department	25 Volunteer Drive	Cairo (T)	\$1,652,000	Concrete	TBD
NYSP Troop F Zone 3 Catskill Barracks	78R McLaren Road Ext.	Cairo (T)	\$1,652,000	Concrete	TBD
Village of Catskill Police Department	422 Main Street	Catskill (V)	\$1,652,000	Concrete	TBD
Greene County Sheriff Dept. HQs	Bridge St., P.O. Box 231	Catskill (V)	\$1,652,000	Concrete	TBD
NYSP Town of Coxsackie Satellite Station	City Route 9	Coxsackie (T)	\$1,652,000	Concrete	TBD
Village of Coxsackie Police Department	119 Mansion St.	Coxsackie (T)	\$1,652,000	Concrete	TBD
Town of Durham Police Department	7309 Route 81	Durham (T)	\$1,652,000	Concrete	TBD
NYSP Town of Greenville Satellite Station	State Route 32	Greenville (T)	\$1,652,000	Concrete	TBD
Town of Hunter Police Department	Town Hall	Hunter (T) \$1,652,000 Concre		Concrete	TBD
NYSP Town of Hunter Satellite Station		Hunter (T)	\$1,652,000	Concrete	TBD
Greene Cty Sheriff Prattsville SubStation	Main St.	Prattsville (T)	\$1,652,000	Concrete	TBD
Town of Windham Police Department	371 State Route 296	Windham (T)	\$1,652,000	Concrete	TBD

Source: Greene County GIS

Note: The structural value includes the building structure, but not the building content.

Т	=	Town	NYSP	=	New York State Police
V	=	Village	Cty	=	County
TRD	_	To be determined			

TBD To be determined



						EMS Capability		
Fire Dept/EMS Agency Name	Address	Location (Municipality)	Cost (Structural Value) (1)	Bldg. Type	Backup Power	Ambul atory	Non- Trans- porting	Level of Care
Ashland Fire Dept	12094 State Route 23	Ashland (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Ashland Ambulance	12094 State Route 23	Ashland (T)	\$708,000	Concrete	TBD	YES	NO	TBD
West-Athens Limestreet Fire Co.	3 Bambi Lane	Athens (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
West-Athens Limestreet Station #2	933 Leeds-Athens Rd	Athens (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Athens Fire Dept	39 3rd Street	Athens (V)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Cairo Hose Company	30 Railroad Ave	Cairo (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Round Top Volunteer Fire Co.	1513 Hearts Content Rd	Cairo (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
County Emergency Services	25 Volunteer Drive	Cairo (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Cairo Ambulance	755 Route 145	Cairo (T)	\$708,000	Concrete	TBD	YES	NO	TBD
Greene County EMS, Inc.	618 Main Street	Cairo (T)	\$708,000	Concrete	TBD	NO	YES	TBD
Kiskatom Volunteer Fire Dept.	4838 State Route 32	Catskill (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Leeds Hose Company #1	970 County Route 23B	Catskill (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Palenville Fire Dept.	717 State Route 32A	Catskill (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Palenville Fire Dept. Rescue	717 Route 32A	Catskill (T)	\$708,000	Concrete	TBD	NO	YES	TBD
Catskill East Side Station	422 Main Street	Catskill (V)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Catskill Fire Company	1 Central Avenue	Catskill (V)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Town of Catskill Ambulance	West Bridge St	Catskill (V)	\$708,000	Concrete	TBD	YES	NO	TBD
Earlton Fire Dept.	1561 State Route 81	Coxsackie (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
D.M. Hamilton Steamer #2	119 Mansion St	Coxsackie (V)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Coxsackie Hose #3	218 Mansion St	Coxsackie (V)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Coxsackie Ambulance	117 Mansion St.	Coxsackie (V)	\$708,000	Concrete	TBD	YES	NO	TBD
East Durham Volunteer Fire Co.	2401 State Route 145	Durham (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Oak Hill-Durham Volunteer Fire Co.	103 County Route 22	Durham (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Town of Durham Rescue	1 Milk Run Rd.	Durham (T)	\$708,000	Concrete	TBD	YES	NO	TBD
Freehold Volunteer Fire Co.	9502 State Route 32	Greenville (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Greenville Volunteer Fire District #1	11176 State Route 32	Greenville (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Greenville Fire District - Norton Hill	North Road	Greenville (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD

Table 4-12. Fire/EMS in Greene County



						EMS Capability		
Fire Dept/EMS Agency Name	Address	Location (Municipality)	Cost (Structural Value) (1)	Bldg. Type	Backup Power	Ambul atory	Non- Trans- porting	Level of Care
Greenville Volunteer Rescue	11176 Route 32	Greenville (T)	\$708,000	Concrete	TBD	YES	NO	TBD
H.D. Lane Volunteer Fire Co.	26 Beecher Road	Hunter (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Haines Falls Volunteer Fire Co.	5425 State Route 23A	Hunter (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Town of Hunter Ambulance	5742 Route 23A	Hunter (T)	\$708,000	Concrete	TBD	YES	NO	TBD
Tannesville Rescue	21 Park Lane	Hunter (T)	\$708,000	Concrete	TBD	NO	YES	TBD
Hunter Fire Co. #1	17 Bridge Street	Hunter (V)	\$708,000	Concrete	TBD	TBD	TBD	TBD
East Jewett Fire Dept.	1287 County Route 23C	Jewett (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Jewett Fire Dept.	33 Church St	Jewett (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
East Jewett Rescue	1287 Route 23C	Jewett (T)	\$708,000	Concrete	TBD	NO	YES	TBD
Town of Lexington Fire co.	3542 State Route 42	Lexington (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Town of Lexington Fire Station #2	78 Spruceton Rd	Lexington (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Town of Lexington Rescue	3542 Route 42	Lexington (T)	\$708,000	Concrete	TBD	YES	NO	TBD
Cornell H&L Fire Co. Station #2	610 High Rock Rd	New Baltimore (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Cornell H&L Fire Co.	77 Gill Road	New Baltimore (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Medville-Grapeville Vol. Fire Co.	1352 County Route 51	New Baltimore (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
New Baltimore Rescue	77 Gill Road	New Baltimore (T)	\$708,000	Concrete	TBD	NO	YES	TBD
Prattsville Hose Co.	14563 Main St	Prattsville (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Prattsville Rescue	14563 Main Street	Prattsville (T)	\$708,000	Concrete	TBD	YES	NO	TBD
Tannersville Fire Dept.	21 Park Lane	Tannersville (V)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Hensonville Hose Co.	432 State Route 296	Windham (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Windham Hose Co. #1	5462 State Route 23	Windham (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD
Windham Ambulance	4790 State Route 23	Windham (T)	\$708,000	Concrete	TBD	TBD	TBD	TBD

Source: Greene County GIS and HAZUS-MH. The structural value includes the building structure, but not the building content. (1) = HAZUS-MH default data (2007)

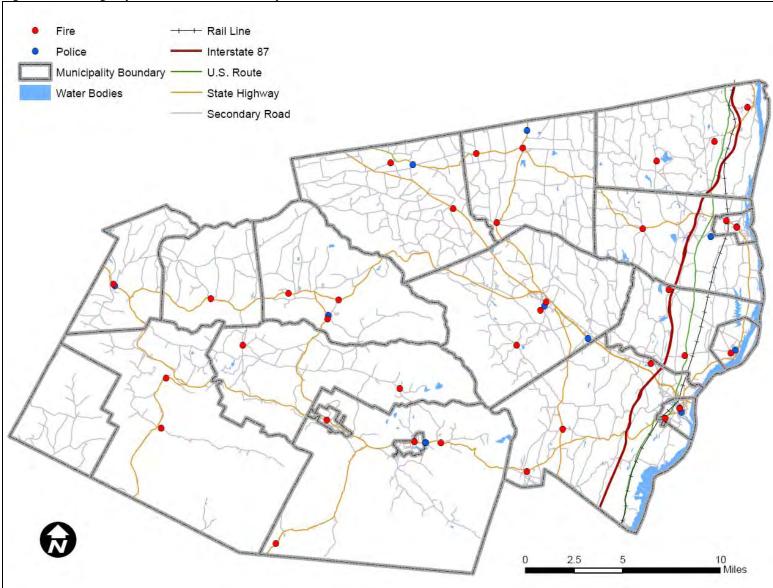
Town =

T V =

Village TBD = To be determined







Source: Greene County GIS and HAZUS-MH (2007).



Hospitals and Medical Centers

There are no hospitals or medical centers located within Greene County. However, there are several hospitals and medical centers located within close proximity to the county including one in Hudson, one in Kingston, and several in the Albany areas.

Shelters

Table 4-13 provides an inventory of the shelters in Greene County. It is important to note however, that the following list includes potential facilities and is not an official listing of available shelters within the County. Residents must contact the proper authorities during an emergency situation, to confirm availability of shelters and to ensure proper shelter identification.

Facility	Location (Municipality)	Capacity	Cost (Structural Value) (1)	Building Type (1)	Backup Power
Edward J. Arthur Elementary School	Athens (T)	774	\$1,000,000	Concrete	NO
Athens Fire Department	Athens (T)		\$1,000,000	Concrete	YES
Athens Community Center	Athens (T)		\$1,000,000	Concrete	TBD
Catskill Masonic Lodge 468	Athens (T)	150	\$1,000,000	Concrete	NO
West Athens Limestreet Fire Co. Station 2	Athens (T)	40	\$1,000,000	Concrete	YES
Cairo Durham CSD	Cairo (T)		\$1,000,000	Concrete	TBD
Cairo Elementary School	Cairo (T)	150	\$1,000,000	Concrete	NO
Cairo-Durham High School	Cairo (T)	1,140	\$1,000,000	Concrete	YES
Resurrection Lutheran Church	Cairo (T)	50	\$1,000,000	Concrete	NO
Catskill CSD	Catskill (T)		\$1,000,000	Concrete	TBD
Catskill High School	Catskill (T)	465	\$1,000,000	Concrete	NO
Catskill Middle School	Catskill (T)	594	\$1,000,000	Concrete	NO
Catskill Elementary School	Catskill (T)	1,815	\$1,000,000	Concrete	NO
Catskill United Methodist Church	Catskill (V)	202	\$1,000,000	Concrete	NO
Coxsackie Athens CSD	Coxsackie (T)		\$1,000,000	Concrete	TBD
Coxsackie Campus	Coxsackie (T)	1,975	\$1,000,000	Concrete	NO
Durham Elementary School	Durham (T)	100	\$1,000,000	Concrete	NO
Oak Hill-Durham Volunteer Fire Company	Durham (T)	9	\$1,000,000	Concrete	YES
Town of Durham Volunteer Ambulance Squad	Durham (T)	135	\$1,000,000	Concrete	YES
Greenville CSD	Greenville (T)		\$1,000,000	Concrete	TBD
Greenville Middle and High School	Greenville (T)	970	\$1,000,000	Concrete	NO
Scott M Ellis Elementary School	Greenville (T)	855	\$1,000,000	Concrete	NO
Greenville Christian Life Center	Greenville (T)	75	\$1,000,000	Concrete	NO
Catskill Bruderhof	Hunter (T)	305	\$1,000,000	Concrete	YES
Hunter Tannersville CSD	Tannersville (V)		\$1,000,000	Concrete	TBD
Hunter-Tannersville Middle and High School	Tannersville (V)	491	\$1,000,000	Concrete	NO
Tannersville Fire and Rescue	Tannersville (V)	70	\$1,000,000	Concrete	YES
Windham Ashland Jewett CSD	Windham (T)		\$1,000,000	Concrete	TBD
Windham-Ashland-Jewett Central School	Windham (T)	182	\$1,000,000	Concrete	NO

Table 4-13. Shelter Facilities in Greene County

Sources: American Red Cross (ARC)

Notes: The structural value includes the building structure, but not the building content.

(1) = HAZUS-MH default data (2007)



Т	=	Town
V	=	Village
TBD	=	To be determined

Senior Care and Senior Living Facilities

Table 4-14 provides an inventory of senior facilities in the County.

Table 4-14.	Senior	Facilities	in Greene	County

Name	Address	Location (Municipality)	Cost (Structural Value)	Bldg. Type	Capacity	Backup Power
Senior Living Facility	2 nd Street and Wayne Street	Athens (V)	\$1,000,000	Concrete	TBD	TBD
Rivertown Apartments	3 rd Street	Athens (V)	\$1,000,000	Concrete	TBD	TBD
Home for Developmentally Disabled Adults	3 Olivett Lane	Athens (V)	\$1,000,000	Concrete	TBD	TBD
Cairo Senior Housing	TBD	Cairo (T)	\$1,000,000	Concrete	TBD	TBD
Autumn Grove	775 Embought Rd.	Catskill (T)	\$1,000,000	Concrete	TBD	TBD
Orchard Estates	777 Embought Rd	Catskill (T)	\$1,000,000	Concrete	TBD	TBD

Sources: Greene County Planning Committee

Notes: The structural value includes the building structure, but not the building content.

(1) = HAZUS-MH default data (2007)

T = Town

V = Village

TBD = To be determined

Figure 4-17 displays the location of the Shelter and Senior Living/Senior Care facilities based on the HAZUS-MH inventory data, Greene County GIS and input from the Planning Committee.



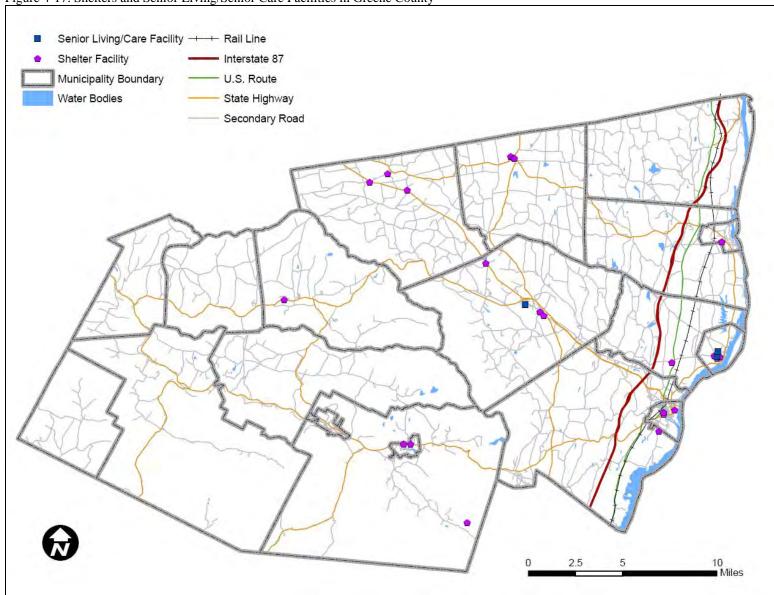


Figure 4-17. Shelters and Senior Living/Senior Care Facilities in Greene County

Source: Greene County GIS, Planning Committee & HAZUS-MH (2007)



Schools

Table 4-15 lists public and private schools and universities in the County. Figure 4-18 displays the locations of these schools within Greene County.



Facility Name	Address	Location (Municipality)	Type of Facility	Enroll.	Designated Shelter	Cost (Structural Value) (1)	Bldg. Type (1)	Backup Power
Edward J. Arthur ES	51 Third Street	Athens (V)	EFS1	TBD	YES	\$590,000	Masonry	NO
Cairo-Durham HS	1301 State Route 145	Cairo (T)	EFS1	TBD	YES	\$590,000	Masonry	YES
Cairo-Durham MS	1301 State Route 145	Cairo (T)	EFS1	TBD	NO	\$590,000	Masonry	YES
Cairo ES	424 Main St	Cairo (T)	EFS1	TBD	YES	\$590,000	Masonry	NO
Catskill ES	770 Embought Rd	Catskill (V)	EFS1	TBD	YES	\$590,000	Masonry	NO
Catskill SHS	341 West Main Street	Catskill (V)	EFS1	TBD	YES	\$590,000	Masonry	NO
Catskill MS	345 West Main Street	Catskill (V)	EFS1	TBD	YES	\$590,000	Masonry	NO
Grapeville Baptist School	2416 County Route 26	Catskill (V)	EFS1	TBD	NO	\$590,000	Masonry	TBD
Coxsackie-Athens MS	24 Sunset Boulevard	Coxsackie (V)	EFS1	TBD	NO	\$590,000	Masonry	NO
Coxsackie-Athens HS	24 Sunset Boulevard	Coxsackie (V)	EFS1	TBD	NO	\$590,000	Masonry	NO
Coxsackie ES	24 Sunset Boulevard	Coxsackie (V)	EFS1	TBD	NO	\$590,000	Masonry	NO
Durham ES	4099 Route 145	Durham (T)	EFS1	TBD	YES	\$590,000	Masonry	NO
Scott M. Ellis ES	State Route 32	Greenville (T)	EFS1	TBD	YES	\$590,000	Masonry	NO
Greenville MS	State Route 81	Greenville (T)	EFS1	TBD	YES	\$590,000	Masonry	NO
Greenville HS	State Route 81	Greenville (T)	EFS1	TBD	YES	\$590,000	Masonry	NO
Hunter ES	7794 Main Street	Hunter (V)	EFS1	TBD	NO	\$590,000	Masonry	TBD
Circle of Friends	State Route 9W	New Baltimore (T)	EFS1	TBD	NO	\$590,000	Masonry	TBD
Greene County Headstart	Main Street	Prattsville (T)	EFS1	TBD	NO	\$590,000	Masonry	TBD
Hunter-Tannersville MS&HS	6094Main Street	Tannersville (V)	EFS1	TBD	YES	\$590,000	Masonry	NO
Windham-Ashland Central School	5411 State Route 23	Windham (T)	EFS1	TBD	YES	\$590,000	Masonry	NO

Table 4-15. Schools in Greene County

Sources: Greene County GIS; HAZUS-MH (2007) Notes: The structural value includes the building structure, but not the building content.

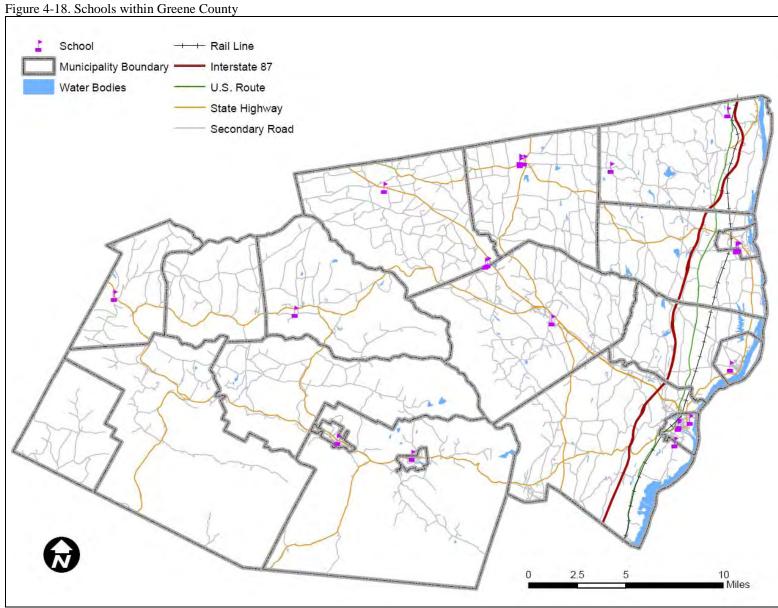
HAZUS-MH default data (2007) (1) =

Ť = Town

V Village =

To be determined TBD =





Source: Greene County GIS, Planning Committee & HAZUS-MH (2007)



TRANSPORTATION SYSTEMS

This section presents available inventory data for roadways, airports, railways and other transportation systems for Greene County. Figure 4-19 shows regional transportation lifelines serving Greene County.

Highway, Roadways and Associated Systems

Interstate 87 (New York Thruway) runs north to south along the eastern boundary of the County along side the Hudson River. US Route 9W also runs along the eastern edge of the County in the same areas. Nine other major State Highways cross the County: 23, 23A, 32, 42, 81, 144, 145, 214 and 296.

Airports and Heliports

Table 4-16 lists the locations of the Airport facilities and Heliports within Greene County.

Name	Location (Municipality)	Owner	Cost (Structural Value) (1)	Backup Power
Sandy Plains	Athens (T)	Private	\$6,431,000	TBD
Helipad	Athens (T)	W. Athens Fire District	\$6,431,000	TBD
Catskill Valley Airpark	Cairo (T)	Private	\$6,431,000	TBD
Deer Run	Coxsackie (T)	Private	\$6,431,000	TBD
Freehold	Greenville (T)	Private	\$6,431,000	TBD
Greenville-Rainbow	Greenville (T)	Private	\$6,431,000	TBD
Hunter Mountain	Jewett (T)	Private	\$6,431,000	TBD
Wayne Delp	New Baltimore (T)	Private	\$6,431,000	TBD

Source: HAZUS-MH MR3

Notes: The structural value includes the building structure, but not the building content.

(1) = HAZUS-MH default data (2007)

$$T = Town V = Village$$

TBD = To be determined

Railway

One railway runs along the Hudson River through the Towns of Catskill, Athens, Coxsackie and New Baltimore in Greene County. It supports freight trains and is used by CSX (formerly Conrail and Penn Central Railroad). Six miles north of the County boundary, the Selkirk Rail Yard provides connections for freight trains to important regions in Hudson Valley as well as other parts of the northeast and Canada.

Although not located within Greene County, Amtrak services are available in the Town of Hudson, just across the Hudson River from Greene County. Through this station, passengers can travel south towards Penn Station in New York City, or north to Albany with extended services to Syracuse, Buffalo, Detroit and Montreal.

Ports

HAZUS-MH MR3 identified seven Port Facilities within Greene County. Three are located within the Village of Athens: Peckham Dock, Phelps Terminal and Amos Post Athens Terminal Dock. One, Amos Post Catskill Terminal Dock is located in the Village of Catskill, and the remaining three ports: Lehigh



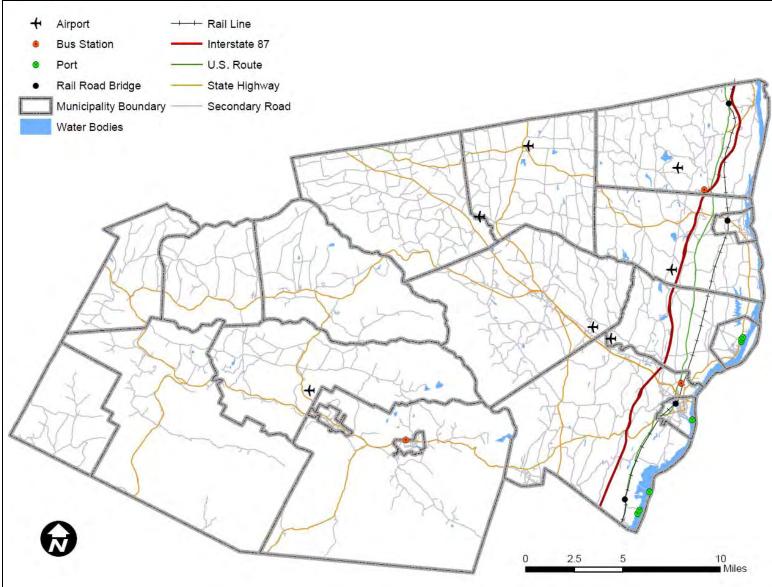
Portland Cement Co., Cementon Dock, Lehigh Portland Cement Co., Alsen Dock and Independent Cement Plant Dock are located in the Town of Catskill. All seven ports located in Greene County are listed with a default HAZUS-MH cost value of \$1,831,200.

Public Transportation

A local bus transportation system, (Greene County Transit System) is available Monday through Friday within Greene County. The purpose of the system is to provide transportation to and from work for Greene County residents. The busses come from outlying areas in the County in the morning, ending in the Village of Catskill. During the day, shuttles circulate throughout the Village providing local transportation. In the evening, the bus routes work in reverse, to bring residents home (GCPED, 2008).







Source: Greene County GIS, Planning Committee & HAZUS-MH (2007)



LIFELINE UTILITY SYSTEMS

This section presents potable water, wastewater, and energy resource utility system data. Due to heightened security concerns, local utility lifeline data sufficient to complete the analysis have only partially been obtained. Utility data are included in HAZUS-MH but are not sufficient to support detailed analyses for this County.

Potable Water Supply

The New York State Department of Health provided potable water (community and non-community systems) data for facilities located in Greene County. According to this data as summarized below, there are approximately 92 wells, 68 water treatment plants, 36 distribution system/zones, 27 storage tanks, 17 intake facilities, one pump facility and one spring facility located within the community systems in Greene County. This indicates that the major source of water for the County within the community systems is from wells and associated treatment plants. A listing of the jurisdictions serviced by these facilities is located below (Table 4-17).

Community Systems							
			Facility	у Туре			
Principal City Served	DS	WL	TP	ST	IN	Other	
Ashland	1	1	1	0	0	0	
Athens (T)	1	0	1	4	1	0	
Athens (V)	1	0	1	2	1	0	
Cairo	7	29	27	1	1	0	
Catskill (T)	6	18	10	0	0	1	
Catskill (V)	1	0	1	2	1	0	
Coxsackie (T)	2	6	1	2	2	0	
Coxsackie (V)	1	0	1	2	1	0	
Durham	1	2	1	0	0	0	
Greenville	1	3	2	1	0	0	
Hunter (T)	2	2	2	1	1	0	
Hunter (V)	1	3	4	2	1	0	
Jewett	1	3	1	0	0	0	
Prattsville	1	2	2	1	0	0	
Tannersville	2	2	4	4	8	0	
Windham	7	21	9	5	0	1	
		Non-Comm	unity Systems				
Principal City Served			Water				
Frincipal City Served	G	W	SW		Other		
Ashland	2	1	0		(0	
Athens (T)	1	0	0		0		
Cairo	6	4	0		0		
Catskill (T)	2	8	0		0		
Catskill (V)	1	5	0		0		
Coxsackie (T)	1	9	0		0		
Coxsackie (V)		2	0		0		
Durham	4	-	0		(0	
Greenville	3		1		(0	
Hunter (T)	25		1		(0	
Hunter (V)	4		0			0	
Jewett	8		0			0	
Lexington	7		C			1	
New Baltimore	6		0			0	
Prattsville		3	C			0	
Windham	3	0	C			0	
Unknown	30		0		0		

Table 4-17. Greene County Potable Water Facilities

Source: New York State Department of Health Notes: DS =



WL	=	Well	IN	=	Intake
TP	=	Treatment Plant	GW	=	Ground Water
ST	=	Storage Tank	SW	=	Surface Water

Of the Non-community systems data, nearly all (303) are ground water facilities. Two facilities are surface water systems and one is a ground water system under direct influence of surface water.

Wastewater Facilities

Table 4-18 lists the waste water treatment facilities located within Greene County. Table 4-19 lists the Waste Water/Storm Water Pump Stations located within Greene County. Figure 4-20 below displays the locations of all waste water facilities within Greene County.

Facility Name	Location (Municipality)	Capacity (mgd)	Cost (Structural Value) (1)	Backup Power
Athens Sewer Treatment Plant – Main Plant	Athens (V)	TBD	\$78,588,000	TBD
Sleepy Hollow Lake WWTP	Athens (V)	TBD	\$78,588,000	TBD
Cairo Sewer District	Cairo (T)	TBD	\$78,588,000	TBD
Catskill Sewer District #4	Catskill (T)	TBD	\$78,588,000	TBD
Catskill WWTP	Catskill (V)	TBD	\$78,588,000	TBD
Water Pressure Reducing Valve Vault 1	Catskill (V)	TBD	\$78,588,000	TBD
Water Pressure Reducing Valve Vault 2	Catskill (V)	TBD	\$78,588,000	TBD
Coxsackie Sewer Treatment Plant	Coxsackie (V)	TBD	\$78,588,000	TBD
Elka Park WWTP	Hunter (T)	TBD	\$78,588,000	TBD
Mochne Tashba WWTP	Hunter (T)	TBD	\$78,588,000	TBD
Hunter Water Treatment Plant	Hunter (V)	TBD	\$78,588,000	TBD
Jewett WWTP	Jewett (T)	TBD	\$78,588,000	TBD
New Baltimore Sewer Treatment Plant	New Baltimore (T)	TBD	\$78,588,000	TBD
New Baltimore WWTP/Pump Station	New Baltimore (T)	TBD	\$78,588,000	TBD
Tannersville Sewer Treatment Plant	Tannersville (V)	TBD	\$78,588,000	TBD
Village Water Treatment Plant	Tannersville (V)	TBD	\$78,588,000	TBD

Table 4-18. Greene County Wastewater Treatment Facilities

Source: HAZUS-MH (2005)

Notes: The structural value includes the building structure, but not the building content.

(1) = HAZUS-MH default data (2007)

- T = Town
- V = Village

TBD = To be determined

Table 4-19. Greene County Wastewater Pump Stations

Facility Name	Location (Municipality)	Population Served	Capacity	Cost (1)	Backup Power
Athens Village Pump	Athens (V)	TBD	TBD	\$1,050,000	TBD
Athens Village Pump	Athens (V)	TBD	TBD	\$1,050,000	TBD
Sleepy Hollow Pump Station (Private)	Athens (V)	TBD	TBD	\$1,050,000	TBD
Sewer Pump Station 1	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Sewer Pump Station 2	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Sewer Pump Station 3	Catskill (V)	TBD	TBD	\$1,050,000	TBD



Facility Name	Location (Municipality)	Population Served	Capacity	Cost (1)	Backup Power
Sewer Pump Station 4	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Sewer Pump Station 5	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Sewer Pump Station 6	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Sewer Pump Station 7	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Sewer Pump Station 8	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 1	Catskill (V)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 2	Hunter (T)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 3	Hunter (T)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 4	Hunter (T)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 5	Hunter (T)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 1	Hunter (V)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 2	Hunter (V)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump Station 1	Windham (T)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump House 1	Windham (T)	TBD	TBD	\$1,050,000	TBD
Pump House	Windham (T)	TBD	TBD	\$1,050,000	TBD
Town Water Pump House	Windham (T)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump House 2	Windham (T)	TBD	TBD	\$1,050,000	TBD
Waste Water Pump House 3	Windham (T)	TBD	TBD	\$1,050,000	TBD

Sources: Planning Committee, HAZUS-MH (2007)

Notes: The structural value includes the building structure, but not the building content.

(1) = HAZUS-MH default data (2007)

T = Town

V = Village

TBD = To be determined

Energy Resources

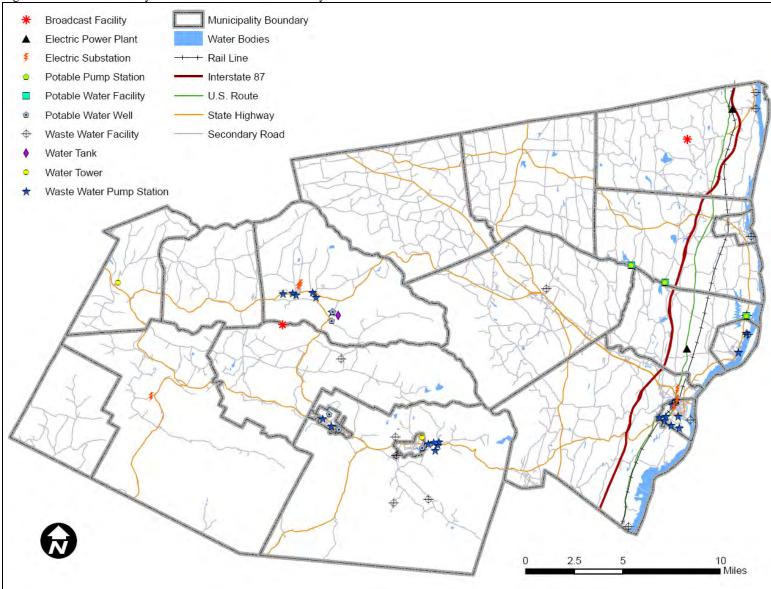
NYS Electric and Gas and Central Hudson Gas and Electric provide electrical service to residents of Greene County. Central Hudson Gas and Electric provides gas to some residents of the town and village of Coxsackie and the town and village of Catskill. The Planning Committee identified an Electric Power in the Town of Athens and a substation in the Town of New Baltimore. Both have the default HAZUS-MH cost value of \$129,800,000. In addition, the Planning Committee identified six Electric Sub-Stations in Greene County. Three of the six sub-stations are located within the Village of Catskill, one is located within the Town of Lexington and the final two are located within the Town of Windham. All are listed with the default HAZUS-MH cost value of \$50,000.

Communication Resources

HAZUS-MH MR3 identified one broadcast facility within Greene County: WRIP Ch. 250, a radio station out of the Town of Windham. The Planning Committee identified one additional facility: an Emergency Radio Broadcast Tower located in the Town of New Baltimore. Both are listed with a default cost value from HAZUS-MH of \$118,000. Verizon and State Telephone Company provide telephone service in the county. Figure 4-20 displays the locations of all Lifeline Utility facilities located within Greene County.



Figure 4-20. Lifeline Utility Facilities within Greene County



Source: Planning Committee, Greene County GIS & HAZUS-MH (2007)



HIGH-POTENTIAL LOSS FACILITIES

High-potential loss facilities include dams, levees, nuclear power plants, military installations and hazardous materials (HAZMAT) facilities. No levees, nuclear power plants or military installations were identified in the County. Dams and HAZMAT facilities are discussed below.

Dams

According to the National Inventory of Dams (NID), input from the Planning Committee, and data received from the New York State Department of Environmental Conservation, there are 90 dams in Greene County. A dam is included in the NID if: 1) it is a "high" or "significant" hazard potential class dam or, 2) it is a "low" hazard potential class dam that exceeds 25 feet in height and 15 acre-feet storage or, 3) it is a "low" hazard potential class dam that exceeds 50 acre-feet storage and 6 feet height. Of the 90 dams inventoried, there are 8 dams classified as high, 12 classified as significant, 52 classified as low and 18 with an unknown classification. The dam hazard classification is unknown for dams provided by the Planning Committee that are not on the NID. Table 4-13 defines the hazard potential classification, as accepted by the NID Interagency Committee on Dam Safety. Table 4-21 lists the dams in Greene County and Figure 4-21 shows the locations of these dams.

 Table 4-20. Dam Hazard Potential Classifications

Loss of Human Life	Economic, Environmental, and Lifeline Losses
None expected	Low and generally limited to owner
None expected	Yes
Probable. One or more expected	Yes (but not necessary for this classification)
	None expected None expected

Source: NID, 2007



Table 4-21. Dams in Greene Count	y		Dam	Year		Hazard		
Name	Water Body	Nearest City	Class	Complete	Owner	(1)	EAP	NID
Tannersville Reservoir #1 Dam	Allen Brook	Tannersville (V)	HPDE	1980	Vlg. Of Tannersville	S	NO	
Onteora Pond Dam	Allen Brook	Tannersville (V)	HPDE	1924	Onteora Park Assoc.	S	NO	
Tannersville Reservoir #2 Dam	Allen Brook	Tannersville (V)	HPDE	1958	Vlg. Of Tannersville	L	NO	
Batavia Kill Watershed Dam #1	Batavia Kill	Windham (T)	HPDE	1974	GC Batavia Kill	Н	NO	
Batavia Kill Watershed Dam #4A	Batavia Kill	Windham (T)	HPDE	1967	GC Batavia Kill	н	NO	
Durham Concert Site Dam and Dike	Bowery Creek	Unknown	HPDE	2003	Veronica Palterovich	L	NO	
Klatz Dam	Catskill Creek	Cairo (T)	HPDB	1907	August Klatz	S	NO	
Mill Pond Dam	Catskill Creek	Catskill (T)	HPDG		Rivers Electric	L	NO	
210-1038	Catskill Creek	Unknown	HPDE		Unknown		NO	
Potuck Reservoir Dam	Cob Creek	Catskill (T)	HPDE	1930	Vlg. Of Catskill	н	YES	
Sportsmen Wildlife Marsh Dam	Cob Creek	Coxsackie (T)	HPDE	1960	Robert Keenan	L	NO	
Collins & Meurer Dam	Coxsackie Creek	Coxsackie (T)	HPDE	1923	Auden Collins & Henry Meurer	L	NO	
Colgate Lake dam	East Kill	Jewett (T)	HPDE	1887	NYS DEC	S	NO	
Camp Harriman Dam	East Kill	Jewett (T)	HPDR	1913	NYS OMRDD	Н	NO	
Lake Rip Van Winkle Dam	Gooseberry Creek	Tannersville (V)	HPDG	1907	Vlg. Of Tannersville	L	NO	
Athens Water Supply Dam	Hans Vosen Kill	Athens (T)	HPDE	1925	Vlg. Of Athens	S	NO	
High Falls Extension Mill Dam	Kaaterskill Creek	Catskill (T)	HPDM	0860	Mrs. Robinson	L	NO	
Sleepy Hollow Dam	Murderers Creek	Athens (T)	HPDE	1972	Sleepy Hollow Hold. Com.	Н	YES	
Zimmerman Pond Dam	Murderers Creek	Athens (V)	HPDE		Frederick Zimmerman		NO	
Beaver Dam Lake Dam	Potic Creek	Coxsackie (T)	HPDE	1940	George Bartholomew	L	NO	
Ilnseher Pond Dam	Roaring Brook	Jewett (T)	HPDE	1980	Francois Ilnseher	L	NO	
Hunter Mountain Lake Dam	Schoharie Creek	Hunter (T)	HPDE	1993	Israel Slutsky	Н	NO	
Prattsville Barrier Dam	Schoharie Creek	Prattsville (T)	HPDG	1938	NYS DEC	L	NO	
Dibble Dam	Schoharie Creek	Hunter (T)	HPDG		Vlg. Of Tannersville		NO	
Dolan Lake Dam	Schoharie Creek	Hunter (T)	HPDE		Hunter Mountain	L	NO	
East Durham Pond Dam	Thorpe Creek	Durham (T)	HPDG	1926	E. Durham Devel. Assoc.		NO	
Tannersville Water Co. Dam #3	TR-Allen Brook	Tannersville (V)	HPDE	1957	Vlg. Of Tannersville	S	NO	
Carelas Lake Dam	TR-Basic Creek	Greenville (T)	HPDE	1952	Peter Carelas	L	NO	
Country Estates Retention Basin Dam	TR-Basic Creek	Greenville (T)	HPDE		STG Company Inc.	S	NO	
Conservative Baptists Pond Dams A	TR-Basic Creek	Greenville (T)	HPDE	1963	Conservative Baptist Bible Conference	L	NO	
Sumner Pond Dam	TR-Basic Creek	Greenville (T)	HPDE	1974	Eugene Sumner		NO	
Batavia Kill Watershed Dam #3	TR-Batavia Kill	Windham (T)	HPDE	1970	GC Batavia Kill	Н	NO	

Table 4 21 Dame in Graana County



Name	Water Body	Nearest City	Dam Class	Year Complete	Owner	Hazard (1)	EAP	NID
Lake Heloise Dam	TR-Batavia Kill	Windham (T)	HPDE	1910	Ted Davis	L	NO	
Silver Lake Dam	TR-Batavia Kill	Windham (T)	HPDR	1872	Thomas St. John	н	NO	
St. John Pond Dam	TR-Batavia Kill	Windham (T)	HPDR	1910	Thomas St. John	L	NO	
Ferrer Pond Dam	TR-Beaver Dam Lake	None	HPDE	1968	Russell Ferrer		NO	
Knupfer Dam and Dike	TR-Bowery Creek	Durham (T)	HPDE	1972	BDK Corporation	L	NO	
Tailleur Wildlife Marsh Dam	TR-Broncks Lake	None	HPDE	1969	Charles H Taileur	L	NO	
Schmoller Pond Dam	TR-Catskill Creek	Cairo (T)	HPDE	1968	Eugene Schmoller	S	NO	
Cairo Water Company Dam #1	TR-Catskill Creek	Cairo (T)	HPDE		Cairo Water Company	L	NO	
Albanese Pond Dam	TR-Catskill Creek	Durham (T)	HPDE	1965	Joseph McLinden	L	NO	
Hull Farm Pond Dam	TR-Catskill Creek	Durham (T)	HPDE	1967	Purdy	L	NO	
Bullivant Pond Dam	TR-Catskill Creek	Durham (T)	HPDE		James Bullivant		NO	
Zimmerman Pond #1 Dam	TR-Catskill Creek	None	HPDE	1965	Fred Zimmerman	L	NO	
South Cairo Rod & Gun Club Dam	TR-Catskill Creek	Cairo (T)	HPDE		S. Cairo Rod & Gun Club		NO	
Ordes Pond Dam	TR-Catskill Creek	None	HPDE	1968	John Ordes	L	NO	
Tranquility Camp Dam	TR-Cob Creek	Catskill (T)	HPDE	1977	Pearl C Miller	L	NO	
Coxsackie Reservoir Dam	TR-Coxsackie Creek	Coxsackie (T)	HPDE	1940	Vlg. Of Coxsackie	S	NO	
Broncks Lake Dam	TR-Coxsackie Creek	Coxsackie (T)	HPDE	1941	Joseph Garland	L	NO	
Coxsackie Corr. Fac. Reten. Pond Dam	TR-Coxsackie Creek	Coxsackie (T)	HPDE		NYS DOC Cox. Corr.	L	NO	
Coxsackie Reservoir Dam #2	TR-Coxsackie Creek	Coxsackie (T)	HPDG	1950	NYC DOC	S	NO	
Medway Dam	TR-Coxsackie Creek	New Baltimore (T)	HPDE	1967	Vlg. Of Coxsackie	S	NO	
Wilkinson Pond Dam	TR-Coxsackie Creek	None	HPDE	1967	Carlton Wilkinson Jr.	L	NO	
Lloyd Zimmerman Dam	TR-Coxsackie Creek	Coxsackie (T)	HPDE	1987	Lloyd Zimmerman	L	NO	
Chisholm Pond Dam	TR-East Handsome B	Unknown	HPDS		Unknown	L	NO	
Levy Dam	TR-East Kill	Unknown	HPDE	1988	Tannersville Supply Co.	L	NO	
Beers Pond Dam	TR-East Kill	Jewett (T)	HPDE	1964	Maurice Beers	L	NO	
John Galt Dam	TR-East Kill	Unknown	HPDE	1990	John Galt Inc.	L	NO	
Vitacco Pond Dam	TR-East Kill	Unknown	HPDC		Joseph Vitacco	L	NO	
East Jewett Campsite Dam	TR-East Kill	Jewett (T)	HPDE	1946	BSA Ulster-Greene Co.	L	NO	
176-1176	TR-Esopus Creek	Unknown	HPDE		Unknown		NO	
Timber Lake Club Dam	TR-Hand Hollow	Unknown	HPDE	1961	Timber Lake Camp	S	NO	
Clowes Pond Dam	TR-Hans Vosen Kill	Catskill (T)	HPDE	1970	Richard F Clowes		NO	
Athens Dam	TR-Hudson River	Athens (T)	HPDG	1926	Vlg. Of Athens	L	NO	
Albright Brothers Pond Dam	TR-Hudson River	Athens (T)	HPDE	1964	Albright Brothers	L	NO	
King Pond Dam	TR-Hudson River	Catskill (T)	HPDE	1971	Theodore King		NO	



Name	Water Body	Nearest City	Dam Class	Year Complete	Owner	Hazard (1)	EAP	NID
Girard Pond Dam	TR-Hudson River	Catskill (T)	HPDE	1973	Carl W Girard	L	NO	
Masucchia Pond Dam	TR-John Chase Brook	Lexington (T)	HPDE	1972	John Masucchia	L	NO	
Twilight Park Dam (Upper)	TR-Kaaterskill Creek	Catskill (T)	HPDG		Twilight Cattagers Inc.	L	NO	
Herbert Wolff Farm Pond Dam #1	TR-Kaaterskill Creek	Catskill (T)	HPDE	1965	Herbert A. Wolff	L	NO	
Herbert Wolff Farm Pond Dam #2	TR-Kaaterskill Creek	Catskill (T)	HPDE	1982	Herbert A. Wolff	L	NO	
South Lake Dam	TR-Kaaterskill Creek	Catskill (T)	HPDE	1973	NYS DEC	L	NO	
Nicholsen Pond Dam	TR-Platte Kill	Cairo (T)	HPDE	1966	Arnold Nicholsen	L	NO	
Helmut Philipp Pond Dam	TR-Platte Kill	Greenville (T)	HPDE	1981	Helmut Philipp	L	NO	
NYC Police Pond Dam	TR-Platte Kill	Unknown	HPDE	1966	Catskill Bruderoff	L	NO	
Wesolowski Pond Dan	TR-Quaker Creek	Unknown	HPDE	1850	Joseph B Wesolowski	L	NO	
R & E Banks Dam	TR-Schoharie Creek	Lexington (T)	HPDE	1966	Richard & Emil Banks	L	NO	
William Mead Dam	TR-Schoharie Creek	Lexington (T)	HPDE	1968	Hilltop Acres Inc.	L	NO	
Szabo Pond Dam	TR-Schoharie Creek	Prattsville (T)	HPDE		Steve Szabo		NO	
Abbuhl & Hosley Pond Dam	TR-Thorpe Creek	Durham (T)	HPDE	1971	Dr. J W Abbuhl & DR. H F Hosley	L	NO	
BDK Corporation Dam #1	TR-Thorpe Creek	Durham (T)	HPDE		BDK Corporation		NO	
Loughman Pond Dam	TR-Thorpe Creek	Durham (T)	HPDE		Joanne Loughman		NO	
Friar Tuck Pond Dam	TR-Valley Creek	None	HPDE	1975	Stephen Caridi	L	NO	
Adar Dam	TR-West Kill	Lexington (T)	HPDE	1975	Uriel Adar	L	NO	
Jewett Dam #1	Unknown	Jewett (T)	HPDE		Unknown		NO	
Bocklet Lake Dam	Unknown	Durham (T)	HPDE		Unknown		NO	
Deans Mill Dam	Unknown	New Baltimore (T)	HPDG		Unknown		NO	
New Baltimore Dam #2	Unknown	New Baltimore (T)	HPDE		Unknown		NO	
Aiello Pond #1 Dam	Unknown	New Baltimore (T)	HPDE	1981	Anthony Aiello	L	NO	
Aiello Pond #2 Dam	Unknown	New Baltimore (T)	HPDE	1981	Anthony Aiello	L	NO	

Source: NID, 2007; Input from Planning Committee; HAZUS-MH (2007) Notes:

(1) Information from the National Inventory of Dams

*	=	Emergency Action Plan has not been adopted.
HPDC	=	Concrete Dam
HPDE	=	Earthen Dam
NID	=	National Inventory of Dams
NYS DEC	=	New York State Department of Environmental Conservation
TR	=	Tributary
Х	=	Listed on the National Inventory of Dams



HAZMAT Facilities

The U.S. Environmental Protection Agency (EPA) Toxics Release Inventory (TRI) database identifies nine (9) TRI facilities in Greene County (2006). TRI facilities are those required to report on chemical storage and use based on particular volumes of specified chemicals stored and used. Table 4-22 lists TRI facilities, their chemicals reported as well as other HAZMAT facilities identified by the Planning Committee.

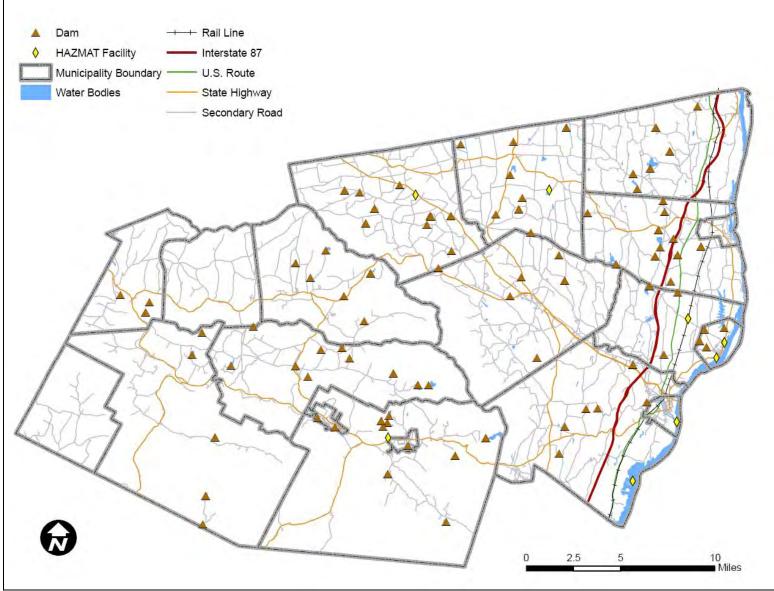
Name	Address	Location (Municipality)	Chemical Name
Iroquois Gas Transmission System Athens Compressor Station	915 Schoharie Tpke	Athens (T)	Castrol 778 Petroleum Distillates
New Athens Generating Company	9300 US Route 9W	Athens (T)	Ammonium Hydroxide
New Athens Generating Company	9300 US Route 9W	Athens (T)	Ferric Chloride Solution 44%
New Athens Generating Company	9300 US Route 9W	Athens (T)	Fuel Oil, No 1 and 2
New Athens Generating Company	9300 US Route 9W	Athens (T)	Hydrazine
Athens Water Filtration Facility	Schoharie Tpke	Athens (T)	Sodium Hypochlorite
Athens Water Filtration Facility	Schoharie Tpke	Athens (T)	Sodium Hydroxide
Northeast Treaters	796 Schoharie Tpke	Athens (V)	Copper Compounds
Northeast Treaters	796 Schoharie Tpke	Athens (V)	Arsenic Compounds
Northeast Treaters	796 Schoharie Tpke	Athens (V)	Chromium Compounds
Elco Company	South Washington Street and 5 th Street	Athens (V)	Stains, Clear Coats, Lacquers
Peckham Dock	2 Union St., Extension	Athens (V)	Asphalt
Phelps Terminal at Port	Hudson River	Athens (V)	Naptha
Amos Post Athens Terminal Dock	Foot of Union Street at Hudson River	Athens (V)	Calcium Chloride
Athens Water Filtration Facility	Water Street	Athens (V)	Sodium Hypochlorite
Peckham Materials Corp	133 Washington Ave	Athens (V)	Calcium Chloride
Lehigh Cement Group	120 Alpha Rd.	Catskill (T)	1,2 –Ethanediol
Lehigh Cement Group	120 Alpha Rd.	Catskill (T)	Sulfuric Acid
Peckham Materials Corp.	7065 Route 9W South	Catskill (T)	Ammonium Nitrate
Peckham Materials Corp.	7065 Route 9W South	Catskill (T)	Ashphalt
KINGSTON OIL SUPPLY CORP- CATSKILL TER.	Lower Main Street	Catskill (V)	1,2,4-Trimethylbenz
KINGSTON OIL SUPPLY CORP- CATSKILL TER.	Lower Main Street	Catskill (V)	N-Hexane
KINGSTON OIL SUPPLY CORP- CATSKILL TER.	Lower Main Street	Catskill (V)	Napthalene
ST LAWRENCE CEMENT CO. L.L.C.	Route 9W P.O. Box 31	Catskill (V)	Chromium
ST LAWRENCE CEMENT CO. L.L.C.	Route 9W P.O. Box 31	Catskill (V)	Nickel
ST LAWRENCE CEMENT CO. L.L.C.	Route 9W P.O. Box 31	Catskill (V)	Nitroglycerin
Water Chlorine Injection Station	Park Lane	Catskill (V)	Chlorine
STIEFEL LABS. INC.	Route 145	Durham (T)	Benzoyl Peroxide
Royal Metals Metal Plating	West Road	Greenville (T)	Metal Plating
Botini Leach Dr.	Leach Drive	Hunter (T)	Oil and Fuel
Tannersville Waste Water Treatment Plant	130 Allen Road	Hunter (T)	Hydrated Lime

Table 4-22. HAZMAT Facilities in Greene County

Sources: EPA Toxic Release Inventory; HAZUS-MH (2005)







Source: NID, 2007, NYS DEC, Planning Committee & HAZUS-MH (2007)

OTHER FACILITIES

The Planning Committee identified additional facilities (user-defined facilities) as critical including municipal buildings and Town/Village storage centers. These facilities were included in the risk assessment conducted for the County. Table 4-23 lists the other critical facilities identified by Greene County.

Table 4-23.	Other Facilities	in Greene	County

			Cost		
		Location	(Structural	Bldg.	Backup
Name	Address	(Municipality)	Value) (1)	Type (1)	Power
Post Office	Route 19	Ashland (T)	\$1,000,000	Concrete	TBD
Town Highway Garage	Sutton Hollow Rd	Ashland (T)	\$1,000,000	Concrete	TBD
Greene County Highway Garage	Route 19	Ashland (T)	\$1,000,000	Concrete	TBD
Athens Community Center	2 1 st St	Athens (V)	\$1,000,000	Concrete	TBD
County Annex		Cairo (T)	\$1,000,000	Concrete	TBD
Cairo Town Hall		Cairo (T)	\$1,000,000	Concrete	TBD
Catskill DPW	West Bridge St	Catskill (V)	\$1,000,000	Concrete	TBD
Catskill Correctional Facility	Bridge St	Catskill (V)	\$1,000,000	Concrete	TBD
Coxsackie Correctional Facility	US Route 9W	Coxsackie (T)	\$1,000,000	Concrete	TBD
Greene County Correctional Facility	160 Plank Rd	Coxsackie (T)	\$1,000,000	Concrete	TBD
Town Grange Hall	Route 3	Halcott (T)	\$1,000,000	Concrete	TBD
Salt Shed	Route 23C	Jewett (T)	\$1,000,000	Concrete	TBD
Town Building	Beaches Corners Rd	Jewett (T)	\$1,000,000	Concrete	TBD
Highway Building	Beaches Corners Rd	Jewett (T)	\$1,000,000	Concrete	TBD
Town Hall	Route 42	Lexington (T)	\$1,000,000	Concrete	TBD
Town Highway	Route 42	Lexington (T)	\$1,000,000	Concrete	TBD
Highway Garage	County Route 51	New Baltimore (T)	\$1,000,000	Concrete	TBD
Town Hall	County Route 51	New Baltimore (T)	\$1,000,000	Concrete	TBD
New York State Aqueduct Shaft		Prattsville (T)	\$1,000,000	Concrete	TBD
Village Hall/Court	Main St	Tannersville (V)	\$1,000,000	Concrete	TBD
Village Garage	South Main St	Tannersville (V)	\$1,000,000	Concrete	TBD
School Bus Garage	Route 23	Windham (T)	\$1,000,000	Concrete	TBD
Town Hall	Brooksburg Rd	Windham (T)	\$1,000,000	Concrete	TBD
Main Care Fuel Storage Center	Maplewood Ave	Windham (T)	\$1,000,000	Concrete	TBD

Source: Planning Committee

Notes: The structural value includes the building structure, but not the building content.

(1) = HAZUS-MH default data (2007)

T = Town

V = Village

TBD = To be determined

