2

Warwick In 2008

2.1 REGIONAL CONTEXT

(A) HISTORIC DEVELOPMENT PATTERN

Development in Orange County has traditionally been influenced by transportation routes. In 1841, the first area railroad was built, linking Orange County to the New York Metropolitan Area. In addition to making travel easier to the city, the railroad opened up the New York City produce market to Orange County farmers. Agriculture became a major business. Today, Orange County is the tenth largest agricultural county in New York State with a gross value of products totaling nearly $75 million. When the 1987 *Master Plan* was prepared, however, Orange County was sixth largest county in New York State in terms of agriculture, with a gross value of crops totaling nearly $200 million (in 1987 dollars). In 1997, there were a total of 641 farms in the County covering 100,000 acres of land; or one-half of the County's 200,000 acres of open space. In 2002, there were 706 farms covering 108,000 acres of land or approximately 20% of the County's total land area.

Automobile travel to Orange County was made easier in the 1960's when the New York State Thruway broke through the natural barrier created by the Ramapo Mountains. Since then, communities have developed more rapidly near major multi-lane highways. The arrival of the Quickway (State Route 17) and Interstate 84 have had an enormous impact on development within Orange County since they were constructed in the 1960's. Interstate 287 was more recently completed, linking the large employment centers of New Jersey (i.e., in the Morristown area) around Interstates 80 and 78 with the New York State Thruway (I-87) at Suffern in Rockland County.

The dynamics of growth in the region can be characterized as waves that moved outward from Manhattan. After World War II, growth was focused on Westchester, Bergen and Nassau Counties. In the 1960's, as land in those counties filled up, growth moved on to available land in Rockland and Suffolk Counties. Now, growth has moved on to a new ring of suburbs, located 45 to 70 miles away from Manhattan. Orange County, as well as Putnam, Dutchess and eastern Suffolk Counties are situated within this ring; they are the areas experiencing most of the region's growth through the 1980's, 1990's and continuing into the 2000's.

The Town of Warwick is now on the edge of two dynamically growing regions for office development. Located in the southern part of Orange County, just below the Route 17 growth corridor and on the New Jersey border north of Sussex and Passaic Counties, Warwick is influenced by changes in both regions.

Shortly after the 1999 Comprehensive Plan was adopted, the Town was the recipient of a grant award from the New York State Quality Communities program. In conjunction with the three villages, a build out analysis was conducted and a report prepared describing the result of the analysis. The build out analysis attempted to answer several critical questions relating to the future growth and development. These questions are: 1) What are the current zoning practices in each of the municipalities?; 2) What will the Warwick communities look like in the future if built out according to the current zoning and what are the implications of this growth?; 3) How consistent are the zoning laws with each other and with any adopted comprehensive plans?; and 4) What are the options for inter-municipal cooperation and how can these communities become more consistent in their planning?

These questions were answered by conducting a thorough review of all the zoning laws and comprehensive plans in the Town of Warwick and the villages, and by conducting a build-out analysis. The build-out analysis estimates the impact of growth on the area once all developable land has been converted to uses permitted under existing zoning. However, the build-out did not predict the time frame under which a final build-out may occur.

The review of each of the zoning codes was done with specific emphasis on understanding the planning and zoning techniques being used to accomplish municipal goals. This review included: a) identifying the major goals, zoning techniques used, and direction the zoning takes the community through a build-out analysis, b) identifying inconsistencies or deficiencies within the code, if any, c) determining how well the laws conform to any adopted comprehensive plan, and d) determining what levels of consistency there are between the laws.

The build out found that Warwick has a total of 63,612 acres of land, of which 20,824 acres are buildable. If all the buildable land were developed as currently zoned, this would result in the addition of 5,972 new units, 5,878 households, 18,809 residents (at 3.2 residents per household) and 5,314,320 square feet of commercial space. The implication of this build out is that the Town could have a 61% increase in population to 49,513 people, an additional 3,446 students needing to go to school, 1,041 acres devoted to new roads, 11,156 additional automobiles on the roads, an additional 1,410,675 gallons of water per day, and the need to add 19 new police officers and 19 new firefighters.

In comparison, if the existing zoning were changed to increase the required minimum lot sizes (for example, RR-.5 from 2 to 4 acres), the total population, student aged children and infrastructure impacts are reduced as compared to the above figures as follows: There would be potentially 4,040 new units, 3,946 new households, 12,628 new residents. This represents a 41% increase in population to 43,392 people, with an additional 2,313 children needing to go to school,1,041 acres devoted to new roads, 7,892 additional automobiles on the roads, an

additional 947,100 gallons of water per day, and the need to add 12-13 new police officers and 12-13 new firefighters.

Following the results of the build out analysis and the recommendations of the 1999 Comprehensive Plan, the Town determined that reductions in density Townwide were warranted. This led to the enactment of the 2002 Zoning Law, which saw changes in the form of reduced densities in all of the Town's principal residential Zoning districts.

(B) REGIONAL GROWTH

From 1970 to 1980, Orange County's population grew 17 percent, and from 1980 to 1990 it grew by 19 percent. From 1990 to 2000, population has increased an additional 11 percent countywide and 18 percent in Warwick. Projections by the State Economic Development Department indicate that the population will continue to grow, increasing about 10.3 percent between 1990 and 2000 and about 9.6 percent between 2000 and 2010. Historical growth in Orange County, compared with Warwick, its surrounding communities and New York State is illustrated in Figure 2.1. As a result of this growth, in 2002, Warwick reduced residential densities Townwide in an effort to maintain its rural character and as a result of a build-out analysis that was conducted under the New York State Quality Communities program as described above.

Most of this growth can be attributed to Orange County's own employment growth and its relative proximity to the expanding employment centers in New York City's metropolitan area. New York City is about one and a half to two hours by car from Orange County. Within a more reasonable commuting distance are major office employers in Westchester County as well as in Morris and Bergen Counties in northern New Jersey.

The Hudson River Valley, in White Plains and Dutchess County, have major employment centers with easy access via the New York State Thruway and Interstates 84/684. Interstates 87, 287, and Route 17 bring Orange County residents to major employers in northern New Jersey. The presence of IBM at the Sterling Forest Research Park as well as in East Fishkill and Poughkeepsie provides additional demand for housing in the region, although at reduced levels since the massive layoffs in the early 1990's.[1]

Not only are these areas growing because of local job creation, but they have become bedroom communities for employees in older suburbs. Significant increases in housing prices in these suburbs over the last decade and a half has forced many employees and their families to commute to outlying communities for housing they can afford. People working in Westchester and Bergen Counties, for example, seem to be willing to drive an extra hour to Orange County, in order to gain a 30 to 50 percent discount on the price of a house.

Farming has been particularly affected by this new regional growth. As demand for real estate grows, so does the price of farmland. This in turn causes many farmers to decide to sell their land to real estate developers. It accounts for why so much land in formerly productive agricultural communities remains fallow and unproductive. The new absentee landowners

speculate on future development when farmers "call it quits". As more and more farms are sold, farming becomes more of an isolated industry. The formidable support system (including feed stores, farm machinery suppliers, and labor) that once existed is now almost gone, leaving farmers more and more dependent on each other for support.

The Town has responded to such growth. As a result of its planning and zoning efforts, Warwick was awarded the well-earned status of a "Quality Community" through the office of New York's Governor Pataki. In 2005, Warwick was awarded the first "Smart Growth" award by the New York State Association of Realtors. Its innovative zoning regulations and design guidelines are now used as models in Orange County and throughout New York State. The Pace University Land Use Law Center specifically cites Warwick's approach to planning as a model of smart growth in its "Land Use Library", the Hudson River Valley Greenway provides examples of Warwick's land use controls as models in its "Technical Assistance Toolbox," and the American Farmland Trust and Natural Resources Conservation Service's "Farmland Information Center" provides the Warwick Comprehensive Plan as one of three examples of the "tools used by communities to protect agricultural resources and support agriculture." A recent publication entitled Breaking Ground: Planning and Building in Priority Growth Districts, published by the Yale School of Forestry and Environmental Studies, discusses Warwick's incentive zoning approach to agriculture and open space protection as a model.

For the past twenty years, the Town has enacted a wide range of plans and programs for preserving land and water, resulting in a network of parks, beaches, preserves, wildlife sanctuaries, agricultural reserves, trails, and historic sites. These plans, however, have never fully realized the Town's goal of preserving the full array of extraordinary natural diversity and unique quality of life, which sets Warwick apart from other Hudson Valley towns.

On July 19, 2005, Governor George E. Pataki signed state legislation amending the New York State Town Law and the State Tax Law to enable the Town of Warwick to establish, through a local referendum, a Community Preservation Fund supported by revenues from a three-quarter (3/4) percent real estate transfer tax. This legislation allows the Town of Warwick to protect its farmland and open space, which is vital to the future social, economic and environmental health of the Town. It also supplements the farmland and open space protection program already established in the Town's voluntary acquisition of land and development rights program. On November 7, 2000, the voters of the Town of Warwick overwhelmingly approved a purchase of development rights program. A Local Law to implement the program was adopted by the Town Board of the Town of Warwick on November 8, 2001 by L.L. No. 6-2001. Chapter 54 of the Warwick Code is entitled the Agricultural and Open Space Preservation and Acquisition program. The voters approved a proposition authorizing the expenditure of $9.5 million for the acquisition of open spaces and areas, including, among other things, development rights to protect and conserve agricultural lands, non-farm open spaces and other open areas.

The Town's Local Law establishing the Agricultural and Open Space Preservation and Acquisition program also established an Agricultural and Open Space Preservation Fund. Deposits into the fund can include revenues of the Town from whatever source and can include, at a minimum, Open Space Acquisition Bond Funds, all revenues from or for the

amortization of indebtedness authorized for the acquisition of open spaces or areas pursuant to § 247 of the General Municipal Law, and any revenues from a real estate transfer tax which may be established. The fund can also be authorized to accept gifts. Interest accrued by monies deposited in the fund must be credited to the fund and no monies deposited in the fund can be transferred to any other fund or account.

To date, 2,300 acres have been or are being preserved by the Town purchasing the development rights on the following farms and open spaces:

- Brady Farm (SBL 64-1-56.2)
- Brown Farm (SBLs 24-1-17, 29.5, 32)
- A. Buckbee Farm (SBLs 58-1-9, 55-1-16.32, 46-1-11)
- Lewis Farm (SBL 31-2-12.2)
- Raynor Farm (SBL 52-1-5.3)
- Weiss Farm (SBL 63-2-10)
- Miller Farm (SBL 17-1-30)
- Greenwood Lake Beach
- Brown Farm (SBLs 24-1-17, 29.5, 32)
- W. Buckbee Farm (SBLs 44-1-46.1, 48, 49)
- Mabee Farm (SBL 55-1-15.2)
- Myruski (SBL 18-1-18.21)
- Quackenbush Farm 31-1-22.2)

The commitment of the Town of Warwick towards protection of its community character is unique in Orange County and unmatched in the Hudson Valley. This success is widely attributed to the adoption and implementation of the Town's 1999 Comprehensive Plan.

In 2006, Warwick also created the Town of Warwick Community Preservation Fund following the special legislation by the New York State Legislature and consent of the Town's voters in a referendum held in the fall of 2006. Use of monies in the Fund is based upon the Community Preservation Project Plan (CPPP). The CPPP, now adopted by the Town Board, serves to build upon the 1999 Comprehensive Plan and 2002 Zoning Law, as well as new initiatives, including but not limited to additional regulatory techniques and subdivision, zoning and wetland protection laws, as well as a multitude of other conservation strategies that have been adopted by the Town.

The CPPP includes the following principles:

1. The Plan lists every project, which the Town plans to undertake pursuant to the Community Preservation Fund.

2. The Plan includes every parcel in the Town which should be preserved, using the tools described, in order to protect community character.

3. The Plan provides for a detailed evaluation of all available land use alternatives to protect community character, including but not limited to:

    a. Fee simple acquisition

b. Zoning regulations
c. Transfer of Development Rights
d. Purchase of Development Rights,
e. Incentive Zoning, and
f. Conservation Easements

4. The CPPP establishes the priorities for preservation and includes the preservation of farmland as its highest priority. The CPPP's focus also involves one or more of the following:

   a. Establishment of parks, nature preserves, or recreation areas
   b. Preservation of open space, including agricultural lands
   c. Preservation of lands of exceptional scenic value
   d. Preservation of freshwater wetlands
   e. Preservation of aquifer recharge areas
   f. Establishment and/or preservation of access to water bodies
   g. Establishment of wildlife refuges for the purposes of maintaining biodiversity and native animal species diversity, including the protection of habitats essential to rare, endangered, threatened or special concern species
   h. Preservation of unique or threatened ecological areas
   i. Preservation of streams and stream buffer areas in a natural, free flowing condition
   j. Preservation of unique forested lands
   k. Establishment and/or preservation of public access to lands for public use including trails, stream rights and waterways
   l. Preservation of historic places and properties listed on the National and/or New York State Registers of Historic Places and/or protected under a municipal historic preservation law
   m. Undertaking any of the aforementioned in furtherance of the establishment of a greenbelt or greenway

(C) FUTURE ECONOMIC DEVELOPMENT

Orange County is expected to continue to attract new economic development because of the combination of its proximity to New York City and its good transportation system. However, Orange County's economic base is undergoing changes in its structure.

From 1984 to 1989, the number of new employees in Orange County grew by 32 percent, an annual growth rate of over five percent (5 %). However, since 1989, the total number of employees has decreased by four percent (4 %). Between 1990 and 2000, the Orange County labor force increased 5.4% growing to 164,858. Estimates continued to see growth in the labor force estimating that it would increase by 17% in 2006. Almost all of the growth has occurred outside of manufacturing industries. In 1985, fewer than one in five of Orange County's 113,000 jobs, or 20,100 new employment opportunities, were in manufacturing and wholesaling. By 1994, manufacturing jobs had decreased by three percent (3 %), accounting

for just one in seven jobs. Prior to 1989, this industrial category commanded a stable 27 percent of those employed. From 1991 to 1994, it represented 32 percent of all employees although growth has slowed somewhat. Jobs in the service sector grew by 46 percent between 1984 and 1990 and by one percent (1 %) between 1990 and 1994. From 1990 through estimates for 2006, the three main industries in Orange County capturing nearly half of the civilian labor force include education, health and social services; retail trade and manufacturing. While manufacturing accounts for nearly 8% of the labor force estimates for 2006, this is a decrease of 2% from 2000. In terms of occupations, white collar management and professional occupations account for approximately 1/3 of the civilian labor force and remains relative consistent between 2000 and 2006. Slightly less than 1/3 of the labor force is employed in sales and office occupations. Service occupations account for 16.5% of jobs in 2000.

In Warwick, some of the largest employers include the medical facilities in the Village, the Warwick Valley Central School District, the State's Mid-Orange Correctional Facility, and ShopRite. Employment by industry is illustrated in Figure 2.4.

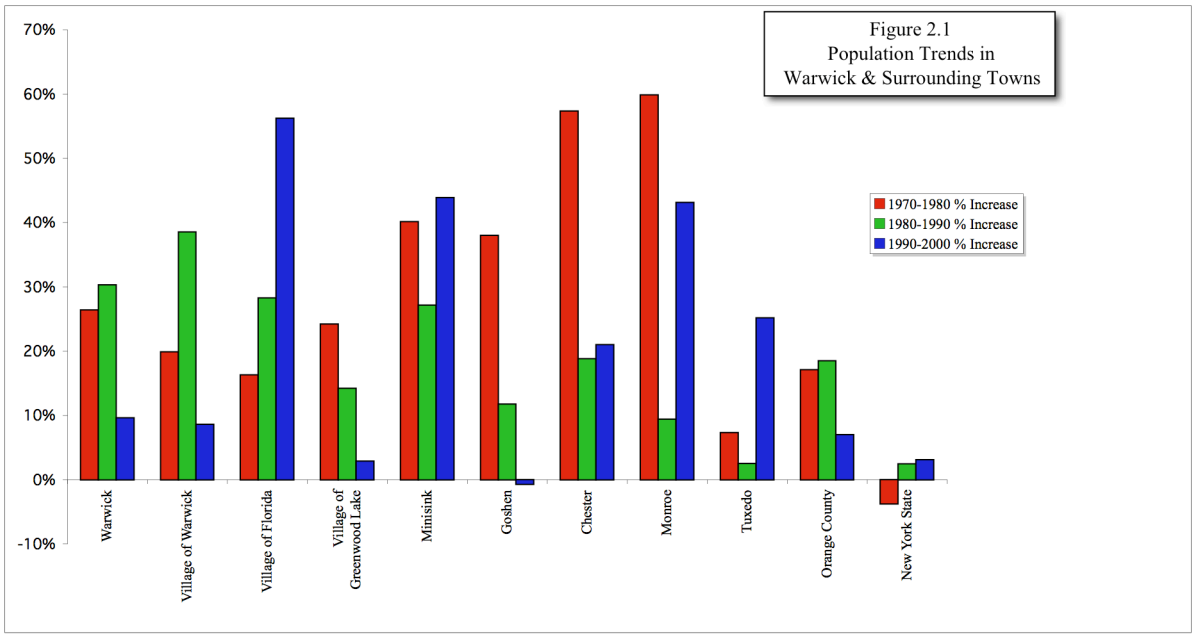
The white collar and service activity most promising to the future development of Orange County is private office development, specifically regional office, research units, and back-office activities of large industrial and financial corporations. The County's most rapid rate of job expansion will likely take place in financial industries. The number of jobs in the finance, insurance and real estate sectors grew by 38 percent between 1984 and 1990 and by 9 percent between 1990 and 1994. The 2006 American Community Survey estimates for job growth from 2000 anticipated small gains (0.5-2%) in the construction, wholesale trade, retail trade and professional services industries. Employment by occupation in 2000 is shown on Figure 2.3. Industrial growth in Orange County has been largely in the distribution and warehousing industries, given the County's close proximity to the New York Metropolitan area and its easy access to interstate highways leading into the Metropolitan area.

2.2 LOCAL CONTEXT

(A) POPULATION GROWTH

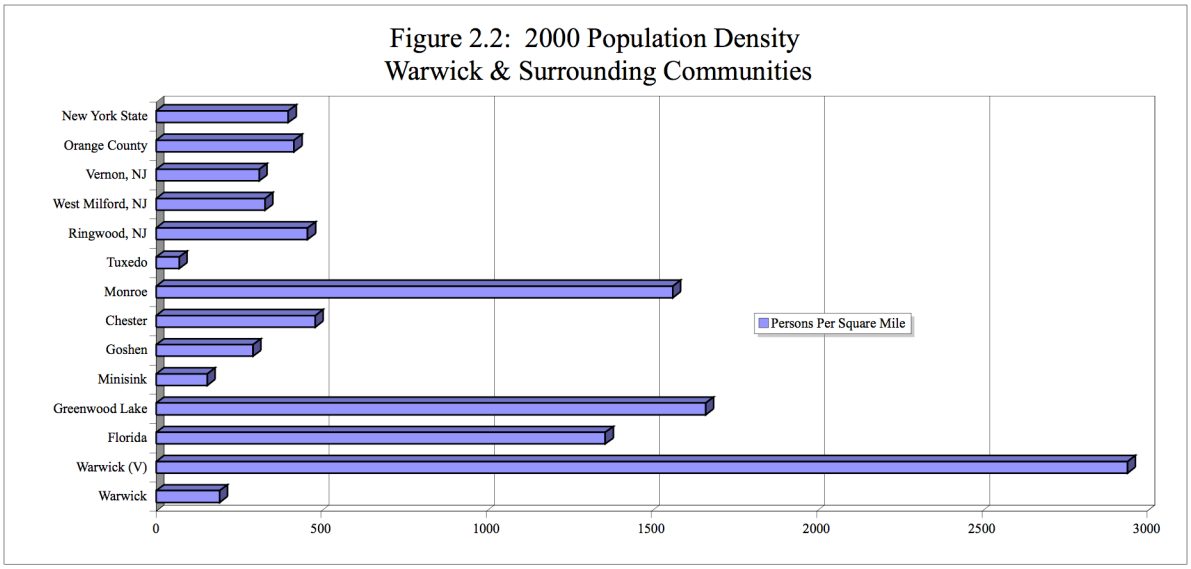
The Town of Warwick (including its three villages) is the second largest municipality in Orange County in total population but has the largest land area. In 1990, it had a population greater than four of the 62 counties within New York State. In 2000 this changed slightly; the Town had a population greater than only three of the 62 counties. However, historically, Warwick's rate of growth has been relatively slower than other Hudson Valley communities with direct access to major transportation routes.

Until recently, Warwick has been bypassed by major development. Warwick's (unincorporated areas) population increased by nearly 2,500 people between 1970 and 1980 from 9,416 persons to 11,900 persons, representing an average annual growth rate of 2.63 percent. Between 1980 and 1990, Warwick's population increased an additional 3,600 to 15,506 for an annual growth rate of 2.5 percent. Between 1990 and 2000, Warwick added 2,866 residents for an annual growth rate of 1.8%. It is expected that Warwick will experience continued population growth through 2020 and beyond, based upon population projections by the Orange County Department of Planning. The events of 9/11 have led to a housing boom from 2001 to about 2006, as city dwellers in the nearby New York Metropolitan area searched for small towns, like Warwick, to escape from city life. It should be noted that all references to Warwick will be to the unincorporated areas of the Town (i.e. excluding the three villages) unless stated otherwise. Trends in population are shown below in Figure 2.1.



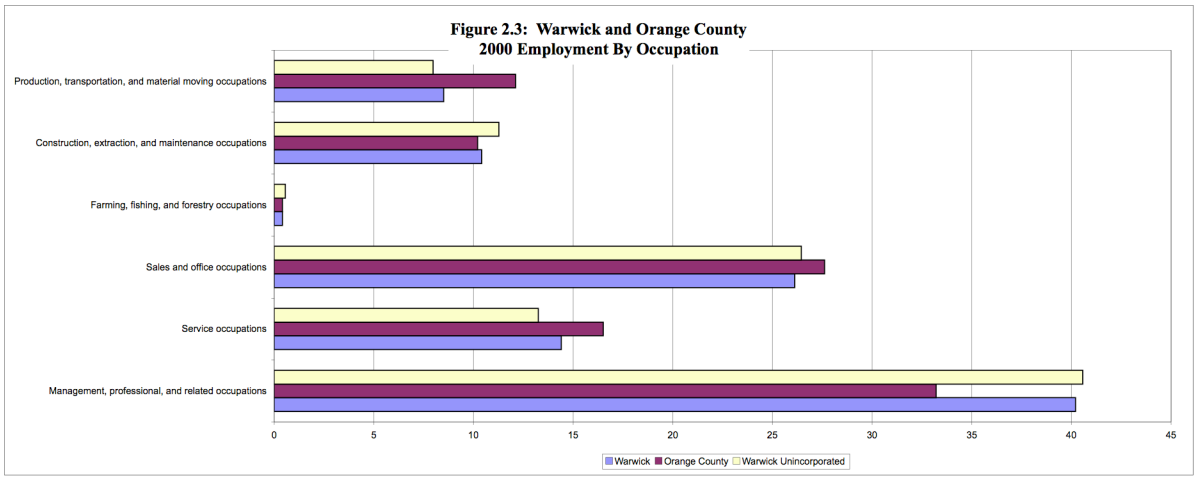
(B) POPULATION DENSITY

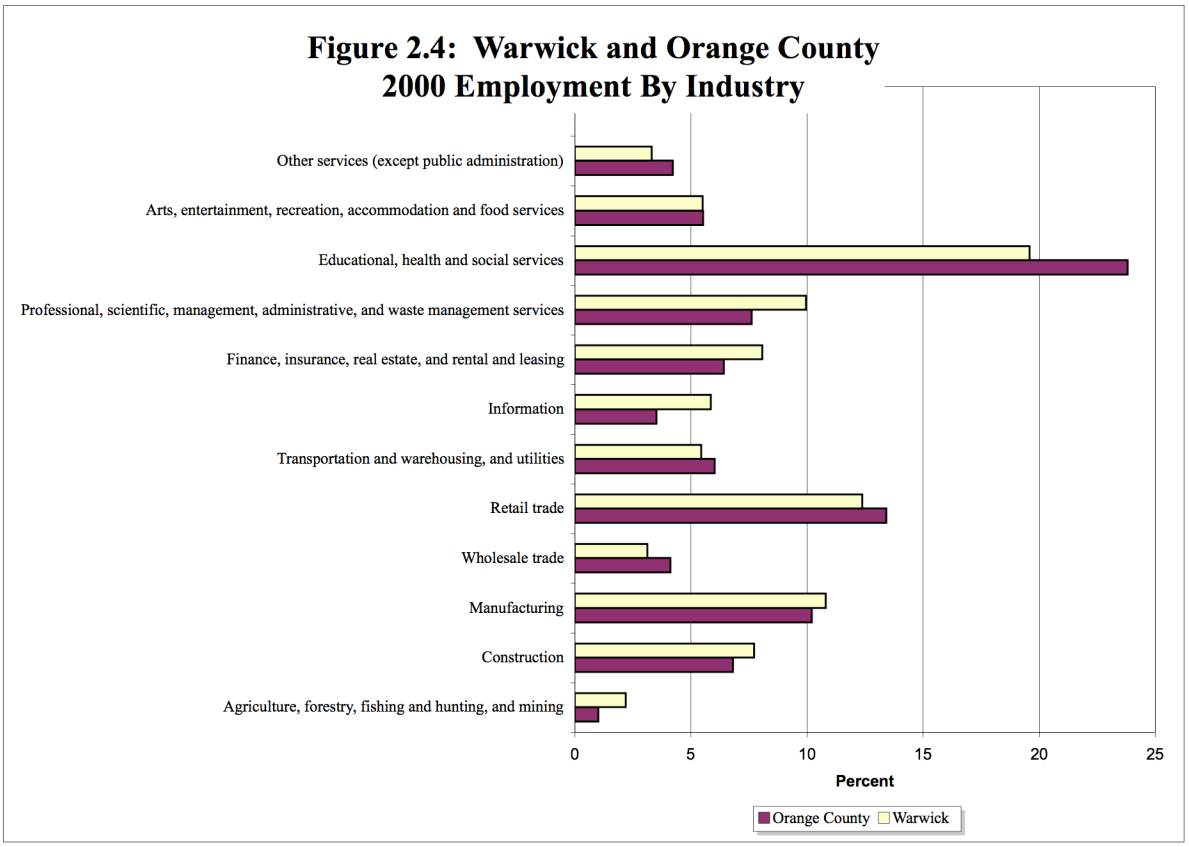
Population density provides a measure of the number of people per area of land. It is also a means that New York State uses to determine whether a community can be classified as rural, suburban or urban. In 1980, the unincorporated areas of Warwick had a population density of 125 persons per square mile. The 1990 Census saw that density jump to 162 persons per square mile, just slightly above the New York State Legislative Commission on Rural Resources' designation of 150 persons per square mile threshold for a "rural" town. In the 2000 Census, the population density for the Town has increased to 181 persons per square mile, just slightly above the threshold of a "rural" town. Population density of the Town, compared with its villages and surrounding towns can be seen in the Figure 2.2. As demonstrated by Figure 2.2, Warwick's population density is far below that of Orange County as a whole, and is comparable with some of its surrounding rural towns such as Minisink (155 person per square mile).



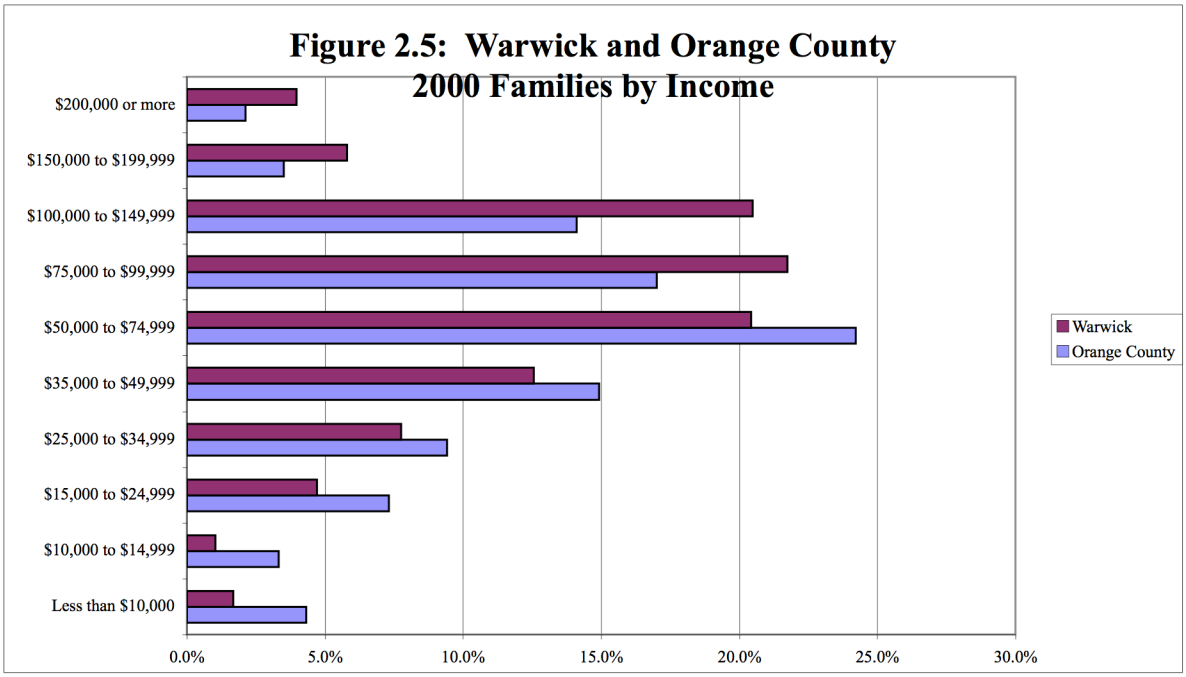
(C) DEMOGRAPHIC CHARACTERISTICS

As a whole, Warwick's population is predominantly middle class. According to the 1990 Census, 31 percent of employed persons work in professional and managerial occupations and 25 percent work in sales and administrative positions. While only 3 percent of the employed population are engaged in farming, forestry and fishing occupations, this figure exceeds the numbers of people employed in such occupations in Orange County overall (1.9 %). According to the 2000 Census, the higher percentage of employed persons (40%) worked in the management and professional occupations compared to 1990. This is higher than the County as whole (33.2%). Warwick maintained a similar percentage of people working in sales and office occupation with the 2000 Census showing 26.1%. The percentage of people working in farming, forestry and fishing has declined to 0.4% and equals the percentage of people working in this industry at the County wide level. Figure 2.3 compares employment by industry while Figure 2.4 shows employment by industry in Warwick with Orange County as a whole.





In 1990, median household income in the Town of Warwick (including the villages) was $43,021 as shown in Figure 2.5. This was higher than the county-wide figure of $39,198. For 2000, the median income in Warwick rose to $61,094. Unlike in 1990, this figure is slightly lower than the County median income of $64,947. Median refers to income levels where 50 percent of the responses are higher and 50 percent are lower. The Census indicates that four percent (4 %) of Warwick's population was considered to be persons living below the poverty level. This contrasts with Orange County as a whole that had approximately nine percent (9 %) of its population living below the poverty level. According to the 2000 Census, the percentage of Warwick's families living below the poverty level decreased slightly to 3.2%. The County also experienced a slight decrease to 8.4%.



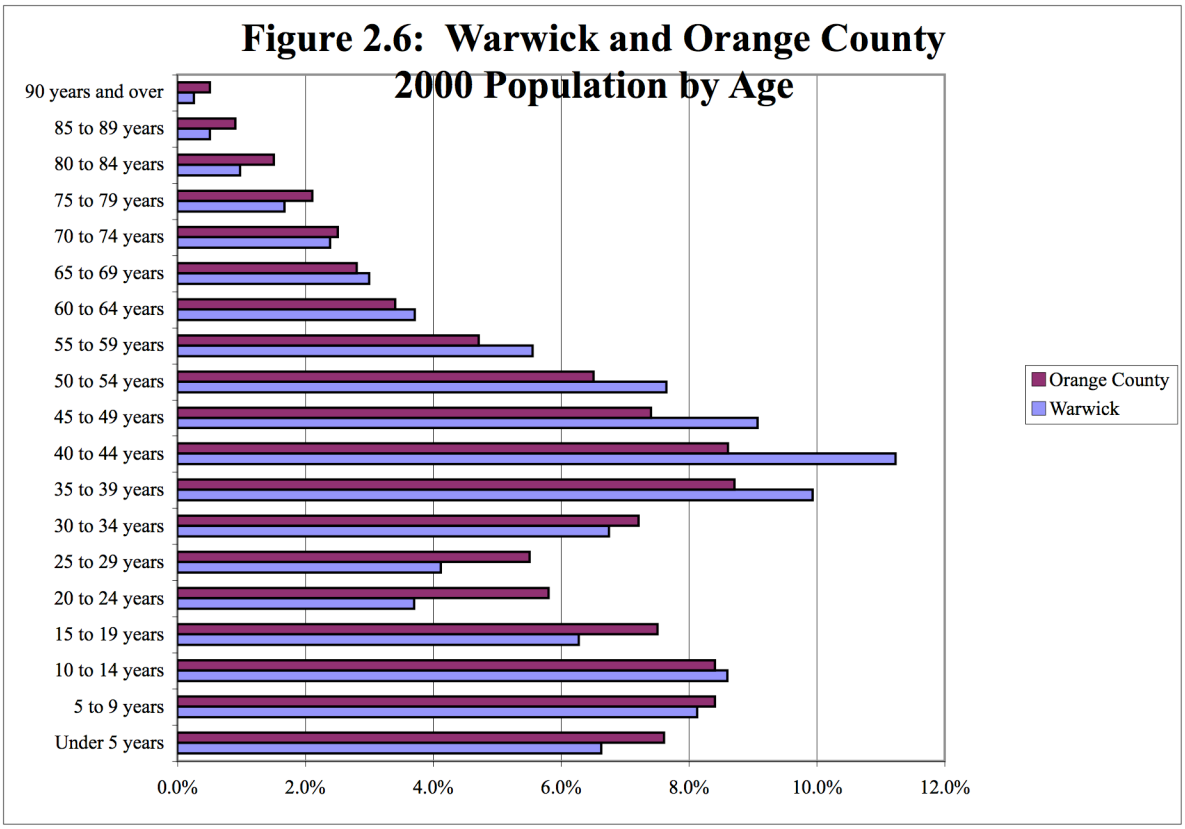
Warwick also has a growing commuter population. According to the 1990 Census, 30 percent of the employed population commuted to jobs outside of Orange County. The largest number commute to New York City (about 8 %), with Rockland, Bergen, Dutchess, and Westchester counties also accounting for a large number of commuter destinations. For 2000, almost 23% of the employed population worked outside of Orange County and 19% worked outside of the State.

National trends for smaller household size and higher median age are generally reflected in Warwick as well as the rest of Orange County. Generally there has been an increase in the number of young and middle aged adults and a decrease in the number of children. These trends are expected to be long term and will be reflected in the housing market with a greater demand for smaller homes. Table 2.1 below compares median age, median household income, and average household size for Warwick from 1970 through 1990.

Table 2.1
Demographic Characteristics Summary for Warwick
1970 to 2000

	1970	1980	1990	2000
Median Age	33.6	33.2	33.5	38.3
Average Household Size	2.99	2.39	2.83	2.74
Median Household Income	—	$16,833	$43,021	$61,904

The distribution of population by age groups in Warwick (including the villages) is important to determine which services are needed most. Figure 2.6 provides an overview of the Town's population by age, contrasted with Orange County as a whole, and the changes that have occurred between 1980 and 1990. According to the Census data, the pre-school and elementary school age group has remained relatively stable, in terms of percent of total population, while the 10 to 17 and 18 to 20 age group has declined. The age group that registered the greatest increase between 1980 and 1990 was the 35 to 44 age group. The 25 to 34 and the 45 to 54 age groups increased, but less than the 35 to 44 age group. The Town also registered a decline in the 65 to 74 and 75+ age groups.



The distribution of population for Warwick in the 2000 Census remained fairly consistent with the 1990 distribution. There was close to a 2% decline in pre-school age children and a minor increase in elementary school age children (0.3%). There are small increase in the 10-14 (1.3%) and the 15-19 (0.4%) age groups. The largest decline, 7.5%, occurred in the 25-34 age group and the largest percentage increase, nearly 5%, occurred in the 45-54 age groups. At the County level, almost all of the age group categories saw small losses ranging from 0% to 5.9%. Minor increases occurred within the 10-14 (0.6%) and 85 and over (0.3%) categories. A small increase (2.7%), which also represents the largest increase, is in the 45-54 age category.

Table 2.2
Age Characteristics for Warwick 1980 to 2000

	Warwick in 1980		Warwick in 1990		Warwick in 2000[1]	
Age	Number	%	Number	%	Number	%
0-4	900	7.5	1179	7.6	1,216	6.6%
5-9	903	7.6	1183	7.6	1,491	8.1%
10-17	1804	15.0	1697	10.9	n/a	n/a
18-20	599	5.0	572	3.7	n/a	n/a
21-24	584	4.9	795	5.1	n/a	n/a
25-34	1985	16.7	2821	18.2	1,994	10.9%
35-44	1829	15.4	2928	18.9	3,886	21.2%
45-54	1212	10.2	1853	12.0	3,069	16.7%
55-64	912	7.7	1264	8.2	n/a	n/a
65-74	797	6.7	747	4.8	987	5.4%
75+	366	3.1	465	2.9	621	3.4%
Total	11,891	—	15,504	—	18,370	

According to the latest Local Area Unemployment Statistics from the New York State Department of Labor (as of 12/18/96), Warwick's unemployment rate (including the three villages) remained lower than Orange County's as a whole and substantially less than statewide. The Warwick rate was 2.7 percent with 13,399 persons employed out of a total labor force of 13,767. For Orange County, the unemployment rate was 3.5 percent and for New York State it was 5.7 percent. The trend can be explained by the stability of the construction and retail trade industries in the Town, the increases in service jobs, and the availability of jobs within commuting distance in the New York metropolitan area.

The average annual unemployment rate according to the Local Area Unemployment Statistics from the New York State Department of Labor for the Town in 2007 was 3.8% and is slightly lower than the County average which is 4.3% for the same period. Statewide, the annual unemployment for 2007 is 4.5%. The Town and County unemployment rates are up slightly from the 1996 figures noted above, however the State unemployment rate has decreased slightly.

Employment by occupation (Figure 2.3) reveals the character of the workforce in the Town of Warwick. The need for Town services can be determined by referring to this information. The largest single category of workers in the Town are the managers and professionals, accounting for almost one-third of all employed persons. This is greater than Orange County,

[1] The 2000 Census captured age data in different categories from prior decennial censuses. Please note where the data was not consistent, it is noted with "n/a". The total for 2000 reflects the total number of persons, not simply the total of the noted age categories in this table.

which has about one-quarter of its employment in the managerial and professional sector. The second largest group are the administrative support and clerical workers. This group makes up almost 16 percent of the employed population. Warwick has fewer workers in retail sales, since there are no large retail malls in the Town and no public transit is available to the several large retail malls in nearby localities.

2.3 ZONING AND LAND USE

(A) ZONING

The intent of zoning is to accommodate new growth in a way that is best suited to both the environment and the existing community. The zoning prior to 2002 was based on a 1974 *Master Plan* that projected a greater number of people in the year 2000 in the unincorporated areas of the Town of Warwick. The 1987 *Master Plan* recommended a number of zoning changes, many of which were implemented by the 1989 Town of Warwick Zoning Law. Then the 1999 *Comprehensive Plan* recommended new zoning changes, which were implemented in a comprehensive revision to the Zoning Law in 2002. No additional Zoning map changes have been proposed in this 2008 update to the Comprehensive Plan.

There are currently fifteen (15) zoning districts in the Town: six for residential use, one agricultural zone, three for business and industrial purposes, one for mixed use, and four for resource conservation. About 74 percent of the land is zoned for residential use. Commercial and industrial zones occupy only 4 percent of the Town and agriculture 9 percent. The Sterling Forest State Park represents the remaining 13 percent of Warwick.

The largest residential zoning district is RU (Rural). This zoning category covers the areas where neither high growth is planned nor major environmentally sensitive areas are located. Density is at one unit per four (4) or more acres of land. One and two family buildings are considered permitted uses with agricultural uses also permitted. A wide variety of specially permitted uses are allowed in the RU zone. These are uses that are permitted but subject to certain conditions that assure the use will be in harmony with the Zoning Law and will not adversely affect the neighborhood if certain conditions are met. Most of the development that has been occurring since the new zoning was adopted in 2002 have been cluster developments. This type of subdivision development has resulted in more than 1,500 acres of permanently preserved open space in the Town.

The MT (Mountain) District is the next largest zoning category. This district is intended to preserve primarily mountainous lands by having a density of one dwelling unit per five (5) or more acres. At least 10,000 square feet of the lot area must be on slopes of less than 15 percent. Only single family dwellings are permitted in this zone, but a number of specially permitted uses are allowed, subject to additional special permit conditions. The CO (Conservation) District is scattered around the Town in areas where environmental sensitivity precludes large scale development; it is the Town's most restrictive zoning district. The largest CO zone is located along Bellvale Mountain and the Appalachian Trail from the Passaic

County, New Jersey border northward to the border with the Town of Chester. Other locations of the CO zone include Taylor and Warwick Mountains, the large wetland complex east of Wickham Lake (New York State Department of Environmental Conservation Wetland No. WR-27, which is the largest in the Town), the area surrounding Glenmere Lake, a wetland complex associated with the Pochuck Creek, and Mt. Adam and Mt. Eve. Only single-family residential dwellings are permitted on a lot size of six (6) or more acres. Like the MT zone, at least 10,000 square feet of the lot area must be on slopes of less than 15 percent. A variety of special permit uses are also allowed in the CO zone.

The Town's Suburban Residential (SL and SM) Districts include those areas designated to receive the highest growth. The SR Districts include the SL zone and the SM zone. Both zoning districts permit single-family and two-family dwellings. In the SM zone, either dwelling type can be located on lots that are at least one-half (½)acres while the SL zone permits single-family dwellings and two-family dwellings on three (3) or more acre lots. The special permit uses allowed in the SM zone are highly restrictive, being confined to parks and playgrounds, single-family to two-family building conversions, nursery schools, and railroad and utility uses. The SL zone allows a wider variety of special permit uses that are generally consistent with those allowed in the Town's other residential zones. The existing SR Zones surround the Villages of Warwick and Florida, include the remaining lands in the Town south of the Village of Greenwood Lake to the New Jersey border, and provides pockets for development near Wickham Village, Pine Island, Edenville, Amity, Little York, and New Milford.

The Agricultural (A) Zone primarily includes the "black dirt" area in western Warwick. Although single-family development is allowed by special use permit, the existing limitations of the black dirt soils confine most uses to agriculture. A high groundwater table in the black dirt area largely precludes construction of septic disposal systems. The stipulated residential density of one unit per one and one-half acres for a single-family dwelling, has little meaning in realistic development terms even with today's on-site wastewater disposal technologies.

The three commercial business zones include Local Business (LB), Designed Shopping Center (DS), and Office and Industrial Park (OI). The primary differences between the local business zones and the designed shopping center zones are in the minimum acreages (5 acres for the DS zone and 10,000 square feet to 5 acres for the LB zones. The OI zone requires 5 acres for most special permit uses. Only agricultural uses are permitted uses in the OI zone.

In 2002, the Town enacted a voluntary Agricultural Protection Overlay District (APO) to help reduce land use incompatibilities and increase financial opportunities for the agricultural industry. This district permits a voluntary transfer of development rights to allow farmers to realize the current development potential of their land while still allowing it to remain in agricultural use.

Pine Island, the Local Business zones, and the SR zones were designated with a Traditional Neighborhood (TN-O) Overlay Zoning District to permit development of pedestrian oriented neighborhoods in these areas. If development rights are purchased from the APO District, greater density can be achieved in the TN-O District than otherwise allowed in the underlying Districts. The environmental review process for development in the TN-O District could be

streamlined by adhering to thresholds established in a Generic Environmental Impact Statement prepared by the Town.

A Ridgeline Overlay District (RL-O) was added, with new design standards to protect important scenic and environmental resources in the Town's higher elevations. An Aquifer Overlay (AQ-O) District was also added, with new rules to protect groundwater for present and future generations.

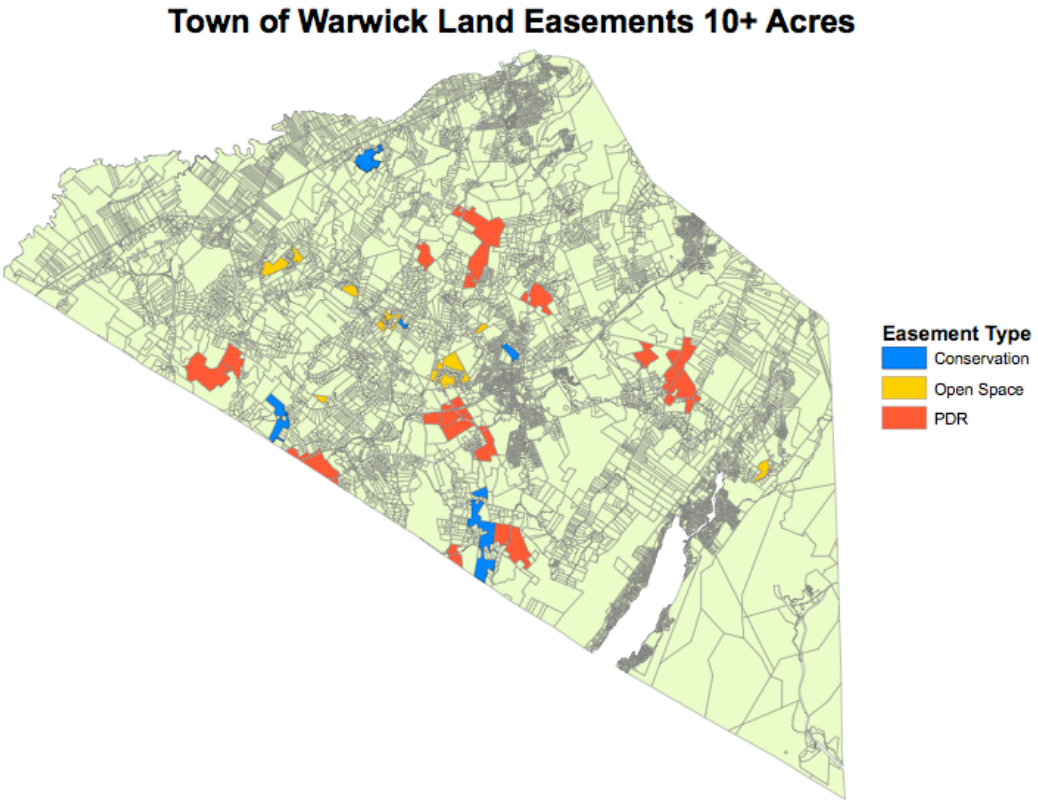
(B) LAND USE

The high percentage of natural and/or agricultural land gives Warwick the beauty that is so valued by its citizens. When an analysis of land use was conducted for the 1987 *Master Plan*, approximately 90 percent of Warwick was either in a natural state (undeveloped 53.5%; open space or park 7.3%), or in agricultural use (30%), as shown in Table 2.3. Vacant land was most dominant in the eastern portion of the Town where steep slopes make development impractical. In 1995, this percentage had slipped to 67 percent of the Town's land area. Undeveloped lands in 1995 represented 33 percent, open space 7.8 percent, and agriculture 26 percent. Current land use is shown on a Figure in Appendix A. The land use map was developed by the Orange County Water Authority, based upon Town assessment records.

Agriculture continues to be the only land use that has a clear development pattern in the Town. Moving from east to west, active farming increases steadily until reaching the agricultural dominance of the "black dirt" region. About 58 percent of agricultural land in Warwick is included in the truck farming of this area. General agricultural uses occupy about 40 percent of the farm land, mostly in the central part of the Town. Horse farming is practiced on about 2 percent of agricultural lands.

Residential use in 1987 represented only 6.4 percent of the total land area, but by 1995, this land use had jumped to 27 percent of the total land area. Since homes line a majority of the frontage along major roads, the visual perception of Warwick's residential development is even greater.

Prior to 2002, the majority of the residential land area was occupied by homes on large lots. Other than a natural attraction to area lakes, larger small lot developments appear to have no clear locational pattern, including any relationship to the existing zoning. Since adding conservation subdivision as an alternative development technique in the 2002 Zoning Law, most subdivision activity has been through the cluster subdivision provisions of New York State Town Law. This has, since 2002, resulted in preservation of approximately 1,500 acres of permanently preserved open space through the subdivision approval process. Although the Town requires that at least 50 percent of a parcel subject to subdivision development remain as open space, the average subdivision development has resulted in 63 percent preserved as open space. Parcels greater than 10 acres, preserved through the PDR program or other means, are shown on the following page.



Existing commercial and industrial development in 1987 occupied only 1 percent of the Town but by 1995 occupied four (4) percent of the land. Most development is scattered. Some commercial areas are remnants of earlier hamlet centers or relate to major roads.

Institutional land, dominated by the Mid-Orange Correctional Facility, is the remaining 2.8 percent of Warwick's developed land area.

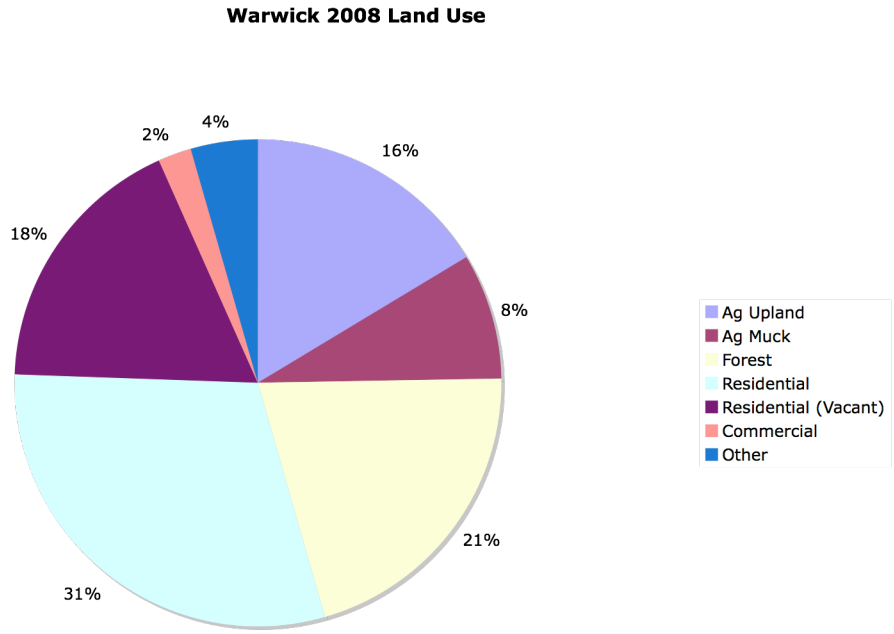
Table 2.3: Land Use
1986 and 1995

Land Use Category	1986 Acres*	% of Town	1995 Acres	% of Town
Residential - Total	4,077	6.4%	16,463.4	26.6%
• Suburban (one acre or less)	2,034	3.2%	7981.4	12.9%
• Rural	1,971	3.1%	6057.6	9.7%
• Multi-family	72	0.1%	2424.4	3.9%
Commercial/Industrial - Total	836	1.2%	2,434.1	3.9%
• Retail Commercial	127	0.2%	208.1	0.3%
• General Commercial	47	0.01%	282.8	0.4%
• Office	25	0.00%	60.4	0.09%

Land Use Category	1986 Acres*	% of Town	1995 Acres	% of Town
• Industry	190	0.3%	229.4	0.3%
• Warehousing/Storage	290	0.5%	1046.3	1.6%
• Utilities/Transportation	157	0.2%	607.1	0.9%
Institution - Total	1,143	1.7%	1,790.3	2.8%
• Schools	219	0.3%	208.3	0.3%
• Churches	174	0.2%	809.4	1.3%
• State Correctional Facility	750	1.2%	772.6	1.2%
Total Developed Land	6,056	9.4%		
Agriculture - Total	19,213	30.0%	16,281.1	26%
• Truck Farming	6,625	10.4%	9388.3	15.2%
• Horse Farming	985	18.1%	327.4	0.5%
• General Agriculture	11,603	1.5%	6565.4	10.6%
Open Space - Total	4,429	7.0%	4,844.6	7.8%
• Dedicated Parkland	748	1.2%	819.0	1.3%
• Open Conservation Land & Water (Includes Appalachian Trail)	2,984	4.7%	1941.4	3.1%
• Private Recreation Areas	479	0.8%	1866.2	3.0%
• Major Lakes	218	57.4%*	218	0.3%
Undeveloped	34,302	53.6%	20,439.6	33%
Total Town Acreage	64,000		61,821.4	

* Note: This percentage figure for major lakes appeared as a typographical error in the 1987 Plan.

All 1986 figures represented rough approximations of the unincorporated areas in the Town of Warwick based upon measurements on a 1" = 2000' scale land use map developed for the 1987 *Master Plan*. Land use information for 1995 was based upon Town assessment records. The categories and methods used by the Town Assessor to identify land uses in the Town may differ slightly from the method used for the 1987 *Master Plan*. The most recent land use information is illustrated on the pie chart below. The chart illustrates the land use makeup of Warwick in 2008. However, the categories are based upon the Town's more recent assessment records, which do not match the prior land use information.



2.4 HOUSING

The Town of Warwick experienced an increase in housing units in the 1970's. The table below indicates that the number of housing units in the Town of Warwick increased 11 percent between 1970 and 1980. In the same period, a 17 percent rise was experienced by the constituent villages of Warwick, Florida and Greenwood Lake. Orange County's housing stock grew 22 percent during this same period. From 1980 to 1990, the rate of increase in the supply of housing units more than doubled for the unincorporated areas of Warwick, increased slightly in its villages, and decreased in Orange County overall.

Table 2.4: Trends in Supply of Housing Units 1970 - 1990

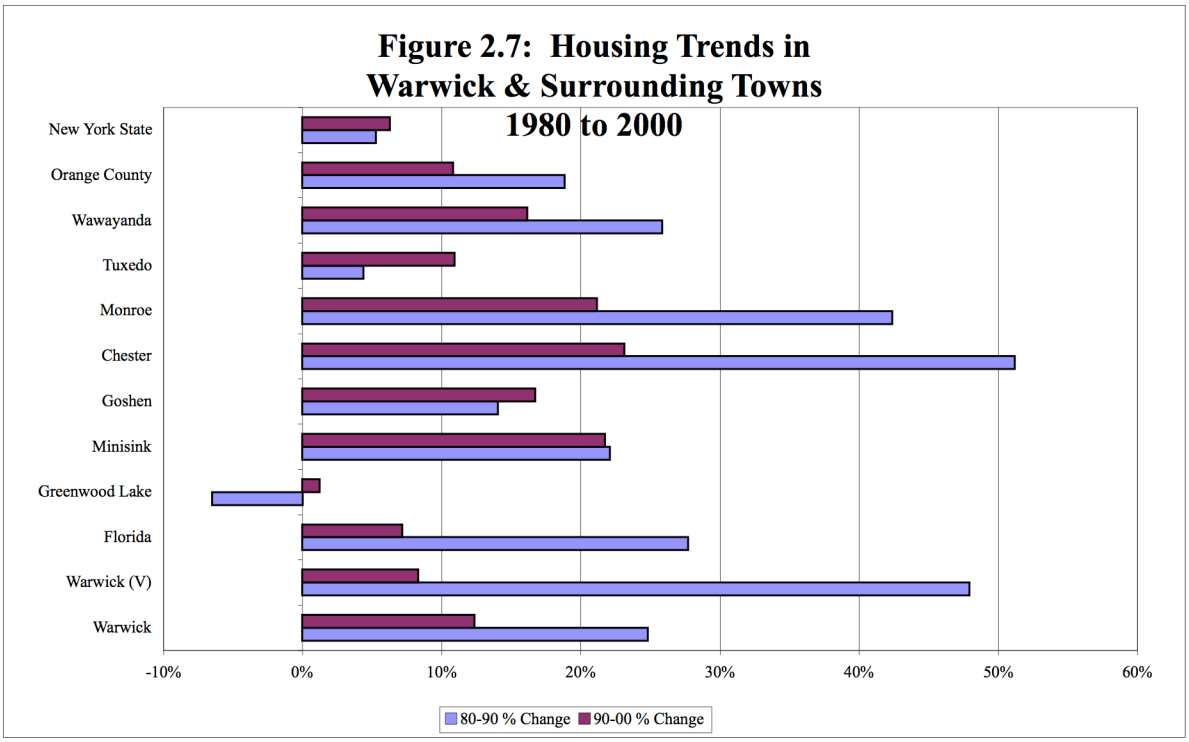
	1970	1980	% Change	1990	% Change
Warwick*	7,199	8,431	17 %	10,522	25 %
Warwick	4,029	4,465	11 %	5,683	27 %
Orange County	76,753	93,274	22 %	110,814	19 %

* includes villages of Warwick, Florida and Greenwood Lake

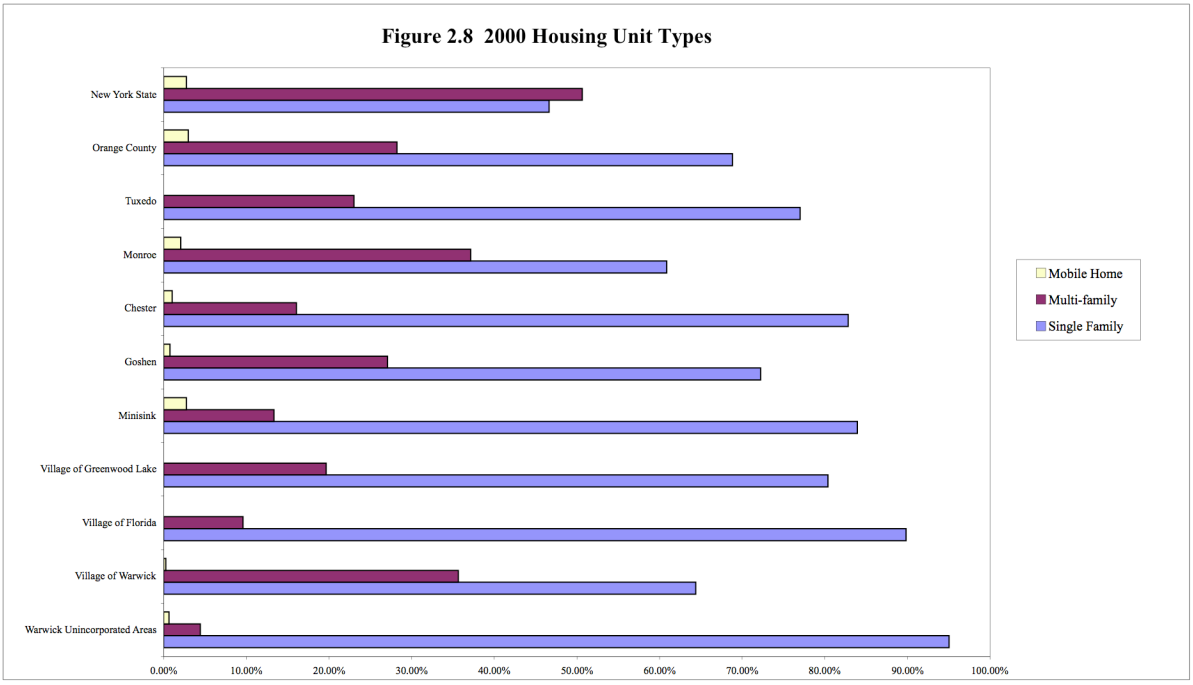
Warwick's population growth has been transforming the Town from a predominately rural-agricultural community to a suburban-residential community. The remaining open space lands

are facing strong pressure from development activity. The manner in which these demands are addressed, will have a significant effect on the character of the community.

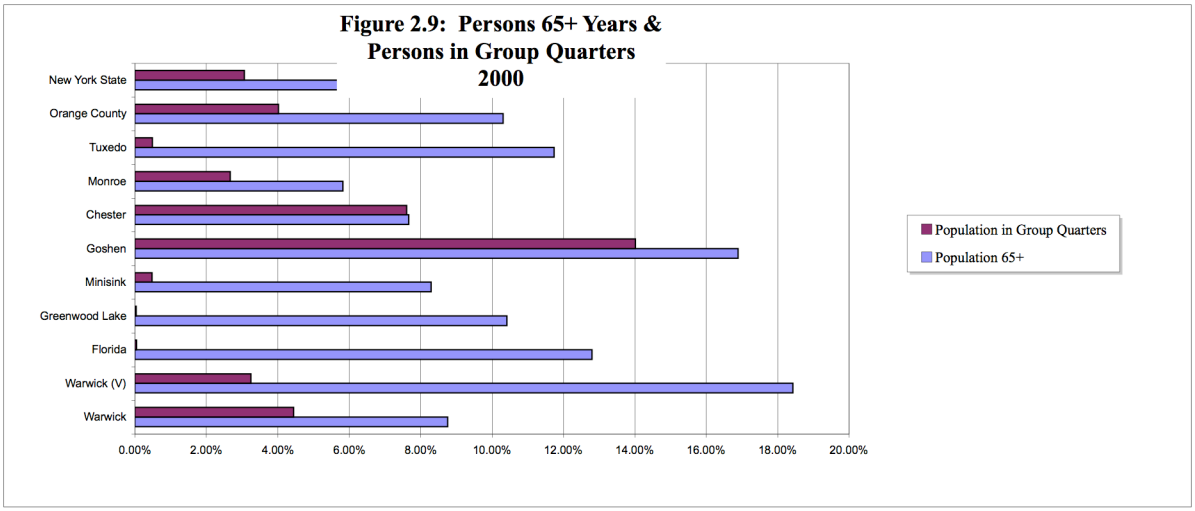
The number of housing units increased in the Town from 8,431 in 1980 to 10,522 in 1990. Warwick fell in the middle of housing growth rates, when compared with the surrounding towns and the three villages (except for Greenwood Lake where the number of housing units declined). However, the rate of new housing units in the Town exceeded Orange County's increase during the same period. Tuxedo, Goshen and Minisink's rates of growth in housing units fell below Warwick's while Chester and Monroe's both exceeded Warwick's, as shown in Figure 2.7.



The variety of housing available in Warwick and surrounding communities is shown in Figure 2.8. Warwick is dominated by single family homes. Multi family housing accounts for just 8.5 percent of all dwelling units (and is largely found in the Kings Estates development on Kings Highway), which is less than any of the surrounding Towns, the County or the State as a whole. The numbers of mobile homes is roughly comparable with surrounding towns like Chester, Monroe and Tuxedo, but is less than is found elsewhere in Orange County or the State of New York.

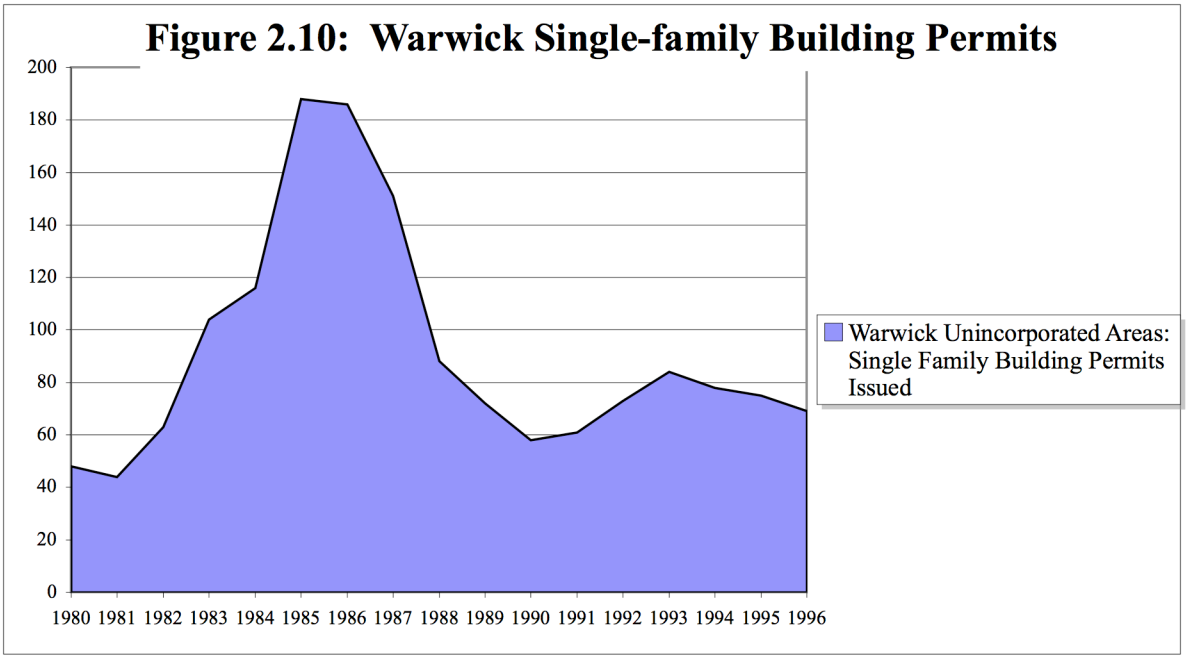


The number of single person households whose members are 65 or older is shown in Figure 2.9. These figures are significant because they relate to a population group that needs special housing features, such as low maintenance (including costs), access to community services, and public transportation. Warwick has a smaller percentage of persons 65+ than any of the other towns except for Chester and Monroe, and less than Orange County and New York State.



With the exception of Goshen, Warwick has a greater percentage of its residents in group quarters than surrounding towns. This can be explained by the presence of the Mid-Orange Correctional Facility in the Town which gives the Town more than twice the Statewide average of persons in group quarters.

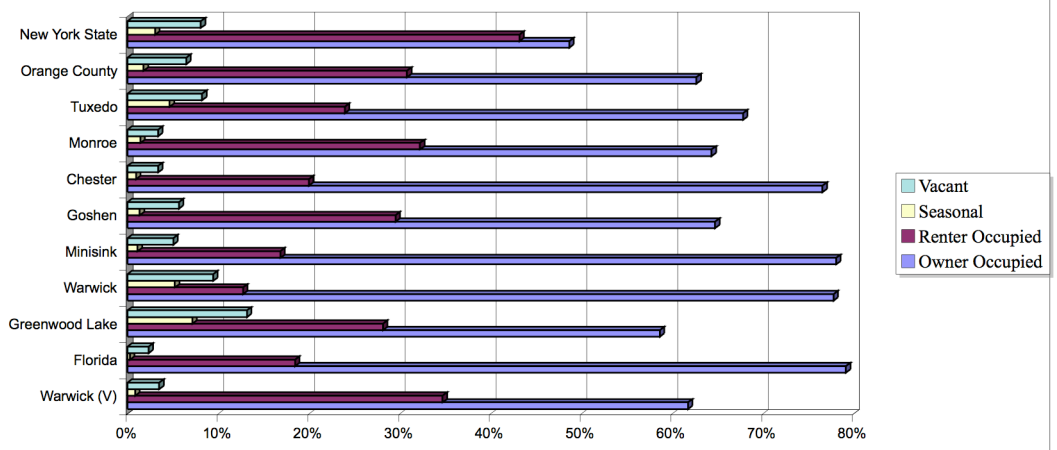
The number of new single-family building permits, issued by the Town Building Department, during the past 16 years is shown in Figure 2.10. This chart illustrates the peak building boom that occurred in the mid-1980's. Since that time, building activity has slacked off to levels comparable to the early 1980's.



The cost of housing in Warwick has been a definite attraction for home owners in the past. According to the 1980 U.S. Census, the median value of a home was estimated to be under $50,000 while in 1990, it skyrocketed to $154,500. By the second quarter of 2008, median sales price of a home was just under $300,000, from a market correction in 2006-2007, when it reached a high of $400,000. This is still less than many communities closer to New York City, where the cost of housing is substantially higher than Warwick.

Even though this rise is expected to level off in the future, the percentage of moderately priced housing in the Town will be limited. Thus, Warwick, faces a growing need for affordable housing. Warwick, like many of its surrounding towns, is dominated by single family, owner-occupied homes, as shown in Figure 2.11.

Figure 2.11: Housing Ownership in 2000



The *Orange County Comprehensive Plan* suggests that affordable housing is the responsibility of each municipality. The *Plan* states that low and moderate income housing requires government subsidies in one form or another. Local communities, however, still must be the applicants for these funds and must encourage local sponsors of these projects. The *County Plan* also indicates that urban areas, such as the villages, are expected to absorb this type of housing. Rural areas should be "only for farm related dwellings and custom built homes on lots in excess of one acre." In 2003, the Town implemented a mandatory 10 percent affordable housing requirements for all subdivisions for 10 or more lots. The lot required by the special use permit regulations is a bonus lot to the applicant. For example, in a 10 lot subdivision, there will be created an 11th lot that must be dedicated in perpetuity (through a deed restriction to maintain affordability) as affordable.

2.5 ENVIRONMENTAL CONDITIONS

Warwick's natural environment has been and will be a major force in shaping the Town's development pattern. The steep slopes of the Ramapo Mountains in the east have not only limited development within the mountain range but have made access to the rest of the Town from the east difficult, creating a buffer to intense development pressures. In the western section of the Town, the black dirt soil cannot realistically be built on due to the high water table and resulting soil conditions. In the central region, the rolling hills provide excellent development opportunities, from a topographical standpoint, but the limited availability of centralized water services, concern about environmental quality, and the importance accorded to maintenance of rural and agricultural character in the Town, restricts the amount of prudent development.

In order to incorporate environmental factors into the *Comprehensive Plan*, it is necessary first to inventory the existing conditions. This section of the Plan summarizes those environmental factors that affect the future development of the Town including:

- Topography and Soils
- Groundwater Resources
- Surface Water
- Environmental Features
- Cultural and Historical Features

(A) TOPOGRAPHY AND SOILS

Warwick's topography and soil types can be divided into three distinct districts: (1) the Ramapo Mountains in the east, (2) the rolling hills of central Warwick, and (3) the black dirt region to the west. Each of these districts are described below:

MOUNTAIN REGION

The Ramapo Mountains rise dramatically to over 1000 feet above the low lying farm lands to the west. The highest peak (Taylor Mountain) reaches 1,417 feet above sea level. Nearly 30 percent of the slopes in the mountain region are characterized by a 20 percent or greater incline, making any sizable development extremely difficult. The maximum slope for an all season road is generally considered to be 10 percent.

Warwick's Ramapo Mountain range is formed by two north/south ridges divided by the Greenwood Lake and Trout Brook drainage basins. Hard metamorphic gneiss, granite, and conglomerate as well as a ridge of sandstone, have resisted both historic glacial action and continual wearing by wind and rain to create today's distinct formations. Attempts at road building and installation of water and sewer systems have proven costly in this hard rock based region. Radon gas and its potential effects on housing in this region has been a concern for both existing and new development.

Soils in this mountainous region are generally glacial till deposits with frequent rock outcrops, especially in the south. Most soils in the mountains are classified by the U.S. Natural Resource Service (NRS) as having severe septic limitations due to steep slopes and occasional shallow depth to bedrock or a hard fragipan layer. The variability of soil characteristics suggests that site specific soil analyses are needed for most development.

The agricultural value of the Ramapo Mountain region is limited. Generally speaking, only select soils in the drainage basin between the two ridgelines have value for crops. Some of these soils are productive for grass and alfalfa hay. The rest of this area, except in the steep slopes or rock outcrop areas, is good for pasture land only. However, there are no remaining active farms in this area.

The high elevations of the mountain slopes have created opportunities for magnificent views of the lands below and from the valley to the mountain ridgeline above. Both ridgelines have hiking trails that take advantage of this scenic beauty. Because of the severe constraints of the steep slopes and prevalent bedrock, development has been generally confined to occasional single family homes (with the exception of a small, but costly, project on Sterling Lake).

The Sterling Forest Corporation, in 1991, proposed extensive development of their land holdings in Warwick, Tuxedo, and Monroe. In Warwick, there had been proposed a total of 4,600 housing units, 1,503,000 square feet of commercial development, 25 acres of community facilities, 98 acres of roads and utilities, and 7,300 acres of protected open space. This project was reviewed under the State's Generic Environmental Impact Statement procedures by the Department of Environmental Conservation, which was the State Environmental Quality Review Act (SEQR) lead agency. Following acceptance of the Draft Generic Environmental Impact Statement and the conduct of several public hearings on the development application, the State of New York announced, on May 13, 1996, that it would help with the purchase of nearly all of Sterling Forest's land holdings in the Town of Warwick for park and open space purposes. Approximately 200 acres have been retained by the corporation in Warwick for future development purposes. Sterling Forest State Park has now become a fixture in the Town of Warwick.

Following 15 years of review by the Town Board of the Town of Tuxedo, the Tuxedo Reserve project received its development approvals in 2004. This project, which is expected to take 12 years to construct, includes 1,195 dwellings and 196,000 square feet of office space. Early in 2008, the Tuxedo Planning Board granted its first preliminary approval to what is expected to be many phases of development.

Central Rolling Hills

Central Warwick is dominated by rolling hills with two exceptions: (1) the flat, alluvial plain of the Wawayanda Creek to the east; and (2) isolated mountain peaks to the west. Over 70 percent of this central area has slopes of less than 10 percent. Largely because of this characteristic, Warwick's most suitable development sites are located in this region.

Although soils are variable, both in terms of drainage and depth to bedrock, overall they are generally well drained and at sufficient depth for development. Caution is necessary in some areas where deep pockets of sand or gravel deposits can create a pollution hazard for groundwater. Some soils also have limitations where limestone bedrock is close to the surface. Concern has also been raised about Halcyon Lake Calc-Dolomite bedrock as well. Because of the possibility of solution cavities in the bedrock, pollution from septic effluent is a potentially serious hazard.

BLACK DIRT REGION

Historically the "black dirt" region of Warwick was called the Drowned Land. At one time, the black dirt area was covered by a shallow glacial lake. As the last of the glaciers melted away about 10,000 years ago when the climate warmed, lush vegetation grew up, died and sank to the lake bottom. Most of the lake area gradually filled in, forming a large wetland complex where layer upon layer of decaying organic matter built up. When immigrants came to the area about 100 years ago, they quickly realized the value of the soil that lay below "the drowned lands". For years, the new residents toiled to clear the land by hand and construct an extensive system of drainage ditches. Names like Pine Island, Merritts Island, and Black Walnut Island are reminders of this past.

The soil is an extremely deep (usually more than 96 inches) organic soil that is really suitable only for farming. Common crops are onions, mixed vegetables, and lettuce as well as sod farming. The poor strength of the soil, potential problems with frost action, frequent flooding and wetness severely limit development opportunities. Communities are confined to the "islands" and the edges of the black dirt area.

(B) GROUNDWATER

Groundwater resources are critical to future development in Warwick. Since most of the Town relies on well water for domestic needs, it is essential to not only assure that there is an adequate supply for future growth but to protect this supply from potential pollution.

The term groundwater refers to the water below the land surface that fills openings in rock. An aquifer is a water-bearing rock reservoir. They may either exist in openings such as a fracture, or cavity in consolidated (solid) rocks or in intergranular spaces in unconsolidated (broken) rocks such as sand and gravel.

Sand and gravel deposits are generally the best sources of large quantities of ground water in Warwick. The Town's Aquifer Protection Overlay map shows the location of unconsolidated rocks that have potential for groundwater. Unconsolidated aquifers in Warwick lie mainly in the alluvial plains of the Wallkill River to the west and the Wawayanda Creek in central Warwick. The map also shows favorable locations for targeting high yield bedrock wells.

Water withdrawn from an aquifer comes from two potential sources: recharge and stored water. The potential yield from unconsolidated rocks will vary greatly with grain size and consistency. A *Regional Groundwater Study: Town of Warwick* was prepared in 1994 by the Town Engineers for the Orange County Water Authority. Some of the information presented below, is excerpted from such *Study.*

Numerous sand and gravel deposits along the Wawayanda Creek have been developed for water supply purposes. Much of the annual recharge enters through sand and gravel deltas at the edge of the main river plain and tributaries during the spring snowmelt. Tributary streams crossing these deltas are primary sources. Thus, the yield of these aquifers can vary seasonally. Since the permeability of Wawayanda Creek itself is low, it is doubtful that much recharge

occurs there. Wells developed within the outwash and alluvial deposits associated with the Creek and its tributaries can yield from 200 to 800 gallons per minute (gpm) at depths ranging from 45 to 75 feet. Recent development along State Route 94 south of the Village of Warwick has revealed additional sizable sand and gravel deposits along the Creek, although such deposits have not as yet been developed for community water supply purposes.

The sand and gravel deposits below the Wallkill River are more difficult to access for recharge. A silt and clay layer below the organic topsoils creates a barrier for direct penetration. Recharge occurs primarily from precipitation falling directly on the limited surface exposures of sand and gravel. Although individual well yield may be high, the slower rate of recharge ultimately limits the safe yield of the aquifer.

A sand and gravel aquifer at the north end of Greenwood Lake supplies water to the Village. A subsurface spring from this aquifer also feeds the Lake itself helping to maintain the water level of the Lake during low periods of precipitation. Since the aquifer is in hydraulic contact with the Lake, the potential for additional recharge from the Lake allows for an increased yield if needed. Well yields range from 200 to 500 gpm at depths from 45 to 90 feet below the surface. Much of the village is built directly over the aquifer which creates a potential pollution problem because there is little or no barrier between the land surface and the aquifer.

Pine Island has a community water supply founded in sand and gravel deposits. These sand and gravel deposits are most likely glacial outwash features associated with the Pochuck Creek. Well depths range from 32 to 66 feet, but well yields are not available. To date, no other significant unconsolidated sand and gravel aquifers have been developed within the Town.

Although a few isolated areas exist within the Town where rock formations do not yield sufficient quantities of groundwater for residential development, for the most part, quality groundwater may be obtained in sufficient quantities for individual home use almost anywhere in Warwick. Fractured consolidated rock is the primary source of this supply. Moderate quantities of water, capable of serving future developments can generally also be obtained from unconsolidated rock aquifers. Because of the small storage capacity in these rocks, wells are quite susceptible to drought conditions.

Bedrock aquifers also contribute to the community water supply systems in the Town. In the central portion of the Town, the Martinsburg Formation (which is primarily heavily folded shale) provides water supplies to wells serving the Wickham Village, Kings Estates, Wickham Knolls, and Eurich Heights developments. Reported yields from these wells range from less than 10 gpm to 100 gpm with an average of approximately 40 gpm. No community water supplies have been developed, to date, in the bedrock aquifers found in the western or eastern portions of the Town.

Groundwater quality in Warwick is generally good. There are some problems with iron-bearing water in the vicinity of and north of Greenwood Lake. Elsewhere in Warwick, isolated instances of stockpiling road salt or heavy use of fertilizers in vulnerable areas may result in

spots of contamination that may effect some nearby local wells. Potential pollution from the use of fertilizers and chemicals in black dirt farming is somewhat mitigated by the clay and silt layer that protects the bulk of the aquifer area. The exposed sand and gravel edges, however, would still be vulnerable to pollution. The Town's *Regional Groundwater Study: Town of Warwick* did not identify any existing groundwater contamination problems. However, a number of possible sources of groundwater contamination exist within the Town based upon an analysis using an available Environmental Risk Database. No further information is available as to the relative risk of such sites. These sites have all been identified in the *Regional Groundwater Study: Town of Warwick.*

Concern has been expressed regarding the potential for groundwater pollution in the limestone or Halcyon Lake Calc-Dolomite areas of the Town. Underground caverns in this highly soluble bedrock can result in rapid movement and mixing of groundwater. One home's septic effluent may more readily contaminate another's well. Although no County or State tests prove that this is now occurring, care should be taken in these regions. Low density residential development, appropriately designed septic systems, and preservation of woodlands are three steps toward protecting the groundwater. Given the nature of water movement, the issue must be dealt with on a regional level.

In the late 1980's, the Town of Warwick Planning Board instituted a plan under the direction of the Town Engineer to monitor existing municipal and utility wells within the Town in order to develop quantitative data that can be used for projecting water reserves. This *Plan* is being coordinated with a similar project that the State of New York is initiating State-wide through Cornell University. The Board has been in contact with Cornell in order to make the information available to them and in return get their analysis and feed-back as to projections on water resources on a quantitative basis.

In 2002, the Town Board adopted a well law that requires anyone drilling a well to obtain a permit and report information back to the Town on the results of the drilling. This is to foster a database on groundwater resources in the Town. The Town also adopted in 2002 an Aquifer Protection Overlay District to protect the most sensitive areas of groundwater in the Town.

(C) SURFACE WATER

Warwick's streams and lakes are valuable resources for the Town, not just in terms of water supply but for their contributions to the Town's diverse beauty and recreation potential. There are five major lakes including: Glenmere and Wickham Lakes in central Warwick; and Greenwood, Sterling (Blue), and Sterling Forest Lakes in the mountainous eastern section of the Town.

The Town can be divided into two major drainage basins. The majority of Warwick drains north toward the Hudson River via the Wallkill River, which is a tributary to the Rondout Creek. Greenwood Lake and the Sterling Forest area drain southward toward the Passaic River in New Jersey. Appendix A contains a figure that shows the individual drainage basins as well as the lakes, ponds, and 100 year floodplains.

Streams are classified by the DEC for the purpose of governing the quality and purity of surface waters and to assign standards in accordance with the best usage of the stream. Class "AA" or "A" streams are the purest, designated for drinking water. A class "B" stream is used for swimming; a class "C" stream is used for fish propagation and secondary recreation. As an indication of water quality, a classified stream must at least meet the standards of its category. This does not mean, however, that a stream classified as "B" is not in all cases as pure as that classified by "A" or "AA". A "(T)" or "(TS)" designation indicates that it is a trout stream or trout spawning stream respectively. Classified streams are regularly considered for reclassification after public hearing. In some cases, the reclassifications result in a lowering of the stream's class, but most reclassifications are to a higher standard. Classifications of the major streams in Warwick are shown below. Those streams that have been reclassified since the 1987 *Master Plan* was published, are identified by a ↓ for a lower standard and ↑ for a higher standard.

- Wallkill River, Class: "C".
- Pochuck Creek, Class: C"
- Wawayanda Creek
    - → From the NJ State line to the tributary 21 (entering from the Northwest at the northern boundary line of the Village of Warwick), Class "C(T)"
    - → From tributary 21 upstream to a point 500 feet below Long House Creek, Class "B(T)"
    - → From the above point upstream to tributary 26 (entering from the Northwest at "Wisner", Class "A(T)"
    - → Above tributary 26, class: "B(T)"
- Stony Creek, Class: "D" ↓
- Wheeler Creek, Class "D" ↓
- Outlet of Warwick Reservoir, Class: "AA(T)" ↑
- Long House Creek
    - → From mouth to tributary 1 (entering from the south approximately 500' from mouth), Class: "A(T)"
    - → Upstream from tributary 1, Class "B(T)"
    - → Jennings Creek, Class "C"[2]
- Tributaries to Sterling Forest Lake:
    - → inlet, Class "A" ↑
    - → outlet, Class "C"
- Double Kill; Class: "C(T)" ↓
- Mistucky, Class: "AA(T)" ↑
- Trout Brook, Class: "C(T)" ↓

In general, stream water quality in Warwick meets the standards set by DEC. There appear to be no chronic major pollution problems in the Town. Some concern has also been expressed about the fertilizer pollution of the Wallkill River. However, according to DEC, the water is still adequate for producing fish. Recent (1995) water quality studies of the Wallkill River by the Stream Biomonitoring Unit of the DEC's Division of Water,[3] found water quality at two sampling stations in Warwick (of 11 studied in Orange and Ulster counties) with a "slight to

moderate impact". Sampling station one was located four tenths (0.4) of a mile off Oil City Road approximately one-half (½) mile north of the New Jersey border at a distance of 59.8 miles from the stream's mouth. Sampling station two was located in Pine Island at the Pine Island Road bridge approximately one-quarter (¼) mile above the confluence with the Rutgers Creek, 55.4 miles from the stream's mouth. For the stream sampling study, DEC looked at different types of impacts that "exert deleterious effects on a waterbody." including: 1) natural communities having minimal human impacts; 2) agricultural, non-point, row crops, and/or livestock; 3) toxic, industrial, municipal, or urban runoff; 4) conventional municipal wastes: domestic/sewage effluent; 5) complex: municipal/industrial CSO; and 6) siltation. In every instance except one, the "Complex: municipal/industrial, CSO" at sampling station one, the water quality was found to be higher than the average of the eleven stations. This is good news for water quality of the Wallkill River in Warwick. However, some concern should exist with regard to "Complex: municipal/industrial, CSO" impacts, which likely originate in New Jersey since the sampling station was located only one-half mile north of the New Jersey border, and most of the land in the area of this station is now part of the Wallkill River National Wildlife Refuge.

Greenwood Lake, in the eastern portion of the Town, is the largest lake in Orange County and is an important environmental, recreational, and economic resource for Warwick. Located in the upper region of the Passaic River watershed, the lake is an important source of clean water to the Monksville and Wanaque Reservoirs. Boating, fishing, and swimming provide recreational opportunities for residents and tourists and income for the many marinas and restaurants located around the Lake.

In the 1970's it was recognized that Greenwood Lake was undergoing rapid eutrophication, or aging. The natural life cycle of a lake includes slow filling of the water body with silts and organic material, changing the lake from clear clean water to a marsh and eventually to solid land. Human activity, such as construction, discharge of septic and sewage effluent, and agriculture speeds up the natural process. Although it still may take thousands of years, algal scums, aquatic weeds, unpleasant odors, and even fish kills can result, degrading the aesthetic and recreational quality of the Lake. Under the New York State MS4 regulations, the Town will be adopting stormwater runoff regulations for the area surrounding Greenwood Lake.

In 1983, the Greenwood Lake Watershed Management District commissioned a study to address this problem. Their findings indicated that in Greenwood Lake fertilizing nutrients which promote aquatic weed and algae growth are generally a result of non point source pollution such as stormwater runoff from roads and excessive use of lawn fertilizers.

Recommendations from the study include a combination of watershed management policies and in-lake restoration. Implementation of many of these recommendations over the last 10 years has lead to a significant improvement in the water quality of Greenwood Lake. The Town of Warwick can aid their effort by: 1) continuing to ensure proper soil erosion and sediment control measures are introduced as part of the site planning and subdivision review processes; 2) enforcement of site plan controls such as use of retention and catch basins for sediment; 3) proper development not only of the lake shore but of the land adjacent to

Greenwood Lake tributaries; and 4) where feasible, encourage on-site waste water disposal (septic systems) rather than facilities that require discharge of treated water directly into the lake.

Glenmere Lake currently has good water quality although there is naturally some siltation and weed growth in shallow areas. The lake is an extremely important water supply source in that it provides water for the Village of Florida. Glenmere Lake needs dredging to help slow the eutrophication process. This however cannot be done unless a substitute water source, such as the proposed Black Meadow Creek Reservoir, is developed for the project period. The majority of the land around and to the east of the lake is owned by the County and is undeveloped.

Wickham Lake has problems with algae but improvements have been made since the Town took ownership over it. A new sewage treatment plant no longer discharges directly into the lake, and the situation is expected to continue to improve over time. The Mid-Orange Correctional Facility currently uses the lake as its back-up water supply. There is minimal development to the west of the lake and the Warwick Airport is located to the north. With the relocation of the treatment plant, this area may be more attractive for development in the future, as is evidenced by the Ridge Homes of Warwick and Wickham Lake Homes subdivisions.

(D) WETLANDS

Freshwater wetlands are invaluable resources for flood protection, wildlife habitat, open space, and water resources. Wetlands over 12.4 acres (5 hectares) in size, as well as certain smaller but important wetlands, are mapped and protected by the New York State Department of Environmental Conservation (DEC). Any construction activity that might affect these wetlands (excavation, filling, building obstructions, potential pollution sources, etc.) is regulated, whether or not the activities occur in the wetland itself or impinge upon the protected 100 foot adjacent area of the wetland.

The Town of Warwick Conservation Board has refined the DEC map to include all significant wetlands. It should be noted that significant wetlands are located throughout central Warwick, the largest being east of Wickham Lake.

Although the US Army Corps of Engineers has regulated wetlands since the 1960's, it was in 1986 that the Corps of Engineers began to more concertedly apply its jurisdiction over isolated wetlands, under Section 404 of the Clean Water Act. It was in that year that the Corps issued a comprehensive set of regulations on wetlands[4]. Section 404 of the Clean Water Act requires that a permit be obtained for the discharge of dredged or fill material in "waters of the United States." This means that individuals cannot undertake activities involving the filling of a wetland, even on privately owned land, if that land comes within the broad definition of wetlands unless the individual obtains a Corps permit.

Some minor activities, such as the filling of a very small area of a wetland, is covered by a series of Nationwide Permits. A Nationwide Permit is considered a general permit that includes any category of activities where the activities are similar in nature and will have only minimal individual and cumulative environmental impacts. Such Nationwide Permits do not require that a separate application be made to the Corps as long as certain specified general conditions are complied with. Notification to the Corps is required within 30 days following completion of the fill activity. If more than one-third of an acre but less than three acres of wetland is to be filled, an applicant is required to notify the Corps of the contemplated activity and to wait until the Corps responds (or 45 days have elapsed) as to whether an individual permit must be secured. Any fill activities that exceed specific acreage thresholds requires an individual permit from the Corps as well as compensatory mitigation for the wetland loss. Thus, between the DEC, the Army Corps, and the Town Conservation Board, wetland encroachments already require close regulatory scrutiny. However, as a result of a 2002 US Supreme Court ruling, smaller isolated wetlands receive no regulatory oversight at all. Chapter 3 presents recommendations to address this gap in wetland regulations.

(E) ENVIRONMENTAL FEATURES

Although all of Warwick is beautiful, there are several special areas that either have exceptional views or contain unique environmental features. These include:

- Views from Bellvale Mountain,
- Views from Sterling Forest,
- Little Cedar Pond in Sterling Forest,
- Mounts Adam and Eve,
- The Double Kill Creek and
- All Lakes

Protection of exceptional views is difficult because of the broad view shed that is usually included. Recognition of key points may at least lead to an awareness so that when large developments are proposed in a special view shed, the environmental review process includes consideration of the effects on these views.

Views toward the mountain ridgelines are very important, providing Warwick with a spectacular natural setting that is the Town's most critical visual resource. Although it is less likely that large developments will occur on the mountains because of slope constraints, extreme care must be taken so that these high points are not impacted by radio or telecommunications towers or antennas, that might alter the view of the mountains from the valley. Their greater elevation also makes homes, roads, and other improvements highly visible from the valleys and surrounding areas. Warwick enacted a Ridgeline Overlay District in 2002 to create design standards for controlling siting and other aspects of new residential and non-residential construction on ridgelines. This has given the Planning Board much greater control over the visual appearance of new development on the ridgelines. In addition to the Planning Board's authority, the deeds of all new development, that is approved within the Ridgeline Overlay District, must contain notes alerting the owners and all subsequent

purchasers of the property of the design standards that are in place to protect the Town's Ridgelines.

Little Cedar Pond is recognized as ecologically significant because it is a large, pristine inland Atlantic White Cedar swamp. The plant community itself is rare, especially at the inland location. Both the size and condition make it even more valuable. The Nature Conservancy has been trying to purchase the pond and its watershed (about 600 acres) in order to preserve this unusual resource. However, this area is now within the lands that are being acquired by the Palisades Interstate Park Commission for park and open space purposes.

Mount Adam and Mount Eve are unique as both cultural and environmental resources. Standing out as they do from the flat, black dirt area these two peaks provide an important visual focus. They also have yielded a variety of unique and interesting minerals. An area south of Mount Eve is also reportedly a habitat for unusual ferns and mosses. The two mountains (especially Mount Adam) may also have potential sites for archaeological finds.

The Double Kill Creek has in the past been mentioned as a possible candidate for a wild and scenic river in the State of New York. However it is not under active consideration at this time. Its past identification, however, indicates that it is an environmental asset to Warwick.

Warwick's large lakes and ponds also contribute to environmental diversity. The water bodies plus their surrounding environments provide special wildlife habitats as well as adding to Warwick's visual quality.

The Timber Rattlesnake is a New York State Threatened species. This means that such species are likely to become an Endangered species within the foreseeable future within New York State. There are at least nine (9) areas where the DEC's Natural Heritage Program has identified Timber Rattlesnake dens in the Town. The locations of such dens is considered sensitive and is, therefore, not identified on any maps in this *Comprehensive Plan*. The Town also has had reports of the Bog Turtle, Indiana Bat and Northern Cricket Frog. The Bog Turtle is an Endangered species in New York State, the Indian a Bat is a federally Endangered species, while the Northern Cricket Frog is Threatened.

The Appalachian National Scenic Trail is also an important feature in that its designation ensures preservation along the trail. Almost seven miles of this 2,100 mile interstate trail pass through the Town of Warwick. The Trail, which is limited to a footpath, is a unit of the National Park system and has more miles of boundaries, as a ratio of its acreage, than any other park in the nation. When it was added to the National Park system in 1968, Congress established that the trail was *"to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural or cultural qualities of areas through which such trails may pass."* Other trails in the Town include the Allis Trail (± 1.3 miles in Warwick) and Sterling Ridge Trail (± 5 miles in Warwick), both located in the Sterling Forest area.

The Wallkill River National Wildlife Refuge was authorized by Congress in November of 1991. The Refuge is principally located in Vernon, Wantage, and Hardyston in New Jersey,

but a small portion extends into the Town of Warwick. Eventually, the Refuge is expected to protect 4,200 acres of wetlands and 3,300 acres of adjacent upland. Its stated objectives are *"To preserve and enhance lands and waters so that the natural diversity if fish, wildlife, plants, and their habitats will be conserved for present and future generations, to protect and enhance the water quality of aquatic habitats within the Refuge, and to provide opportunities for compatible scientific research, environmental education, and fish and wildlife-oriented recreation."* The Refuge is considered unique in the large number (19) of State Endangered and Threatened species using the area.

(F) CULTURAL RESOURCES

The Town of Warwick is rich in both archaeological and historic resources. It is interesting to note, however, that there is only one site in the unincorporated Town listed on the National Register of Historic Places. That site is the Sterling Mountain Firetower, which was listed in 2006. Mistucky Village, a former Native American settlement south of the Village of Warwick, is included on the State Register. A thorough historic survey of the Town would probably reveal many additional properties potentially eligible for listing on the National and State Registers.

Orange County has been a valuable source for prehistoric remains of the mammal called the Mastodon. These remains have been found primarily in the black dirt areas which were once the bogs and lakes of the Pleistocene Period. Several remains have been found in Warwick near the black dirt of the Wallkill River and Wawayanda Creek. Sites have also been located near the Warwick Airport. Future development in this area should proceed with an awareness of the potential for additional finds.

The Dutchess Quarry cave, just outside the Town and north of Florida, is the earliest occupation site of prehistoric man in the northeastern United States. Artifacts date beyond 10,000 BC. Although there have been no significant finds in Warwick, scattered artifacts have been located, even some in other rock shelters.

Native Americans living in the Warwick region were the Minisinks, a division of the Muncee tribe, who were a part of a larger group called the Delawares or the Lenni-Lenapes. Many archaeological sites have been identified throughout the Town. Mistucky Village is a major find. Appendix A contains a figure that shows broad areas that may include both Indian and other prehistoric and historic remains.

Warwick was settled in the early 18th century. Small hamlets such as New Milford, Bellvale, Edenville, Amity and Pine Island as well as the villages are remnants of this past. New Milford, Bellvale, Edenville, and Amity still have an historic quality that would be beneficial to retain. New Milford is particularly significant in that it has the potential for both prehistoric and historic archaeological remains as well. Because of its potential historic significance, New Milford has been listed as eligible for National and State historic register status. The Village of Warwick has an historic district now on the National Register and the Village of Florida's birthplace of William H. Seward is also listed on the National Register.

In addition to these hamlets, a number of individual structures have historic quality as listed below. Unfortunately, no complete inventory has ever been done for all of Warwick but the New York State Office of Parks, Recreation and Historic Preservation does maintains a database of potential historic properties in the Town, as shown in Appendix B. The properties indicated on the Special Features map represent only the known historic and/or archaeological sites.

Hull House off Four Corners Road	Baird's Mill on Baird's Lane[5] off Sanfordville Rd.
Furnace Site in Sterling Forest	New Milford Mill off Iron Mountain Road
Former Site of a Forge in Bellvale	

2.6 RECREATION AND OPEN SPACE

Warwick is fortunate to have significant designated recreation areas within the Town's boundaries. The Town Park on Union Corners Road, the County Park on Route 17A, and the Appalachian Trail running through Warwick along the mountain ridge west of Greenwood Lake provide opportunities for both current recreation activities and future recreation development. Most of the Town's lakes are currently not developed for public recreation. The beach on Greenwood Lake is the only exception to this. In 1994, the Town entered into a lease agreement with Sterling Forest Corporation (now Sterling Forest LLC) for development of a beach and swimming area on the Lake. The Town expects to renew the lease with the successor owner of the Sterling Forest lands in 2008 and convert it to a passive boat launch and picnic area. The Palisades Interstate Park Commission acquired almost 15,500 acres of land in Warwick and Tuxedo in the 1990's. The Town also acquired a marina in the Village of Greenwood Lake that needed renovations. It opened as the Thomas P. Morahan Waterfront Park and is home to supervised swimming, concerts, fishing and picnic facilities.

The Mt. Peter Ski Area, a private commercial establishment, provides an excellent opportunity for recreation to the Warwick community. It also contributes to open space in the Mountain Residential zoning district.

The presence of the other lakes within the Town provides an excellent opportunity for either outright acquisition or development of access. The Town Park on Union Corners Road is currently only partially developed, and development plans need to be prepared for the Cascade Lake property, acquired by the Town in 1998. The Town acquired Wickham Lake and 13 acres of parkland for access to the Lake. Development is expected by 2010.

New facilities at the 648 acre Hickory Hill County Park were dedicated in 1985. The first step of development included picnic areas, a softball field, nature trails, an 18 hole golf course, and parking facilities. A senior citizens' center was already on the grounds. Future development plans are being formulated at the time of this Comprehensive Plan preparation. The "park-and-ride" lot for commuters which has relieved the car parking congestion near the bus garage in

the Village of Warwick, also provides a parking area for golfers and for the adjacent seniors' center.

The Appalachian Trail passes through Warwick on its way from Georgia to Maine. Over 1800 acres of land along the western ridge of the Ramapo Mountains in Warwick is in Federal ownership. The trail can be accessed from Route 17A, Continental Road, Lakes Road by the Chester border, near Cascade Lake by Taylor Mountain, and Bowen Road by the New Jersey border. A SAFETEA-LU grant will further the development of a hiking and bicycle trail from Greenwood Lake to Amity.

Additional recreation opportunities exist near Glenmere Lake as well with the new Village of Florida Park at Glenmere. The *Orange County Comprehensive Plan* suggests some of the 1075 acres owned by the County "may now be considered as future park land." Glenmere Lake provides such a unique opportunity for recreation development. There are currently plans to develop facilities in this area.

2.7 TRANSPORTATION

(A) EXISTING ROAD SYSTEM

The character of Warwick has been greatly affected by the regional transportation network. For the most part, major roads by-pass the Town. The regional multi-laned highways are located in Tuxedo to the east (I-87), and in Goshen, Chester, and Monroe to the north (NYS Route 17). To the south, Interstates 287 and 80 in New Jersey and NJ State Highway 208 provide primary access to employment centers in both New Jersey and the New York Metropolitan area.

Three two-lane State roads in Warwick provide access to this larger regional road network. Route 94 connects Warwick with New Jersey to the south and passes through the Villages of Warwick and Florida, to Route 17 in Chester. Route 17A provides a major east-west link coming south from Goshen, passing through the Village of Florida, passing through Warwick and Greenwood Lake, joining Route 210 to connect to Route 17 going north and south and finally to the New York State Thruway (I-87). From Greenwood Lake, Route 210 travels south to New Jersey.

The 1981 *Orange County Transportation Plan* has designated a hierarchy of roads in the Town. Minor arterials include all state highways and County Road # 1 and # 1A (Pine Island Turnpike). These roads provide the only major east-west route west of the Village of Warwick. The Orange County Newburgh Transportation Organization has also developed a Long Range Plan that should be reviewed for any benefits to the Town of Warwick.

The Pulaski Highway (CR # 6), Kings Highway (CR # 13), and Dutch Hollow/Lakes Road (CR # 5) and Glenwood Road (CR # 26) are major collectors. Blooms Corners Road, Union Corners Road (CR # 41), County Road # 1B, the Warwick Turnpike (CR # 21), Lake Road, Sterling Forest Road (East Shore Road), and County Road # 84 are considered minor collectors.

(B) ISSUES CONCERNING ROADS

Warwick's roads greatly contribute to its visual appearance and rural character. Narrow, tree-lined, curving roads are attractive, and, by limiting driving speed, they also contribute to a desirable quality of life. However, these road features also limit vehicle capacity and efficient traffic movement. Modifying road design is not only contrary to the traditional ambiance of the community, but would also present unrealistic engineering tasks. Therefore, future residential growth must respond to the constraints of the existing infrastructure, since roads cannot respond to the residential growth significantly.

The new residential housing which has appeared in Warwick recently, where not in large subdivisions, has been single units along roadsides to minimize construction costs. The result has been to create "side friction" with the addition of many separate driveways, as well as negatively impacting the roadside scenic quality. These problems can be eased by concentrating additional residential growth in or near villages and hamlets by using the adopted Intermunicipal Agreements with the villages of Warwick and Florida, transfer of development rights as outlined in the Zoning Law, and through use of private roads. The Town should promote measures to mitigate negative scenic impacts and roadside friction, such as installation of landscape screening elements. The Town should also explore (where feasible) greater use of shared driveways and private roads, provided that legally binding arrangements and designs are established to ensure future conflicts do not develop and to avoid concerns about emergency access.

Kings Highway exemplifies the traffic problems created by significant new development along a major traffic corridor. Just north of the Town, a bypass around the hamlet of Sugar Loaf has facilitated traffic movement locally, but there is no prospect at present for an extension of the bypass farther south.

The Village of Warwick also has traffic problems that make circulation through the Town in this local area difficult. Recent studies have revealed that one intersection, from Colonial Avenue to Kings Highway turning onto Main Street was operating at Level of Service "E"[6] which is generally unacceptable. The State has now installed a traffic light at that intersection and a Village Traffic Committee is considering other measures to accommodate pedestrians. The High Street/South Street and Main Street intersection is also receiving attention from the Committee. Traffic flow from South Street onto Main is currently at a Level-of-Service "D". The intersection of Oakland Avenue and Galloway Road (State Routes 94 and 17A) is near capacity with Levels of Service of "D" on weekdays and "E" on weekends. Traffic signal warrants appear to have been met at this intersection. The County Route # 1A intersection at Route 94 is also operating at Level of Service "E". A traffic light was installed at this

intersection in 2006 and this has contributed to safer travel through the area. The Town of Warwick has established a fund from nearby developers to help contribute to the costs of further improvements at this intersection.

(D) PUBLIC TRANSPORTATION

New Jersey Transit provides bus service to the Town with stops in the Villages of Warwick and Greenwood Lake, Wickham Village, and Bellvale as well as pick-ups and drop-offs along Route 17A and 210. Express service is able to transport people from the Village of Warwick to the Port Authority Bus Terminal in as little as one and one-half hours time. There are 12 express busses each weekday morning to New York City and 13 returning each afternoon during peak commuter hours. Two of these runs serve Wickham Village via Kings Highway. There are 12 local trips in each direction during off-peak hours when senior citizens can travel at less than half fare. The commuter bus service provided by New Jersey Transit is vulnerable to weather related delays but should be supported by provisions of necessary infrastructure such as convenient and low cost park-and-ride lots.

Dial-A-Bus service has been provided by the Town since 1987 for all citizens at a subsidized fare. Seniors, children, and the disabled travel for half that fare. It operated as a demand response service covering all areas of the Town including Pine Island, Florida and Greenwood Lake. The service has expended to include fixed routes in the Village of Warwick and intermunicipal services to Monroe, Chester, Goshen and the Town of Wallkill. In 2003, service to Blooming Grove was added and buses now travel to Harriman and Woodbury Commons. Dial-A-Bus provides connections to New Jersey Transit, Monroe, Goshen and Wallkill Dial-A-Bus, Middletown Transit, Shortline Trolley and Coach USA.

Commuter transportation to New York City and northern New Jersey by rail is not feasible. New Jersey Transit is planning to extend commuter rail service to nearby Sussex County locations. These rail stations will make rail commuting more attractive to Warwick residents driving to these stations or using shuttle bus service which could operate from one or more stations.

Pedestrian and bicycle facilities are generally not provided along arterial roads. The exception is West Street Extension, which unlike other major roads, is not under the jurisdiction of the State or County. In 1996, the Town added an adjacent paved four-foot lane for non-motorist use. The Intermodal Surface Transportation Efficiency Act (ISTEA) and the more recently enacted Transportation Equity Act for the 21st Century (TEA21) encourage bicycling and walking transportation. Since these federal funding sources provide 80 percent of the costs of many road rebuilding projects, it is expected that such facilities will become more prevalent in the near future.

(E) RAILROAD SERVICE

The New York Susquehanna and Western Railway has trackage rights to operate four to five freight trains through Warwick per day. ConRail also operates freight trains on the line and it is expected that the quantity of freight traffic will increase after ConRail's sale to Norfolk-Southern in 1998. With no grade separations in the Town, the daily freight trains often disrupt motor vehicle traffic. However, with the rebuilding of the Sanfordville Road bridge this situation has been ameliorated to some extent.

(F) AIRPORT

Warwick has a small airport for private planes located near Wickham Village. Facilities currently include one paved and two grass runways and hangers. The runways are too short for larger planes. It is primarily used for pleasure flying plus student training (on weekends) but could serve as a helicopter landing area for emergency medical use.

2.8 PUBLIC FACILITIES

(A) UTILITIES

Most of the Town of Warwick does not have centralized water or sewer services. Areas that have developed next to the Villages of Warwick and Florida have traditionally been annexed if the development required such services. The Village of Warwick has recently increased the capacity of its wastewater systems and the Village won court approval in 1997 to annex the Welling Farm on State Route 94 at the southern edge of the Village. The Town currently operates the Warwick Sewer District No. 1 and the Bellvale, Westside, Eurich Heights, Wickham and Pine Island Water districts.

Water availability is considered a growth-limiting factor in all of Orange County. The Orange County Water Authority, under the direction of the Orange County Planning Department, is addressing a number of alternatives to a centralized county water system, which was proposed but never got off the drawing board in the late 1980's.

(B) SCHOOLS

The Town of Warwick is part of four separate school districts. The Warwick Valley Central School District takes in most of central and western Warwick plus some of the Town of Chester. Florida Union Free School District centers around Florida and includes part of Goshen. The Greenwood Lake Union Free School District includes all of the Greenwood Lake area. Most of Sterling Forest is a part of the Tuxedo Union Free School District # 3.

The Warwick Valley Central School District represents the largest school age population of the Town. The 1997-1998 enrollment for kindergarten through high school (K-12) was 3953 students as of October, 1997. The last time enrollment exceeded 3,000 students was the 1972-1973 period when enrollment was 3,017. Future enrollment was projected to rise to 4,000 students by the school year 2002-2003, but projections to 2015 predict declining enrollment figures.

The Florida Union Free School District had a total enrollment (in October of 1997) of 727 students, grades K-12. Although these schools are thought to be near capacity, it is expected that growth should be accommodated by renovating the S.S. Seward Institute (grades 7-12). The school district anticipates an increasing student population growing to as large as 910 students by 2004.

The Greenwood Lake Union Free School District serves about 850 students in grades K-8. Nearly 285 high school students are provided for on a tuition basis in Tuxedo. Projections indicate that student enrollments will increase to 951 for K-8 by 2001-2002 and 339 for high school students by the same year.

In addition to the public educational facilities, there are two private schools in the Town of Warwick. Amity School serves 27 students in grades K-5, St. Stephen's - St. Edward's School, located near the public high school and middle school, provides for 210 students in grades K-8 plus 40 pre-kindergarten children. Truro College has purchased the Kings College site and has proposed moving into the Town of Warwick at the former International Nickel plant on County Route # 84 in Sterling Forest, with the intention of establishing a religious learning institute.

(C) LIBRARY SERVICES

The Town of Warwick shares the public library facilities located in each of the three villages (Warwick, Greenwood Lake, and Florida). These facilities and the book supplies are generally adequate for the community need. The exception is the Albert Wisner Public Library, which has experienced greatly increased demand and has broken ground on a new library complex in the Village on McFarlane Drive (next to Warwick Grove).

(D) MUNICIPAL SERVICES

Municipal services are provided in the Town Hall located on Kings Highway. The Town of Warwick Justice Court and Police Department are also headquartered here. The Village of Warwick contracts with the Town for police coverage, although they have their own Village Justice Court. The Villages of Greenwood Lake and Florida have their own local Police Departments and Village Justice Courts. All of the Police departments are assisted by the Orange County Sheriff's Department and the State Police on an "as needed" basis.

Fire Protection is provided throughout the Town by volunteers and is supported by local property taxes. The Town is divided into four fire districts: Greenwood Lake, Warwick, Pine

Island and the Florida District, which extends into the Town of Goshen. The individual stations have reciprocal mutual aid agreements for help when needed by neighboring organizations. Some portions of Sterling Forest, within the Town, are covered through an agreement with the Town of Tuxedo Fire Department. The entire Town of Warwick is now participating in the Orange County and New York State 911 Emergency System. Although the fire protection services appear to be adequate for the present, future growth may require improvements including:

- Exploring the possibility of new fire stations outside of the Villages, centralized in the Town. Development trends should be monitored to determine when and where to locate;

- Providing for one fire inspector for all new developments within the Town. Arrangements with the three villages should be considered to assure Townwide uniformity and safety;

- Strict enforcement of fire code regulations regarding access to new townhouses or multi-family dwellings. The Town Building Department now uses three part-time inspectors to inspect fire code compliance.

Emergency medical care and Ambulance services are provided Townwide 24 hours a day by highly trained volunteers from four ambulance districts: Greenwood Lake Ambulance, Inc.; Warwick Community Ambulance Service, Inc.; Pine Island Volunteer Ambulance Corps, Inc.; and Florida Fire Department Volunteer Ambulance Corps. Greenwood Lake, Warwick and Pine Island have become separate Tax Districts through approval and contracts with the Town. The Greenwood Lake, Warwick and Florida Corps are New York State Certified, with Pine Island soon to follow. Most members are EMT-D (Emergency Medical Technician-Defibrillator) trained and the ambulances carry heart defibrillators as normal equipment. All districts participate in the State and County 911 Emergency System and offer reciprocal mutual aid to each other and adjacent towns and counties, including northern New Jersey. Private ground Advanced Life Support (Paramedic level training) is immediately available through ambulance services stationed in this area. Rapid-air Advanced Life Support (Paramedic and Nurse level training) ambulance services are available through the State Police helicopter Life Guard unit stationed at Stewart Airport (manned by Mobile Life) and Stat-Flight services out of Westchester Medical Center. Constant training and testing is required for all ambulance corps members and offered through New York State, Orange County, the individual ambulance districts and St. Anthony's Community Hospital.

(E) MID-ORANGE CORRECTIONAL FACILITY

The Mid-Orange Correctional Facility is a state run, medium security prison. The inmate census as of May of 1997 was 747, slightly above its rated capacity. Located near Wickham Lake, its 750 acres includes the prison farms, open space, and part of the lake as well as the correctional facilities.

(F) HEALTH SERVICES

The only hospital in the Town is St. Anthony Community Hospital in the Village of Warwick. It is now operated by the Tri-State (Bon Secour) Health System organization, which also operates a hospital in Port Jervis and one in Suffern.

St. Anthony Hospital was established in 1939 and was expanded in 1979. It now has 73 beds and employs 173 full-time and another 80 part-time staff. There are 79 doctors and dentists on staff. The Hospital recently opened a separate community health center at the ShopRite Plaza on Route 94, which serves about 6,000 outpatients per year.

The Schervier Health Care Facility which has 120 beds for long-term care and a day program, is located near the Hospital. The Mt. Alverno Adult Home, also nearby, offers assisted living for its 79 residents.

2.9 PRIVATELY OPERATED UTILITIES

Sterling Forest, east of Greenwood Lake, has centralized water and sewer services in the Town of Warwick at three locations. These facilities are capable of being expanded to provide for future planned development along County Road 84 in the Sterling Forest area. Truro College has been proposed for the former International Nickel site in the Town and it is possible that some additional commercial development will occur in this area by Sterling Forest or others. Current water service comes from existing reservoirs in Sterling Forest. The only other facility in the Town that had been operated as a private enterprise was the Pine Island Water Company, serving a number of users in the hamlet of Pine Island. This Water Company was taken over by the Town in 1997.

Orange and Rockland Utilities distributes electric power throughout the Town using above-ground lines, except in new subdivisions where the Planning Board has required undergrounding. The utility considers its system adequate for future demand except in the Pine Island area where additional distribution lines may be added at some point due to residential growth in this area. Two other utility companies have transmission lines that pass through the Town. Central Hudson has a major transmission line along Kings Highway to deliver power to an adjacent service area in New Jersey. Consolidated Edison also has a trunk carrier that passes through Sterling Forest. The deregulation of electric utilities now beginning is expected to impact on generation facilities but not distribution systems.

Columbia Gas has a gas transmission line that passes through the Town and a major expansion (from a 10" to 12" line to a 30" line) is expected to be completed by 2009. The new pipeline, known as the "Millennium Pipeline" will deliver natural gas from the Midwest to New York City. An expanded right-of-way may offer the potential for trail development.

There is currently a cellular telephone tower located on Mount Peter, a camouflaged tower has been developed on Route 17A, and cellular antennas were placed on the existing buildings at the IBM facility in the Sterling Forest area. As personal wireless services expand nationwide, it can be expected that Warwick will continue to see an increase in demands for new towers. In 1996, the federal government eliminated most local control over such towers. Warwick's local control over siting and the visual impacts of the towers exist through the special procedures established in the 2002 Zoning Law, which were designed to help protect the scenic beauty of the Town by encourage the use of existing structures for siting cellular antennas or, to use camouflage if new towers were absolutely necessary.

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[1] IBM reduced its Hudson Valley workforce from almost 30,000 in the late 1980's to 9,800 in 1996. The Corporation has closed its Kingston Facility entirely and relocated or discharged the remainder of its employees from the Poughkeepsie and East Fishkill plants. However, in December of 1997, IBM announced plans for a new $700 million manufacturing facility in East Fishkill.

[2] Jennings Creek from the New York-New Jersey border to 100 feet upstream is classified "A(TS)".

[3] Bureau of Monitoring and Assessment, Division of Water. Biological Stream Assessment: Wallkill River, Orange and Ulster Counties, New York", September 15, 1995, New York State Department of Environmental Conservation, Albany, NY.

[4] 51 Fed. Reg. 41,206 (Nov. 13, 1986).

[5] Baird's Lane is one of only four remaining stretches of Town Road which are not paved.

[6] Levels of Service (LOS) are measures that traffic planners and engineers use to assess current and projected traffic flow through intersections. A LOS of "A" indicates free flow conditions while a LOS of "F" indicates a failed condition, meaning that unacceptable delays occur or have been projected to occur.