

COMPREHENSIVE PLAN
TOWN OF
PATTERSON, NEW YORK

Adopted December 13, 2000

TOWN OF PATTERSON

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1.0 COMPREHENSIVE PLAN GOALS

The Comprehensive Plan is a document which discusses present and future growth within the Town of Patterson. It provides a basis for the land use policies and decisions which ultimately determine the type of Town that Patterson will become in the future years. Prior to beginning a discussion of the Comprehensive Plan, the following statement of major land use goals has been formulated which is intended to convey the values and preferences of the entire community of Patterson. These goals will aid in the development of policies throughout the Comprehensive Plan which are intended to guide Patterson towards becoming the type of Town desired by the residents.

The Goals of the Comprehensive Plan are:

- Preserve and enhance the natural beauty and rural quality of the community and protect the small-town atmosphere.
- Protect environmentally sensitive areas and natural resources such as scenic roads and vistas, waterways, floodplains and wetlands.
- Establish environmentally sound land use development policies which respect private property rights and ensure balanced and orderly patterns of future growth.
- Encourage regional cooperation to safeguard Patterson's environmental setting.
- Foster and preserve the community's heritage by protecting historic structures and sites which foster the natural beauty of the Town.
- Provide adequate public utilities and recreation facilities, and minimize the fiscal burden of such services on the existing community.
- Improve traffic conditions, and provide adequate parking and local circulation within secondary highway networks.
- Promote environmentally sound management of the waste stream.
- Promote non-residential growth in areas suitable for such uses.
- Accommodate new growth in a manner which protects the semi-rural character of the Town.
- Provide sufficient variety and quantity of housing to accommodate the present and future needs of various income levels and age groups, including housing suitable for people of low and moderate income.

2.0 BACKGROUND

The Town of Patterson began a program to update the comprehensive plan for the Town in 1987, with the assistance of a planning consultant. The initial work on the project was carried out by the Planning Board. In 1988 the Town Board appointed a Comprehensive (Master) Plan Steering Committee comprising diverse segments of the community which continued the work. In 1991 the Planning Board and the Environmental Law Foundation, as part of the ongoing planning effort conducted a Town-wide survey on general planning issues. On March 8, 1991 the survey was sent to all residential properties/households in the Town of Patterson. The usable number of surveys returned was 674 or a 19.6% rate. After the completion of the survey, the Planning Board incorporated the results of the survey and other recently completed studies into the draft Comprehensive Plan. Since that time the Town has reviewed several revisions to the Plan as part of the on-going effort to develop a Plan that addresses the needs of the diverse segments of the community. As part of the Comprehensive Plan review process the community has reevaluated the policies embodied in the current Town development plan adopted in 1975.

The Comprehensive Plan, represented in graphic form on the Comprehensive Plan Map along with accompanying text, sets forth a development policy for the future of the Town. It is a synthesis of the many basic studies and updated reports available which surveyed and analyzed existing physical and social conditions, identified fundamental trends and developed a series of policies that will address future needs. When adopted by the Town Board and implemented by the Planning Board and Town Board, the Comprehensive Plan will become an important tool to help guide future growth while protecting the community's many resources for at least the next decade.

In recent years the Town of Patterson has been studied from many perspectives by several different organizations and consultants. In March of 1991 the Planning Board in conjunction with the Environmental Law Foundation conducted a community survey on issues of open space, planning and zoning to determine the community's feelings towards issues related to quality of life and land use. The Environmental Law Foundation also completed a Resource Protection Plan for the Town of Patterson in January of 1993. An analysis of the Patterson Hamlet area was completed in 1996, and most recently the Town has developed a geographic information system which has been used to complete many of the analyses for the Comprehensive Plan. Based upon an evaluation of the many available studies and an assessment of the community's goals and values, this Comprehensive Plan has been developed and is comprised of four major elements: the Land Use Plan, the Circulation and Transportation Plan, the Community Facilities Plan, and the Open Space and Recreation Plan.

Collectively, the total planning process provides Patterson with a sound foundation for future growth and development policies in accordance with local, county and regional factors, together with means for implementing these policies. Although the Comprehensive Plan is a blueprint for future development, it should not be considered as a fixed and rigid document establishing unalterable guidelines for Patterson over the next decade. The Comprehensive Plan should be regarded as a tool that will need periodic adjustment to insure that it continues to meet the needs of the community as conditions and circumstances change.

3.0 PATTERSON'S HISTORY

The area which makes up Putnam County was purchased from the Wappinger Indians by two Dutch speculators in 1691 for a "competent sum of money". The deed from the Indians to the Dutch traders conveyed a tract of land which embraced the western part of Putnam County. Six years later the Dutch traders sold the land to Adolph Philipse, the son of an extremely wealthy merchant, and the land became known as the Philipse Patent. After Adolph Philipse purchased the land, he then obtained the proper patent from the British Governor of the Province of New York. This patent included all the land to the Connecticut border. Adolph Philipse then obtained a new deed from the Indians in order to confirm his ownership in this additional land. In 1765 the Wappingers Indians challenged his patent but both the Provincial New York and English courts denied their claims.

Adolph Philipse died childless. His property was inherited, through his nephew, by three of the latter's children - Philip, Susannah, and Mary Philipse. The patent was divided into nine "lots" and each heir received three nearly equal lots of the same type - one "water lot" on the Hudson River, one "long lot" in the center of the patent and one "lot" on the Connecticut border. During the War of Independence both Mary and Susannah's husbands remained loyal to the British Crown and therefore their lands were forfeited to the State of New York. Over the years the land owned by Philip Philipse was sold privately to his tenants.

At the time of the early settlement of the colonies, the geography of the county was but little understood, and erroneous descriptions of property boundaries led to endless controversies, not only between individuals but between colonies as well. The boundary between the Dutch colony of New Amsterdam (New York) and the English colony of Connecticut was in the very earliest times a fruitful source of contention. After the Revolutionary War it fell to the States of New York and Connecticut to settle the boundary dispute. The settlement led to a strip of land in eastern Putnam County one mile, three quarters and twenty rods wide. This strip is a portion of what is known as the "Oblong" or "Equivalent Lands" which was not part of the Philipse Patent.

The Fredricksburg Precinct (or as it was later named, Fredrickstown), of which Patterson was only a portion, was named after Fredrick Philipse,. After the War of Independence, the Town of Franklin, in honor of Benjamin Franklin, was established, it's boundaries corresponding to those of present day Patterson. The Town was initially settled by Scotch families or their descendants. A few of these settlers cam here from Westchester and New York, but the greater number were from Massachusetts and Connecticut. Initially, many small settlements arose at various areas in the Town. One of these settlements was established at Haviland Hollow Road Cowl's Corners (now at the intersection of Haviland Hollow Road and Route 22). Another settlement was formed at what was called the "Four Corners" and later re-named Towners after James Towners who kept a public house there. A third prominent settlement was "the city" or "Patterson Village", located near the present site of Routes 311 and 292. All of these early populated areas were established near a stream or well travelled road. These streams acted as a power source for the mills and equipment used in producing grains, fabrics and yarns.

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In 1808, The name of Franklin was relinquished and the Town of “Paterson”, named after State Legislator Matthew Paterson, was formed.. Until 1812, the area now known as Putnam County was part of Dutchess County. On June 12 of that year, the New York State Legislature separated what was originally known as the "Philipse Patent", and later as the "Southeast Precinct," from Dutchess County; and erected it as Putnam County.

Originally there were only two ponds located in Patterson, Hinckley Pond and Little Pond. Hinckley Pond, named after the Hinckley family, is now called “Ice Pond” and is located in the south-western portion of Town. Little Pond, so named because it was the smallest of the two ponds in Patterson, is located in the south-east corner of Town.

The railroads came to Patterson around the time of the Civil War, and with it came an increase in population. The population of Patterson in 1800 was 1506 and in 1875 had grown to 1523 The Putnam Lake area developed in the 1930,s mainly for summer homes, but during World War II, many of the families that made their winter residence in New York City become full time inhabitants of Patterson.

Up until 1930, the major economic activity within Putnam County was agriculture. The principal products produced during this period were meat and milk. As the demand for milk by New York City residents increased, the Putnam County farmers, who in the early 1800's had raised cattle for market, also became milk producers. Additionally, the availability of water power along the many streams in this hilly County gave rise to a milling industry. However, the acquisition of more than 8,000 acres of choice farmland from 1866 to 1910 by New York City for the Croton Water Supply System led to the decline of agriculture and the shift of population from the farm to the village. By the early Twentieth Century, the major sources of economic activity of earlier years had either ceased or were seriously curtailed. Thus, Putnam County changed from a county of farms and some manufacturing to one of country estates, suburban homes, seasonal dwellings and residential developments.

4.0 POPULATION, HOUSING AND ECONOMY

An important consideration in developing policies that determine future growth patterns are the past and present social, physical and socioeconomic components that make up the community of Patterson. An understanding of these components is essential towards forecasting future trends in order to determine appropriate land use policies.

4.1 **Regional, County and Local Development Trends**

According to studies conducted by the Regional Plan Association, some of the fastest growing counties in the region have been and will continue to be Orange, Putnam, and Dutchess Counties. Although Westchester County has experienced a modest amount of residential development in recent years, it has exhibited an unprecedented high rate of office and non-residential construction. This, in turn, has been responsible in part for the housing demand in counties to the north and northeast of Westchester such as Putnam and Dutchess Counties in New York and Fairfield County in Connecticut (Emanuel 1988).

Within Putnam County, commercial building permits rose steadily from 1980-1991. However Putnam County, beginning in 1992 experienced a sharp decline in commercial building permits. In fact Patterson issued no commercial building permits for the years 1993 and 1994, though overall much of the non-residential development in Putnam County has occurred in the eastern Towns of Patterson and Southeast. In Patterson the majority of non-residential activity has occurred along the Route 22 corridor and along Fair Street.

Residential building permits in Patterson were moderate in the early 1980's, but later saw a dramatic increase in the years 1986-88. Since 1988 the number of residential building permits issued has decreased to slightly above the pre-1986 period. Table "I" presents a summary of Building Permit activity for the period of 1980-1999.

Several factors can be attributed to the decrease in the number of commercial and residential building permits in the early to mid 1990's. Foremost is the economic downturn experienced in the late 1980's and early 1990's. The uncertainty of the watershed regulations being promulgated by New York City in the early 1990's also contributed to the reluctance of the development community to begin new projects. In addition, the heightened awareness of the potential impacts to the environment associated with development has added to the length of time it takes for a development project to navigate the regulatory process and obtain the necessary permits to actually begin construction. This heightened awareness of the impacts of development to the environment has also led to an overall increase in the costs for a project in order to reduce or eliminating impacts associated with the development.

TABLE I
Putnam Building Permits
1980-1992

Year	Patterson	Southeast	Kent	Carmel	Putnam County
1980	13	22	25	29	199
1981	26	38	18	34	222
1982	13	36	31	43	185
1983	18	62	39	88	299
1984	91	134	67	239	655
1985	52	286	128	357	927
1986	135	315	115	254	944
1987	117	209	76	163	670
1988	109	45	31	107	371
1989	44	38	29	61	220
1990	50	54	315 ²	60	507
1991	27	51	18	102	228
1992 ²	35	40	8	104	207
1993	34				
1994	44				
1995	19				
1996	41				
1997	32 ³				
1998	50				
1999	52				

Source: U.S. Bureau of Census
Putnam County Division of Planning

¹This figure reflects 298 permits issued for 1 project with a multi-year construction timetable

²Thru Oct. 1992 except Patterson

³This figure includes 9 building permits issued for Town Houses.

4.2 Population Trends, Characteristics and Projections

In recent years there has been a population shift from the City of New York to the outlying regions. Putnam County and the Town of Patterson have been, and will continue to be, viewed as extremely desirable for relocation from more densely developed areas such as lower Westchester and New York City. Proximity to New York City, existing rail and road transportation systems and the relocation of corporations into neighboring counties all have played a role in this shift.

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From 1970 to 1980, Putnam County's population grew 36.2% to 77,193. However, in these same ten years, the Town of Patterson population grew by an astonishing 75.7%, from 4,124 to 7,247 people. Between the years 1980 and 1990 Putnam County's population growth had slowed to 8.7% increase. In the same period Patterson continued to experience above-average growth as the population increased by 19.8% to 8,679. Only the Town of Southeast experienced a higher rate of population growth (30.8%) between 1980 and 1990. All other towns in Putnam County experienced residential growth of under 6%.

According to the 1990 census, of the approximately 8,769 people living in Patterson in 1990, approximately one-third have lived here for less than five years. It can be assumed that this proportion has not decreased in the intervening years as the population has continued to grow mostly through immigration. According to both the 1980 Census and the 1990 Census, the majority of Patterson residents were born in New York State. This would indicate that the newcomers most likely come from relatively nearby in the greater New York City region.

Patterson is a community of families. According to the 1990 census of the 2,804 households in Patterson, 2,250 were family-type households. Eighty-eight percent of the family-type households were married couples. However 54% of the family-type households had no related children. 23% of the family-type households contained children over the age of 18.

Between 1980 and 1990 there was a decrease by 10% in the number of children who's age falls between 5-17. In the same period there was an increase of 40% in the children ages 0-4. Persons living in Patterson between the ages of 25 and 44 increased 39% while persons 45 to 54 increased 61.9%. Persons between the ages of 55 to 74 living in Patterson decreased by some 12%. While this age group has experienced a decrease in Patterson, it has experienced an overall increase in Putnam County.

The Putnam County Division of Planning and Development has previously estimated future County and Town population growth. These estimates, made prior to the 1990 census, have shown to be a reasonably accurate indication of future population trends. Their estimates project a 48% rise in County population from 77,193 in 1980 to 114,041 in 2000, and a 49% rise in the Town of Patterson's population from 7,247 in 1980 to 10,788 in 2000.

Short term population forecasts can also be made by analyzing past population trends and building permits issued since the last census, and projecting the growth rate into future years. It would be more appropriate to use Certificate of Occupancies issued, however due to present record keeping practices it was not possible to separate Certificate of Occupancies issued for new residential construction from those issued for other types of construction (additions, pools, etc.). Due to present market conditions new housing construction is generally built on an as needed basis, however in an attempt to produce an accurate estimate, a vacancy rate has been factored in to the projected estimates. The vacancy rate was determined using figures for the 1990 census for owner occupied homes and those homes vacant for sales only. The 1990 Census provided the number of persons per new home as "three (3) persons per owner occupied units".

From these three factors the increase in population was calculated, as presented in Table No. II. In addition a yearly growth rate was computed. This growth rate was then compared with the growth rate for 1980-90

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to find a growth rate of 1.3% in order to project future population estimates. One factor not included in the projections that may significantly effect the estimate number of persons is the number of accessory apartments that exist within Patterson. Because many of these apartments have been constructed without the proper permits, the exact number of the apartments is unknown. A second factor not accounted for in

<u>Table II</u> <u>Population Projections & Estimates</u>							
Year	Building Permits	Vacancy Rate	Pers. per Unit	Total no. Persons	Patterson Population	Patterson Rate	Growth
1990	36	2%	3	106	8,679*	.012	
1991	31	2%	3	91	8,785	.01	
1992	35	2%	3	103	8,876	.012	
1993	34	2%	3	100	8,979	.01	
1994	44	2%	3	129	9,079	.014	
1995	19	2%	3	56	9,208	.006	
1996	41	2%	3	123	9,331	.013	
* 1990 census							
Year	Patterson Population		Year	Patterson Population			
1997	9,452		2003	10,213			
1998	9,575		2004	10,345			
1999	9,699		2005	10,479			
2000	9,825		2006	10,615			
2001	9,953		2007	10,753			
2002	10,082						

the projections are the number of persons at the institutional uses such as Watchtower and Green Chimneys, which may increase the number of persons in Patterson by as many as an additional 1,400 persons.

Patterson's percent of the total county population has remained relatively stable since 1950 and has averaged (1950-1980) 8.95%. According to the 1990 census, Patterson comprised 10.3% of the Putnam County population.

In considering the past and present population characteristics, certain trends can be predicted. The majority of Putnam County's new non-residential growth will continue to be along the Rt. 22 corridor and Interstate 84 and 684. Patterson will continue to be attractive for residential development and will continue to be comprised predominantly of family-type households. Patterson's population will continue to grow through in-migration, however Patterson's population in relation to all of Putnam County will steadily increase.

4.3 Economic Characteristics and Employment

The 1980 Census reported that the median income in Patterson was \$21,352 for households and \$23,357 for families; per capita income was \$7,472. By 1990 the household median income for Patterson had risen to \$48,494 and family income had risen to \$53,471. The per capita income for Patterson had risen to \$17,543. Patterson's median income for both families and households while being above the New York State average was slightly below the Putnam County average. Of all families living in Patterson, 6.3% had an income that was below the poverty level as defined by the Federal government. This is a slight increase over the 1980 level of 4.6%.

Of the 4,145 workers in Patterson who reported the location of their place of work in the 1990 Census, 1,309 (32%) worked in Putnam County, 2,147 (52%) worked in other New York locations, such as White Plains or Manhattan, and 689 (17%) people worked out of state, presumably in nearby Danbury, Connecticut, or other Fairfield locations. This is similar to the destinations of workers throughout Putnam County. Of those workers who reported a location, 30.0% work within Putnam County, 63.0% work in other New York areas, and 7.0% work outside of New York. The average commute was 33.0 minutes for Patterson workers. The predominate means of transportation to work by Patterson residents was driving a car, truck or van alone (3,251) followed by car-pooling (529). Those using public transportation amounted to 174 people.

To summarize, the majority of Patterson residents that are employed, work outside of Putnam County with a average travel time of 33 minutes and travel to work by car.

TABLE III

Population Density
(Persons per sq. mi.)

	Area (Sq. Mi.)	Population Density (Persons Per Square Mile)		
		1970 (Persons)	1980 (Per Square)	1990 (Mile)
Putnam County	231.0	245	334	410
Carmel	35.7	606	783	951
Kent	41.4	196	300	354
Patterson	31.8	130	228	286
Philipstown	45.3	170	210	233
Putnam Valley	43.6	119	206	251
Southeast	33.2	298	344	471

Source: Putnam County Department of Planning and Development. Brewster School Demographic Study. By comparison, Nassau County is the most densely populated county in the greater metropolitan area (outside NYC) with a density of 4,605 residents per square mile. Westchester has 1,979 residents per square mile.

4.4 Housing Characteristics and Needs

Over the years housing growth in the Town of Patterson has occurred in a number of different ways. Many summer residences have been converted to year-round use. This trend is slowing, and will not be a major source of future increases in available year-round housing units. Development of new residential units, however, will continue to increase. The most recent detailed information on the value of the housing stock within Patterson can be found in the 1990 Census. It shows that the distribution of the value of the Town's housing was very similar to that of the County. The median value of owner-occupied units for Patterson was \$169,200 while for Putnam County the median was \$195,000. One-third of the owner occupied units in Patterson were valued at under \$150,000.

The number of detached units were 2,520 (79%) and the number of attached units was 570 (18%). Patterson presently contains 10% of all the attached units in the Putnam County.

Of all the housing units in Patterson 74% were owner occupied and 15% were rented. The vacancy rates in the Town were relatively low in 1990. For owner-occupied units, the rate was only 2%; for rental units only 0.9% were vacant. It should be noted, there may be additional rental units in use and occupied, however this would be difficult to determine without a special, updated housing survey. The Town has recently adopted a law regulating accessory apartments, which through its implementation and enforcement will help to accurately assess present housing characteristics and determine future housing needs.

The value of housing in Patterson and all Putnam County rose quickly throughout the 1980's; however affordability remains a major issue in the housing markets. This is not a matter of subsidized housing intended for poverty-stricken families, but rather houses which can be purchased by young families with one or even two incomes.

There were 416 houses sold between the years 1990 and 1994 in Patterson, including both newly built units and re-sales of existing units. Of these, 42.5% sold for between \$100,000 and \$140,000. The approximate average price of the homes sold was \$159,885. In 1985 the average price of homes sold was \$120,000. This is in contrast to the 1983 average of \$88,230. These prices are generally less than those found in neighboring Westchester County. However, as much of the market for Patterson homes are those young families who cannot afford to purchase in Westchester, the continuing rise in housing costs in the Town, and the County as a whole, could pose a problem for the continued expansion of residential development.

The expected number of housing units needed for the Town of Patterson for the year 2006 can be calculated based upon the projected population increase and the average number of persons per dwelling unit (2.92). As can be seen in Table IV below, there is an expected increase in the 1990 population of 1,715 by the year 2006, which would necessitate an additional 587 dwelling units.

Between 1990 and 1999, a total of 585 dwelling units were either constructed, under construction or proposed. If all the units that are proposed are constructed, the Town will still need to develop only an additional 2 units within the next six years to meet its anticipated housing demand. This assessment only considers subdivisions and does not include the potential for new homes from individual vacant residential lots already in existence.

<Town of Patterson>

As part of the review of the Town’s present development policies, an analysis was conducted of the potential for the development of new residential homes under the existing zoning. If the usable vacant land in the Town's residential districts were to be developed to the maximum extent allowed by the existing zoning regulations, a total of 2,252 new units could be built in the R-80 District, and 4,734 new units could be built in the R-40 District (see also, Vacant Land Calculations, Table VIII). Therefore, 6,986 new units could potentially be built. This analysis included the limitations placed on development by regulated wetland areas, however did not include limitations placed on development by steep slopes or soils, as these constraints must be examined on a parcel by parcel basis. In addition to the undeveloped parcels in the “R-40” and “R-80” districts, undeveloped parcels located in the RPL-5 zoning district were also examined. Determining the amount of undeveloped land available for new housing in the “RPL-5” zoning district required special consideration as there is no present minimum lot area requirement, rather the requirement is only that a property owner have five lots that have continuous frontage on a street shown on the Map of Putnam Lake. There are currently 672 vacant parcels in the “RPL-5” zoning district, however only 203 lots equal or exceed 10,000 square feet and only 55 parcels exist under single ownership and would meet the current Putnam County Health Department requirement for minimum separation distances which dictate a minimum lot area of 20,000 square feet.

These estimates which provide an indication of the future potential for additional residential development can be interpreted in one of two ways. First, that the Town of Patterson has ample room for virtually unrestricted growth into the 21st Century, or, second, that the Town of Patterson's current zoning may result in over-development of the area, which may necessitate modifications in the zoning requirements to curb such growth.

Table IV:
Patterson Housing Needs by the Year 2006

Population		Change in Population	New Units Needed by 2006	Units Proposed or Constructed 1990 -1999 ¹⁾	Net Units
1990	2006				
8,679	10,394	+1,715	587	585	- 2

Source: Putnam County Division of Planning and Development, and Patterson Planning Department, 2000.

¹ see Appendix E

In terms of regional housing needs, the Putnam County Division of Planning and Development has indicated that there have been no housing needs surveys or affordable housing studies conducted in recent years that would provide a clear indication of the regional housing need, and in particular the Town of Patterson's share of that need. Preliminary housing counts from the 1990 Census show that total housing units for the County were at 31,908, or only a 9 percent increase during the 1980's. The 1970's, in contrast, was a period of significant growth, whereby the number of housing starts increased by 36 percent for the

decade. The County currently has no plans to study the regional housing needs due to the very slow housing market, which has resulted in a lowering of housing costs.

Putnam County does not have an affordability index for housing costs as do other, more urban counties. For the purposes of determining housing needs, affordable housing as used in the Master Plan, shall mean housing which is affordable to those households with incomes at or below the county median (\$53,634). There are three groups of people requiring affordable housing in our community, those making between 75 to 100% of the county median income, those making 50 to 75% and those making less than 50% of the county median income. The National Association of Realtors has issued guidelines concerning the purchase of a house. These guidelines state that a household should not purchase a house which costs more than two and one-half times their gross income or rent a home where the monthly rent exceeds 30% of gross income.

5.0 VEHICULAR CIRCULATION PLAN

5.1 Vehicular Transportation System

The element of vehicular circulation has had the greatest impact on the successful development of exurban areas such as Patterson. Accessibility to the major highway transportation system and mass transit systems is a factor which impacts the living conditions of the residents of the Town. Development should be located and at a density which takes advantage of the existing network of roads, and those roads with the capacity for more traffic as well as mass transit systems. This can help reduce the possibility of traffic jams, as well as the need to expand existing roads, or to build new major roads.

5.11 Highway Capacity

Highways are not infinite in their ability to handle traffic volumes. The number of vehicles that can be accommodated by any given Highway is dependent on several factors. Among these are; lane width, terrain, and lateral clearance.

The type of vehicle using the road system can impact the system's capacity and flow as well. Whenever vehicles other than passenger cars exist in the traffic stream, there is an effect on the number of vehicles that can be served. In reviewing a highway's capacity, a determination should be made as to the type of vehicle and the number or percentage of a particular type of vehicle. The conversion of each class of heavy vehicle to an equivalent number of passenger cars allows the analysis to be made on a more consistent basis. Table V gives conversion rates for some of the more common types of vehicles.

Vehicle Type	Condition	Equivalent Passenger Cars
Truck (3 or more axles)	Level Terrain	1.5 to 2.0
Truck (3 or more axles)	Rolling Terrain	4.0
RV	Level Terrain	1.5
Bus	Level Terrain	1.5
Motorcycle	All	0.5
Bicycle	All	0.2

Source: Institute of Transportation Engineers

Of particular importance when considering future land use is the number of "trips" generated for a particular land use. Table VI provides typical trip generation rates estimates for the number of vehicle trips which can be expected from different land uses.

Traffic volume or flows are subject to daily and seasonal changes. These variations are critical determinants of the level of service at which a highway operates. They also control many of the planning and design decisions that are made towards addressing existing and future traffic demand. Two methods that are customarily used to assess the level of service provided by a highway are “average daily traffic” (ADT) and “peak hour” flows. Generally an operational analysis of a highway focuses on the peak hour because it represents the most critical period for traffic operations. When traffic volumes are counted over long periods of time the “annual average daily traffic volume” (AADT) can be determined or estimated. The AADT is the total annual traffic volume divided by the number of days in the year.

The concept of levels of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level-of-service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service can be defined.

Level-of-Service A: Free flow with individual users virtually unaffected by the presence of others in the traffic stream.

Level-of-Service B: Stable flow with a high degree of freedom to select speed and operating conditions but with some influence from other users.

Level-of-Service C: Restricted flow which remains stable but with significant interactions with others in the traffic stream. The general level of comfort and convenience declines noticeable at this level.

Level-of Service D: High-density flow in which speed and freedom to maneuver are severely restricted and comfort and convenience have declined even though flow remains stable.

Level-of-Service E: Unstable flow at or near the capacity level with poor levels of comfort and convenience.

Level-of-Service F: Forced flow in which the amount of traffic approaching a point exceeds the amount that can be served, characterized by stop-and-go waves, poor travel times, low comfort and convenience, and increased accident exposure.

5.12 Existing Road System

The Town of Patterson is served by an inter-connecting system of Federal Interstate Highways, New York State Highways, Putnam County Highways and local Town and private roads. The Federal, State, and County Highways are depicted on Maps A and B, respectively. Table VII lists data for the New York State Highways and their mileage within Putnam County. In addition, the County Highways cover a total distance of 17.27 miles in the Town of Patterson with the Town roads covering a total distance of 64.57 miles. Appendix F list County roads and their annual average daily traffic.

The major proposal of the Vehicular Circulation Plan is the development of a classification scheme whereby all of the roads in Patterson are categorized according to their principal function and levels of service. Design standards could then be developed based on a road's anticipated maximum future level of service and principal function. The recommended circulation system provides for five basic levels of service as defined by traffic volumes and functions within the community and region. The classification system recognize the relationship of different types of roads to the land uses they serve. For example, commercial

TABLE VI
TRIP GENERATION RATES
BY MAJOR LAND USE CATEGORIES¹

Average Weekday Trip
Generation Rates

Land Use Type	
Residential (per Dwelling Unit)	Office Building (per 1000 sq.ft.)
Single family detached 10.0	General office, 10,000 ft. ² 24.39
Condominium/townhouse 5.86	General office, 50,000 ft. ² 16.31
Low rise apartment 6.60	Medical office building 34.17
	Office park 11.4
Retail	Industrial
Shopping center 10,000 ft. ² 166.35	Light Industrial 6.97
Shopping center 10,000 ft. ² 94.71	Heavy industrial 1.5
Shopping center 10,000 ft. ² 74.31	Manufacturing 3.85
	Warehouse 4.88

¹Source: Institute of Traffic Engineers

Table VII

STATE ROUTES IN THE TOWN OF PATTERSON

Route Number	Miles in County	Number or Lanes	Pavement Width	Annual Average Daily Traffic
22	14.88	2 & var.	24-55	4,100-19,400
184	13.01	4 & 6	48 & var.	30,000-47,100
164	2.89	2	22	1,200
292	1.60	2	18	2,000
311	6.14	2	22-24	4,300-6,600

Source: NYSDOT Highway Sufficiency Ratings 1987

and office, and industrial development, which generally have higher rates of trip generations, have been planned to be served by limited access highways or major roads. Should this type of development be proposed for streets other than those indicated, the design should be based upon detailed traffic analysis.

5.13 Proposed Classification System

a. Limited Access Roads: Interstate 84

This is the super highway which is completely separated from local traffic, and has few exits which are widely spaced. The interstate highways make up the broad regional and national network of expressways, providing access to other regions with the least amount of travel time. Interstate 84 connects Patterson with central New England and Boston to the east, and with the rest of the Hudson Valley and the Midwest to the west. I-84 connects with I-684 in Brewster; I-684 in turn provides access to the business centers in Westchester County and New York City.

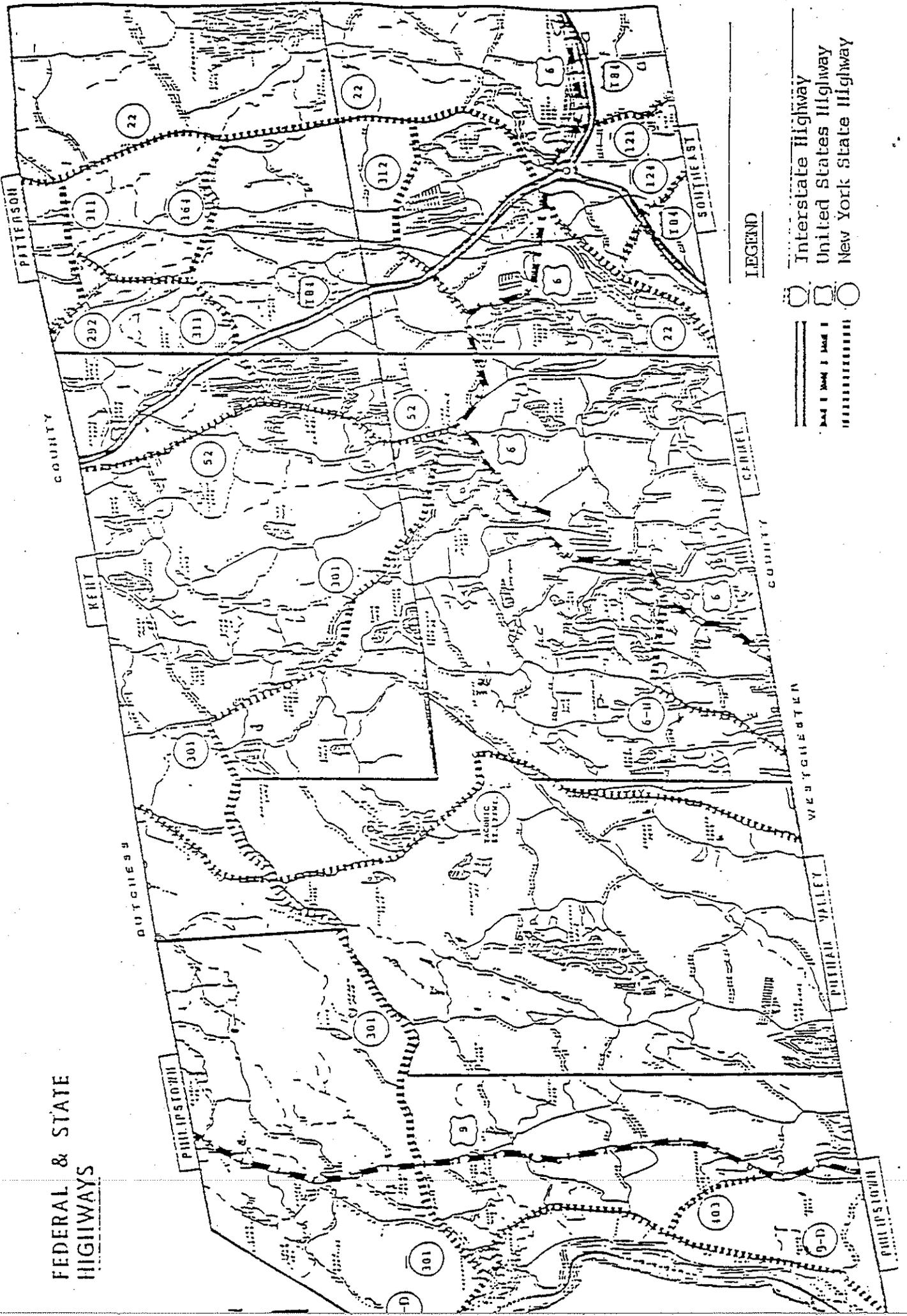
b. Major Roads: New York State Route 311
New York State Route 22
New York State Route 292

These roads provide access to the immediate region around the Town, while also serving localized needs. They bring people to the Town, and they act as important cross-town arteries. Typical "Average Daily Traffic" (ADT) for major roads is in excess of 3,500. Route 311 has access to I-84 in the western area of the Town and connects with Route 22 in the northeast corner of the Town. Route 22, which parallels the state border, has long been the major thoroughfare for the eastern-most areas of southeastern New York.

PUTNAM COUNTY, N.Y.

MAP A

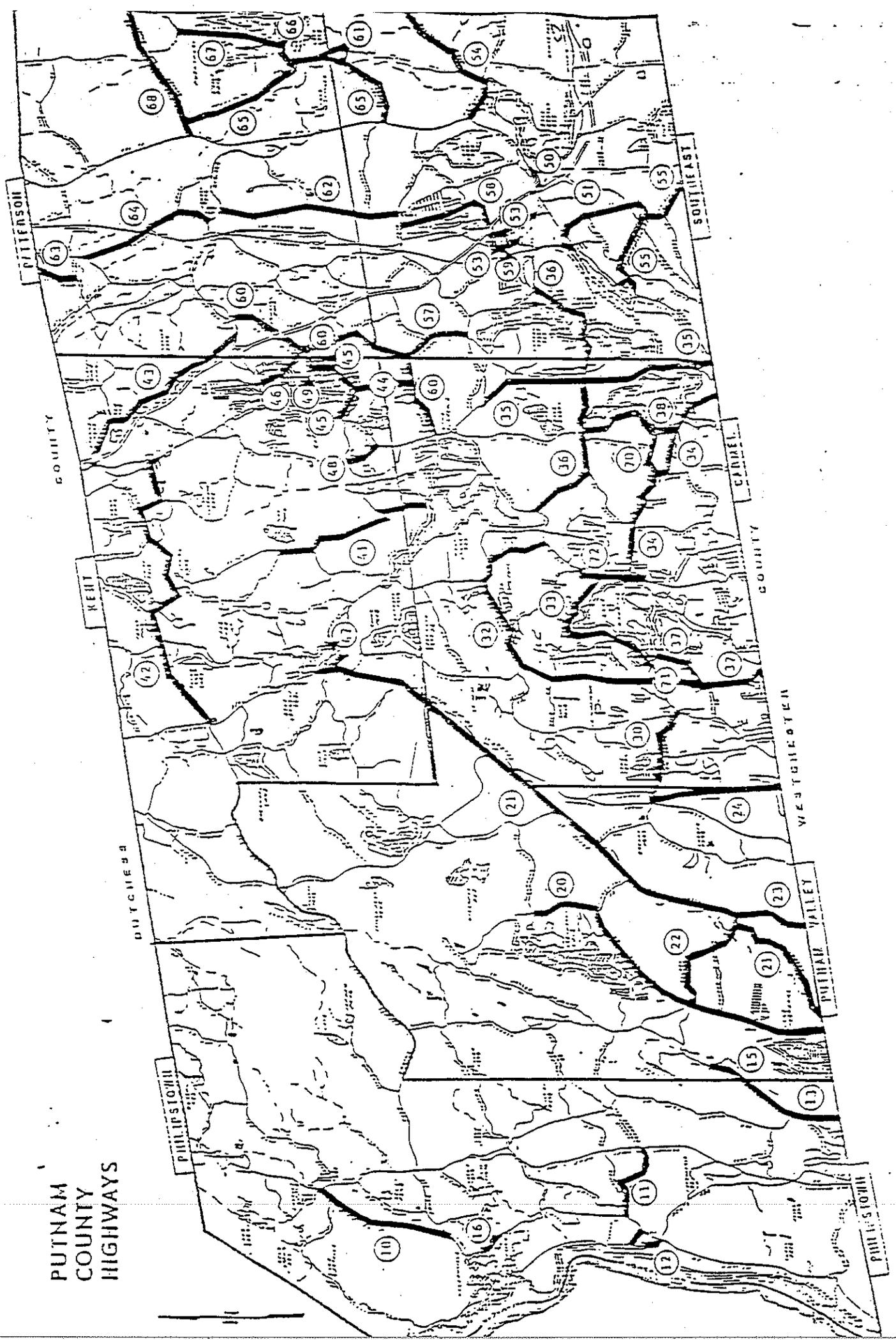
FEDERAL & STATE HIGHWAYS



PUTNAM COUNTY, N.Y.

MAP B

PUTNAM
COUNTY
HIGHWAYS



<Town of Patterson>

As development has occurred in Southeast and Patterson, Route 22 has increased in importance as a commuter route, but still serves an important role for local commercial and recreational traffic. Truck movements in the Route 22 corridor have been observed to approach approximately 22 percent of the total traffic during mid-day periods. Route 22 is the major north-south truck route through Putnam County, since trucks are prohibited on the Taconic State Parkway, the only other major north-south facility in this part of the State. Due to steep grades on this two lane highway, traffic is subject to delay resulting from the differences in operating characteristics of trucks and passenger cars. Route 22 is currently being studied by the New York State Department of Transportation to assess its ability to handle additional traffic, and the future need for improvements. Route 292 connects with Route 311 in the northern part of the Town and extends into Pawling in Dutchess County.

- c. Secondary Roads: New York State Route 164
 Fair Street
 Bullet Hole Road
 Farm to Market Road
 Cornwall Hill Road
 East Branch Road
 Haviland Hollow Road
 Haviland Drive

These roads have the primary purpose of intercepting traffic from intersecting streets and carrying this movement to the nearest major road. A secondary function is service to abutting land use. ADT's are typically in the range of 1,500 to 3,500 in residential areas.

- d. Local Roads

These roads serve the needs of neighborhoods and subdivisions. They are typically smaller than secondary roads, with lower speed limits and frequent points of entry. Typical residential average daily traffic (ADT) ranges from 100 to 1,500, with AM peak hour traffic about 7 to 8 percent and PM peak hour traffic about 10 percent of ADT. They include all the roads in Patterson not listed above.

- e. Cul-de-sacs

Cul-de-sacs are streets with a single means of entry (ingress) and exit (egress). Cul-de-sacs are an important tool in infrastructure planning - with both positive and negative aspects to their use. Cul-de-sacs are valued in residential developments because their design promotes a sense of neighborhood identity, where their low traffic volumes allow for safer, quieter living conditions. But there are other factors which must be considered that limit the use of cul-de-sacs.

1. Safety - One point of ingress and egress may pose a safety or health problem should access to the cul-de-sac street be blocked. This could result in delays for

emergency vehicles responding to a crisis. Blockages can occur from vehicular accident, utility break, falling tree or pole, and pavement repairs.

2. Maintenance - Snow and ice removal is generally easier to accomplish on one through street, as opposed to two cul-de-sacs. It is also difficult to pave the turn around area of a cul-de-sac.

3. Transportation circulation - Concerns related to transportation circulation include school bus pick-up. Generally school buses will not enter onto dead end streets. Circulation of other service vehicles (recycling/garbage, UPS, oil delivers) is also better on through streets. Also of concern is the possibility a motorist (such as a tractor trailer) may be drawn in by mistake if the street is not properly signed.

4. Cul-de-sacs - if overly used can restrict the orderly development of the community. The continual use of cul-de-sacs will ultimately create parcels of land which are land-locked or have no point of access.

While many people believe that transforming a cul de sac into a through street increases traffic, in many instances the long term effect is a negligible increase or no increase in traffic. This is due to the residents living at the end of the cul de sac using the new road as their point of ingress and egress. While there may be an increase in traffic from motorist using the new through street as a “short cut” the amount of increase will vary depending on the location of the new road as well as the destination of the motorists.

The Institute of Traffic Engineers recommends cul-de-sacs be designed for a maximum average daily traffic (ADT) of 200 vehicle trips. For a typical single-family subdivision, each home has been found to generate an average of about 10 trips per day. Two hundred vehicle trips is equivalent to the number of trips generated from 20 single-family residential homes. This limitation on the number of vehicle trips would suggest that where zoning requires 100 feet of lot frontage, with development occurring on both sides of the street, the maximum length of a cul-de-sac would be limited to 1000 feet.

Cul-de-sacs may also be used for commercial development, however due to the more intense use related to commercial traffic, cul-de-sacs used for commercial development should be designed for the heavier traffic usage they will experience.

5.14 Recommended Improvements to Circulation System

a. Route 22

In spite of the increasing amount of traffic in the Patterson area, there is sufficient road capacity for additional development. However, the State Highway that is beginning to experience the greatest difficulty is Route 22, particularly in the Town of Southeast. Accordingly, in 1988 the State Department of Transportation commissioned a special Route 22 Corridor Study for the

twelve-mile segment between the junction of I-84/I-684 to the south (Brewster) and Route 55 to the north (Pawling). This segment is a two-lane highway which serves as the major north-south regional route for the communities of eastern Putnam and Dutchess Counties and western Connecticut. A preliminary report prepared by the consultants URS Company, Inc., was released in October, 1988.

The study analyzed seven alternative actions and resultant levels of services that would result. The alternative levels of action are summarized below; a detailed discussion of the alternatives is beyond the scope of the report, however the Town should consult the URS report for more details.

The alternative improvements were defined and evaluated on a preliminary basis for the Route 22 corridor range from intersection improvements to a limited access highway. Based on projected growth in the study area, an interstate-type facility will not be required in the time period included in this study.

The alternatives that were studied include:

Alternative A:

No action is the base for comparison of the action alternatives.

Alternative B:

Intersection improvements assessed the ability of intersection improvements to relieve existing problems and accommodate near-term growth.

Alternative C:

Intersection and profile improvements also addressed reduction of grades and improvement of sharp curves.

Alternative D:

Three lanes provides a center lane for turns, or a truck climbing lane, and improves grades and curves.

Alternative E:

Divided highway generally has four lanes with no median crossings, and allows room for expansion to six lanes. Intersections would be signalized, with jughandles for crossing movements.

Alternative F:

Divided highway is similar to alternative E, but planned so that grade separations and ramps can readily be added later.

Alternative G:

Divided highway with interchanges provides interchanges for key intersections, thereby eliminating at-grade intersections.

Of interest to the Town of Patterson is the discussion in the URS report of a possible access feeder road system to serve commercial and industrial development along Route 22. This would be modeled after a system planned in both the Town of Pawling and the Town of Southeast. The system of proposed access roads is illustrated on Maps C, D, and E in this Report.

In the Town of Pawling a feeder road or service road is treated as a local street auxiliary to and located on the side of a major artery to serve abutting property and adjacent areas. Feeder roads are utilized along both sides of Route 22, south of the Village of Pawling and west of the Village as delineated on the circulation plan map. Feeder roads are intended to provide safer, more efficient access to commercial, industrial and residential developments located along the arterial roads by segregating local traffic and frequent turning movements from higher speed through traffic. Feeder roads intercept driveways of land uses adjacent to highways and eliminate an excess of turning movements on major roadway or arterial. In the URS report the area shown for the feeder road running between Patterson and the Town of Pawling is along the west side of Route 22. This area is comprised of an extensive wetland system. Steep slopes and bedrock exist along much of the east side of Route 22. These two constraints would eliminate the concept of a feeder road in the Town of Patterson.

The purpose of the URS report and preliminary conceptual plans that were developed was so that required right-of-way can be established and taken into account for local planning purposes even though completion of the corridor-long project will probably not be completed for some time. Adequate setbacks should be implemented along Route 22 which take into consideration the future expansion of the Route 22 corridor. Setback requirements should prohibit any integral part or portion of the development plan which if eliminated would preclude the use of the site plan as approved.

b. Route 311 and 164

Aside from Route 22, of all the State highways in Patterson, the Steering Committee felt that Route 311 and Route 164 are the two that will most likely require improvement in the future. Three sections of Rt. 311 are of primary concern. The first section is located at the intersection of Rts. 311 and 292. Recently NYS DOT completed improvements to the intersection. However the improvements failed to adequately correct the problems. The NYS DOT will be completing additional improvements to NYS Route 311 within the Hamlet this year. As part of those improvements a traffic light will be installed at the intersection of NYS Route 311 & 292. The second section of Rt. 311 is the corner at the Rt. 164 intersection. In the period of January 1, 1990 and January 27, 1995 one hundred and twenty nine accidents were reported in this area. A third section of Rt. 311 of concern is the section between the intersection of Rt. 164 and Interstate 84. Many times in this area excessive delays are encountered for south-bound traffic

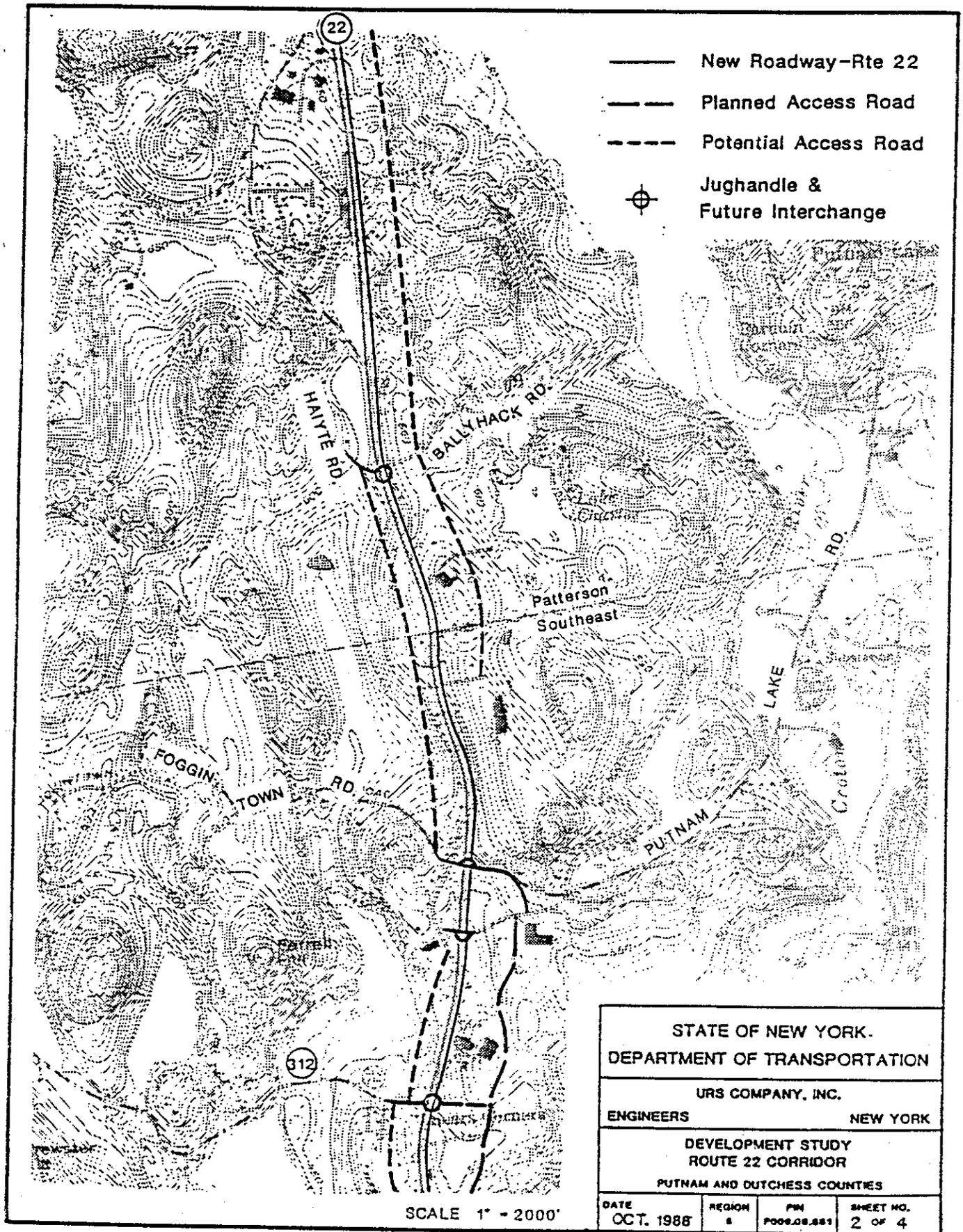


Figure 3. Route 22 Improvements and Access Road System

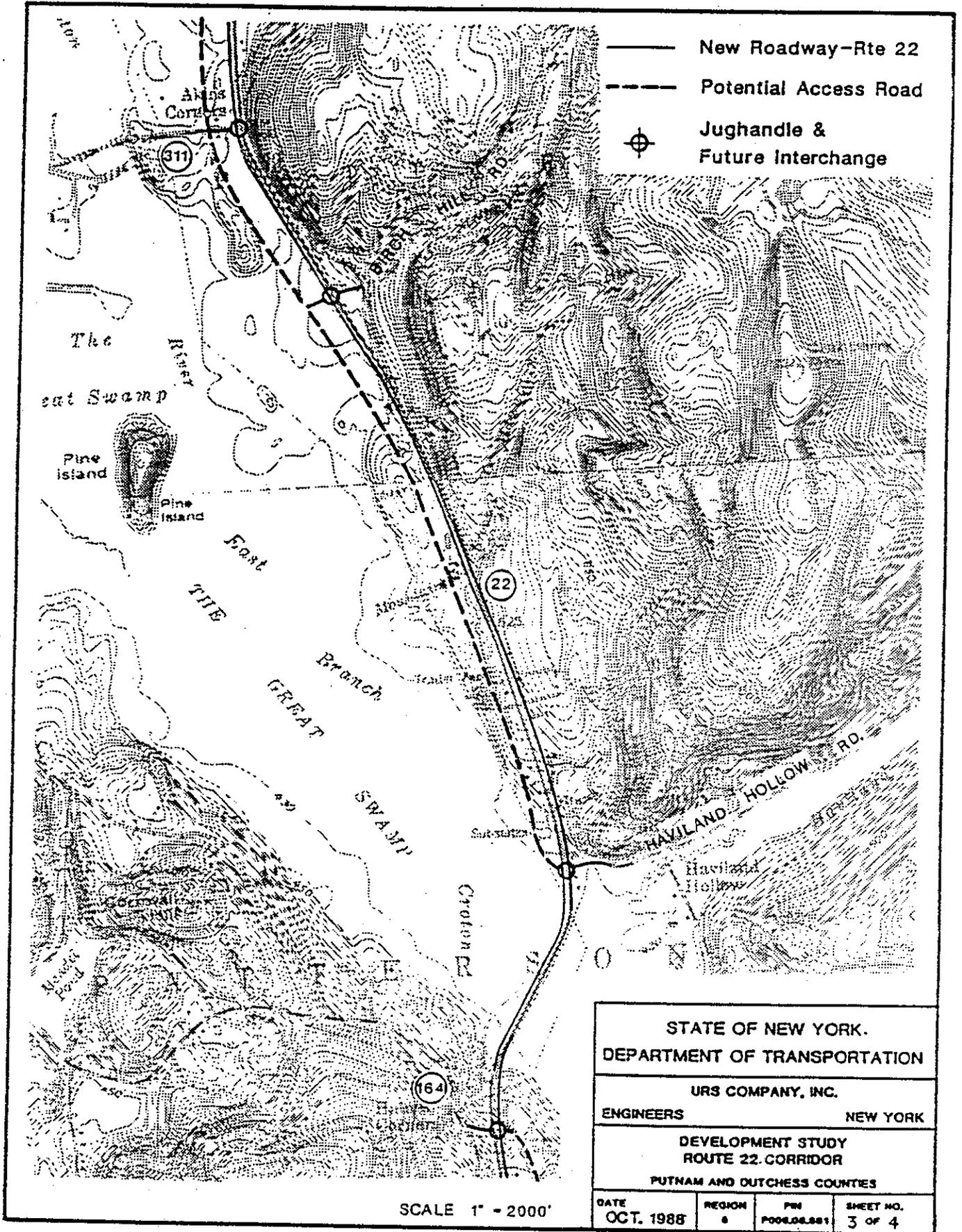


Figure 3. Route 22 Improvements and Access Road System

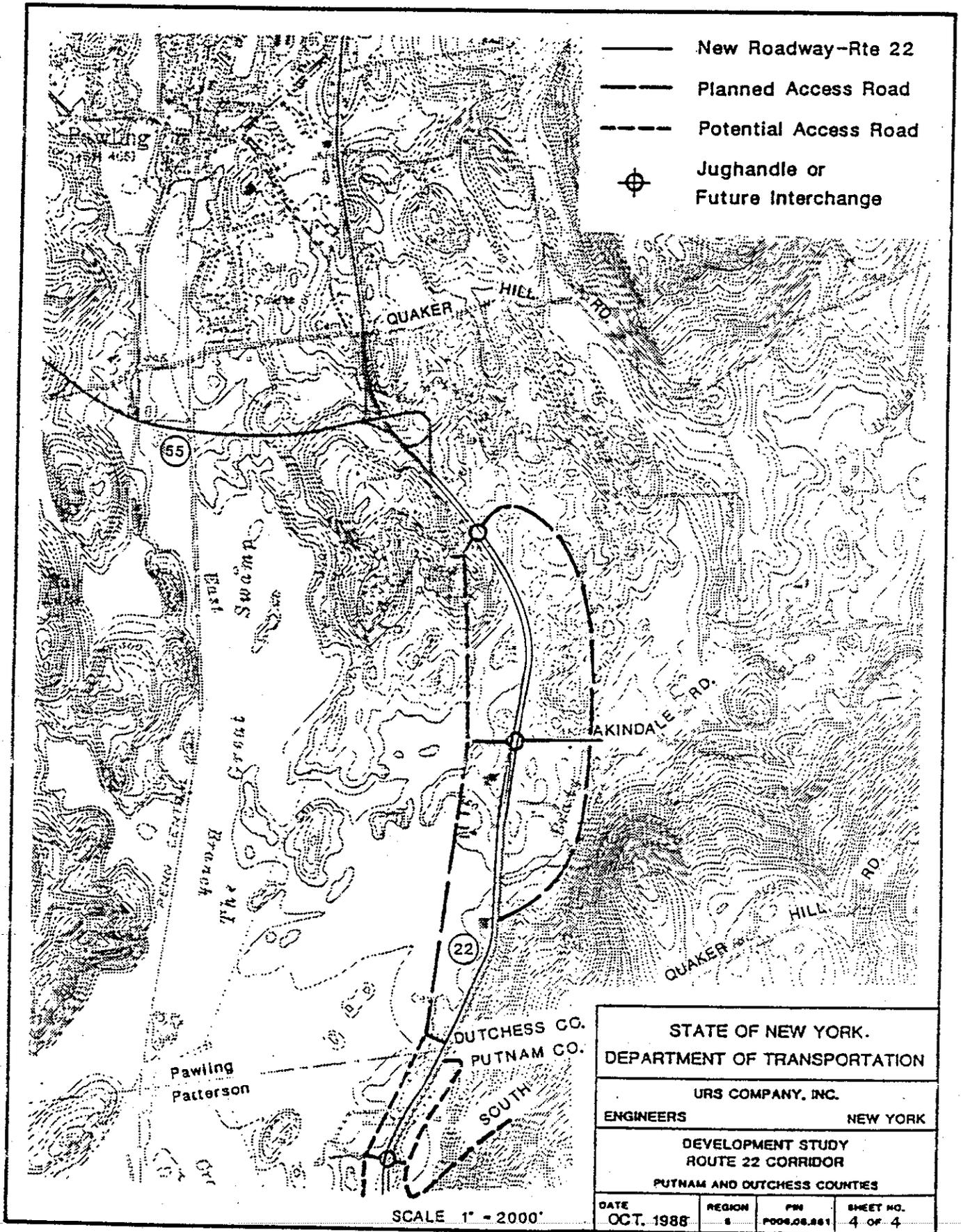


Figure 3. Route 22 Improvements and Access Road System

from the combination of truck traffic and the long incline of the road in this area. It is felt that a second lane in this section should be added to Rt. 311 in the future. Any proposed development in this area should take this second travel lane into consideration. A fourth section of road of concern is along Route 164 between Route 311 and Bullet Hole Road. In this section there are two railroad bridges that reduce the road to a single lane. It is hoped that in the future these two bridges can be reconstructed to allow the passage of two vehicles.

c. Putnam Lake

The future construction of a link between East Branch Road and the Putnam Lake road system is vital and should be a part of any proposed development plan contemplated in this area. Previously a connection between Hazel Drive and East Branch Road was contemplated.

d. New Road Design

The primary objective of residential subdivision design is to provide maximum livability. This requires a safe and efficient access and circulation system - connecting homes, schools, playgrounds, shops and other subdivision activities for people living there.

The design of new roads in a subdivision may be classified in two general areas: (a) the actual layout of the streets and pedestrian systems as related to land use, and (b) the engineering specifications for vehicular, pedestrian, and any bicycle facilities. But neither the layout nor the individual design elements should be analyzed separately. They must both be considered together in order to design a safe and efficient transportation system that incorporates the following factors:

(a) safety --for both vehicular and pedestrian traffic

(b) efficiency of service --for all users

(c) livability or amenities -- especially as affected by traffic elements in the circulation system

(d) economy -- of land use, construction, and maintenance, again as effected by or related to the circulation system.

5.15 Traffic and Circulation Plan Goals

The goals of any traffic and circulation plan are:

- Adequate vehicular and pedestrian access should be provided to all parcels.
- Local street systems should be designed to minimize through traffic movements.

- Street patterns should minimize excessive vehicular travel.
- Local street systems should be logical and comprehensible, and systems of street names and house numbers should be simple, consistent, and understandable.
- Local circulation systems and land-development patterns should not detract from the efficiency of bordering major streets.
- Elements in the local circulation system should not have to rely on extensive traffic regulations in order to function efficiently and safely.
- Traffic generators within residential areas should be considered in the local circulation patterns.
- Planning and construction of residential streets should clearly indicate their local function.
- The street system should be designed for a relatively uniform low volume of traffic.
- Local streets should be designed to discourage excessive speeds.
- Pedestrian-vehicular conflict points should be minimized.
- A minimum amount of space should be devoted to street uses.
- There should be a minimum number of intersections.
- The arrangement of local streets should permit economical and practical patterns, shapes, and sizes of development parcels.
- Local streets should be related to topography from the standpoint of both economics and amenities and should not be of such grade as to pose a safety concern.
- Appropriate provisions for public transportation within residential areas should be established.
- Local streets should be designed to promote a positive community appearance.
- Local streets should be designed to reduce maintenance where possible.

5.2 Public Transportation System

5.21 Metro-North

The Metropolitan Transit Authority provides commuter service linking Patterson to White Plains and New York City via the Upper Harlem Line of Metro-North. In addition to the Patterson station, there are near-by Metro-North stations at Brewster North and Brewster Village in adjacent Southeast. In

recent years, improvements have been made to the Harlem Line. The service has been electrified from Grand Central Station to Brewster North Station which has reduced travel time to Manhattan to just over ninety minutes. As it is the last station in the electrified section of the line, Brewster North also serves as a transfer point where commuters to Patterson change to trains which operate by diesel power. Metro-North has recently completed upgrades to the facilities in the Patterson Hamlet. The improvements include an increase in the service and an elevated, enclosed platform.

There are 52 paved parking spaces on the west side of the railroad tracks in the Patterson Hamlet, off Route 311 to the south. Metro-North acknowledges the need for an increase in parking facilities in order to service future increases in ridership. In 1999 the Town and Metro-North initiated discussions concerning the construction of a new parking facility on a 3.31 acre parcel currently owned by Clancy Moving Systems. The parking facility would add an additional 140 parking spaces for individuals using Metro-North's train service.

5.22 PART

The Putnam Area Rapid Transit (known as PART) operates several routes throughout the County, one of which serves Patterson. PART's Route One (PART 1) provides day-time, week-day service connecting the Putnam Lake community with the Village of Brewster, location of a Metro-North rail station. PART 1 continues into Carmel, and then north into Kent and the south-western section of Patterson. In Carmel, it is possible to transfer to PART 2 which serves most of the Town of Carmel. The Part 5 route which served the hamlet of Patterson was discontinued do to lack of ridership.

5.23 Commuter Parking

It should be noted as part of the regional transportation system serving the Town, that there is a park and ride parking lot on Route 311 adjacent to the Interstate 84 interchange. The park-and-ride lot holds approximately 50-55 cars, and is generally filled in the morning on a regular basis.

5.24 Westchester County Airport

Westchester County Airport is located six miles northeast of the City of White Plains in Westchester County, approximately 32 miles from the Town of Patterson. This airport has two runways and offers service from eight major carriers, such as US Air, TWA Express, Northwest, United, Allegheny, Mohawk, United Express, and Business Express.

The airlines at Westchester County Airport offer flights to New England, Washington, D.C., Philadelphia, Baltimore, Chicago, and most other midwest cities. Their five-year master plan calls for expanded facilities such as several additional hangars, a new terminal, and/or increase in parking area.

5.25 Stewart Airport

Stewart Airport is located in Newburgh, New York, approximately 23 miles from the Town of Patterson. The size of the airport is approximately 10,000 acres, with 8,000 acres left as a buffer zone to the west. The Metropolitan Transit Authority (MTA) purchased Stewart Airport from the United States Airforce in 1970. At that time, one east/west runway existed which ran in both directions approximately 8,000 feet; that runway has since been expanded to 12,000 feet.

On April 17, 1990, Stewart Airport opened as a commercial airport. At that time American Airlines was the only airline in operation at the airport, flying six (6) non-stop flights a day, three (3) to Chicago, and three (3) to Raleigh/Durham.

On August 1, 1990, United Express started non-stop flights to Dulles International in Washington, D.C. Since then, American has agreed to two non-stop flights per day to Dallas/Fort Worth, and an one additional flight per day to Chicago and Raleigh/Durham.

The opening of Stewart Airport has proven to be very successful. The aircraft flying out of Stewart have a seating capacity of 150 persons, of which 85-90% is utilized.

As a result of the opening of Stewart Airport, there has been an alteration in the Patterson air space. In addition, traffic may increase slightly on Interstate 84 because it is a direct route to the Newburgh/Beacon Bridge from Putnam County and northern Westchester County, the southeastern limit of the market area. Danbury, Connecticut is on the fringe of the market share area to the east, possibly increasing traffic on Interstate 84.

6.0 COMMUNITY FACILITIES AND SERVICES

The availability of adequate municipal facilities and services is a key factor in the successful development of a community. Moreover, providing services of high quality is extremely important in attracting good ratables to a municipality. Often it is the extent and quality of facilities and services offered by a community that distinguish it from other communities and make it more attractive to prospective residents and investors.

The Community Facilities Plan represents a strategy for providing an overall system of facilities and services designed to keep pace with the present and prospective growth in the Town of Patterson. Included in this plan are the educational and cultural facilities, public buildings and services, as well as semi-public and private facilities which offer services that are substantially public in nature.

Consideration will have to be given in the Town's Comprehensive Plan to a number of community facilities and services, including schools, fire protection services, postal services, police service, health care facilities, Town Hall facilities and other public buildings. Some of these are now adequate and will be in the future, while others will have to be expanded.

6.1 Utility Services

Most residents of Patterson depend on wells for their water supply. There is two water district, the Alpine Water District and the Dorset Hollow Water District, as well as several proposed and existing projects on public water. There have been discussions of the possible development of community-wide systems, but currently no such systems are proposed. There are also no plans at the County-level to provide a regional water supply service.

Groundwater is the principal source of potable water in the majority of Putnam County and the Town of Patterson. Groundwater also contributes an essential part of natural stream flow and is necessary to the viability of wetlands, reserve storage for reservoirs and water quality throughout the county. An extensive discussion of groundwater potential is contained in the section of the report describing the hydrogeology of the Town.

Most residents of Patterson depend on septic systems for the disposal of sewage. As in the case of the water systems, community-wide sewer systems have been studied, but have not been developed.

Neither the Town as a whole nor any existing development is in a financial position to develop new water supply or sewage disposal facilities. These facilities are best handled by requiring proposed systems (such as dry sewer or water lines) in new developments in such fashion that they may be integrated and expanded to serve larger areas. This would provide for future needs at a much lower cost to existing residents than is likely to be the case through the development of water supply and sewage disposal facilities by the Town of Patterson. Systems created by private development could eventually be taken over by the Town and become public sewer districts.

The exception to the above would be Putnam Lake. Since there are likely to be few new developments in Putnam Lake, water supply and sewage disposal facilities, if and when needed, will probably have to be installed by the Town and County with the help of Federal and State funds when available.

Recently, the New York City Department of Environmental Protection has taken aggressive steps to protect the City's supply of drinking water, including the Croton Reservoir, into which the Great Swamp drains. This heightened effort has included new regulations which restrict certain activities which may degrade water quality within the watershed. The regulations prohibit new sewage treatment plants from being constructed in Patterson. The regulations also require that changes to stormwater runoff do not increase the nutrient loading to the reservoirs.

6.2 Schools

The Town of Patterson is serviced by the Carmel Central School District and the Brewster Central School District and small part of the Pawling School District. The Carmel Central School District includes three elementary schools: Kent Primary (1969), Matthew Paterson (1971), and Kent Elementary (1954). There is a middle school (George Fisher Middle School, 1970) and Carmel High School (1929, 1963, 1980). At present, the George Fisher Middle School is located on Fair Street in the southwest corner of the Town; Matthew Paterson Elementary School is located in the Hamlet of Patterson on South Street. Both are expected to continue their function in the future. District school offices for Carmel are located on South Street in Patterson. The Brewster Central School District maintains two elementary schools, John F. Kennedy Elementary and Garden Street School. In addition, there is the Wells Middle School and the Brewster High School.

Enrollment by grade level percentages is similar for both the Brewster and Carmel School Districts. The grades K-5 make up 47% of enrollment; grades 6-8, 20% of enrollment; and grades 9-12, 32% of enrollment for Brewster and Carmel has 30% enrollment for High School with 3% Special Education.

Presently, there are no educational opportunities beyond the secondary level within Putnam County according to the Putnam County Data Summary.

Both the Carmel and the Brewster School System are experiencing a shortage of space due to increasing enrollments. Plans for additional space are currently being reviewed by both school districts.

6.3 Fire Facilities

Fire protection services in the Town of Patterson are provided by the volunteers of the Patterson Fire Department and the Putnam Lake Fire Department. The Town is served by three firehouses. The Patterson Fire Department's has its station located in the hamlet of Patterson on Route 311 with a substation located on Bullet Hole Road. The Putnam Lake Fire Department's firehouse is located along Haviland Drive in Putnam Lake.

The distance of structures from fire stations is an important element of fire fighting. The Fire Rating Organization of New York State recommends that in low density rural areas no portion of a fire district

be more than five road miles from a firehouse. The existing fire stations provide adequate protection for the Town. However, consideration has been given to establishing another fire station along Route 22, south of Route 164. A needs assessment should be included on a case-by-case basis when evaluating the environmental impacts of large proposed developments. Should development projects be proposed in locations outside of the recommended distance from a fire station, special fire protection methods may need to be utilized in the design and construction of that project. In addition, new developments should ensure that a sufficient source of water to combat a structural fire exists within a reasonable distance from the development.

6.4 Postal Services

The Town of Patterson is served by four post offices, located in the Hamlet of Carmel (zip 10512), the Town of Southeast (Zip 10509) and the Hamlet of Patterson (zip 12563) and the Holmes area (zip 12531). The facility in the Hamlet of Patterson offers retail service consisting of counter service and post office boxes.

The Patterson post office, at 1528 square feet, had experienced a significant shortage of working and storage space and moved their rural route delivery service to the Brewster branch. The Postal Service is currently considering the construction of a new post office building in the Patterson Hamlet. The Brewster post office has relocated to a new and larger facility along Doansburg Rd. in the Town of Southeast. A new facility has recently been completed for the Holmes post office located along Rt. 292. Finally, the Carmel post office has previously indicated that their current facility has sufficient room, and that they have no immediate plans to expand the facility.

6.5 Police Service

Police protection services in the area are provided by both the Putnam County Sheriff's Department and the division of State Police, New York State. There is no Town of Patterson Police Department.

Headquartered in Carmel, the County Sheriff's Office has a force totaling 107 officers, many of whom are involved in court and correctional work. A minimum of three patrol cars are on duty at all times in all of the Towns within Putnam County.

Current staffing levels of the Brewster Barracks of the New York State Police include 13 officers and 4 detectives, but can range as high as 25 officers and 4 detectives. Seven police cars are based at the barracks. At any moment, between one and three of the cars are on patrol.

6.6 Health Care Facilities

The Putnam Hospital Center is located on Stoneleigh Avenue, Carmel, New York. The 156-bed facility serves Putnam County, northern Westchester County and southern Dutchess County totalling a population of over 100,000 people. The Danbury Hospital is located at 24 Hospital Avenue, Danbury, Connecticut. The 450-bed facility serves the area surrounding Danbury plus nineteen communities in Putnam County

drawing a patient load from such villages as Somers, Carmel, Mahopac and Brewster. In addition, three other hospitals are located at Peekskill, Beacon and Poughkeepsie, New York.

6.7 Town Hall and Other Public Buildings and Facilities

The Town Hall, located at the intersection of Route 311 and Route 164, has been experiencing a severe shortage of space. The current Town hall is located on two lots which together equal 2.5 acres. The Town has recently acquired a 1.59 acre parcel along NYS Route 311 in the Hamlet on which a new Town Hall will be constructed. The Town of Patterson has previously acquired, through donation from the Patterson Fire Department, the old Patterson Firehouse located in the immediate area of the new Town Hall. The Firehouse has been previously renovated for Town Court, recreation, and the Town Library. The Town has also recently acquired a commercial property located at the end of Front Street and is currently exploring use of this building for recreation. The Town Garage is located on Cornwall Hill Road.

6.8 Patterson Library

The Patterson Library Association is a private, non-profit organization governed by a volunteer Board of Trustees. The Patterson Library recently opened a new facility on September 9, 1996 located at the Donald B. Smith Building (old Patterson firehouse), Route 311. Annual operation funds are provided by Putnam County, the Town of Patterson, and donations from the private sector. The new facility is approximately 2,500 square feet. The Patterson Library Association's five year plan includes increasing services and providing a satellite service in the Putnam Lake area.

6.9 Historic Resources

Patterson is a Town rich in history and historic landmarks. Fortunately, the Town fathers have recognized this significance and have taken steps to preserve historic resources. The Putnam Preservation League has identified sixty-four sites of historical importance to the Town of Patterson based on surveys conducted in 1985 and 1986; they are identified in the Background Analysis report (Manuel S. Emanuel, June 1989). These properties are scattered throughout the Town, primarily located on the major roads. There are several each on Haviland Hollow Road, Route 22, and Bullet Hole Road. Primary clusters of historic sites occur in the Hamlet of Patterson, and at the intersection of Route 311 with Route 164 and Cushman Road. (See Appendix G)

6.10 Classification of Towns

At the last decennial federal census, Patterson's population had not yet exceed 10,000 persons. Towns, such as Patterson, who do not have a population exceeding 10,000 and have not by special act of the legislative body changed there classification, are classified as second class towns. It is anticipated that with the year 2000 decennial federal census that Patterson's population will rise above the 10,000 mark which will mean that Patterson's town classification will change.

Towns are divided by Town Law into one of three classifications; second class towns, first class towns and suburban towns. Towns with a population of 10,000 or more are classified as a first class town. Towns

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with a population of 10,000 or less are considered a second class town. Under certain circumstances a second class town, by act of the town board and subject to permissive referendum may become a first class town. A suburban town is a town which has a population of at least 25,000 or has a population of 7,500 and is within 15 miles of a city having a population of at least 100,000. Initially when the town classification system was created by the State Legislature there was a fairly clear-cut differentiation between the powers granted to the different classes. However as the state laws have changes over the years those differences have become less pronounced. For example, the Constitutional Home Rule Amendment of 1964 granted to all towns the local law powers previously enjoyed only by suburban towns.

Whenever the population of a town of the second class exceeds 10,000, it automatically becomes a first class town effective on the first day of January succeeding the next biennial election held in that town. The primary difference between a first class town and a second class town is the officers of the town. Every second class town must have the following officers: a supervisor, two justices of the peace, two town councilmen, a town clerk a town superintendent of highways, three elected assessors, and a tax collector. A first class town must have as officers a supervisor, two justices of the peace, four town councilmen, a town clerk a town superintendent of highways, one appointed assessor, and a tax collector. As one can see the basic difference between a town of the first class and a town of the second class is the number of councilmen and the status of the town's assessor, which Patterson has already changes to that which would be required of a first class town. In addition, a first class town may establish a number of additional appointed offices, such as town comptroller or director of purchasing, generally not permitted in a second class town.

7.0 OPEN SPACE AND RECREATION

7.1 Open Space

One of the more important challenges in the process of planning for Patterson will be how the Town preserves its open space and provides for future recreational opportunities. Open Space protection is an important consideration in helping to accomplish several goals. It allows for the preservation and conservation of natural resources and for the many potential recreational opportunities such as canoeing, hiking, hunting, fishing, and many other organized recreational activities. It minimizes and in some instances helps to reduce nutrients in stormwater runoff. The quantity and location of the Open Space within the Town is also one of the key elements in determining the character of a community. This open space can create a rural farm like atmosphere, an exurban style town, or one of a suburban nature.

In 1991 the Planning Board, in conjunction with the Environmental Law Foundation, conducted a Community Survey to determine the type of Town Patterson residents wished to live in. The 1991 Community Survey results indicated a desire to maintain a rural character for the Town. In order to maintain such a rural atmosphere, an aggressive plan for the protection of the remaining open space - which also must take into consideration continued economic growth - must be developed.

Within the boundaries of Patterson, presently, a major portion of the land appears to still exist as open space and, although most of the land at present is privately owned, it still affords the Town the rural quality it desires. While literally thousands of acres of land are currently undeveloped and serve to create this illusion of open space persisting forever, a considerable amount of this land has the potential to be quickly consumed for residential and commercial development under the present development policies. Several techniques are available to help preserve the remaining open space in such a way as to promote a rural atmosphere.

In addition to protecting larger areas of open space, one of the most critical areas for establishing community appearance is along the major roadways. These edges can either establish or remove a sense of natural environment or openness and should be protected to keep the rural quality of the Town through the use of adequate setbacks and buffers. Another critical area of concern is how the overall design of development can affect the viewshed. A viewshed analysis for the Town was done as part of the Rural Resource Protection Plan completed in 1991. Because the topography of the Town of Patterson (being essentially a valley surrounded by hills) offers many scenic vistas, great care must be given to the proper placement and design of development. For example should the height of a house exceed the tree canopy, or a new road be improperly placed such development may have a very severe impact on the viewshed.

The open space plan of surrounding communities can also greatly influence the appearance of an adjoining town and should be taken into consideration. Every effort should be made to coordinate any open space plan for Patterson with similar plans in adjoining towns as well as any regional plans.

7.11 What is Open Space

Open space is land that a conscious decision has been made to dedicate or reserve those lands in a natural state. Lands can be protected for a variety of reasons including conservation, aesthetics, passive and/or active recreational uses. Open space and other natural areas can provide essential opportunities for education and for research on the structure and function of ecosystems and thereby aid in the learning necessary to sustain human life in a manner compatible with a sound ecology. Open space can also be used to mitigate the impacts of development, as in the instance of a created wetland area used to treat stormwater runoff.

In order to protect the environment and the quality of life, a percentage or portion of any town must be conserved as open space. The use of open space for the protection of “quality of life or in “protection of the environment” are many. Open space can help in protecting underground and surface drinking water supplies. As an example, wetlands and floodplains, if left in their natural state, have a limited ability to process and reduce contamination contained in stormwater runoff from developed areas. These areas also help control the quantity of water that results from a storm event. Protected forested areas are buffers for air and noise pollution, help regulate storm water run-off, and help control erosion. The preservation of environmentally sensitive areas such as steep slopes and ridge tops promote a rural character within the viewshed. Protection of these areas from the impacts of development eliminates degradation of these resources, while providing for additional recreation areas, and aiding in the preservation of the rural character of the area.

Open space in a town may consist of the following:

- a. Public parks or preserve areas
- b. Land set aside as part of a conservation subdivision (Section 278 of Town Law) as area not to be developed except for limited recreational uses
- c. Land owned by semi-public and public organizations for conservation purposes
- d. Land held for protection of public water supply
- e. Portions of properties owned by the public school district and used for recreational facilities or left in a natural state.
- f. Land protected by easements which restrict the use and development of the property to passive recreation or unaltered natural conditions
- g. Waterbodies.

7.12 Existing Open Space

Patterson presently has a number of areas of existing open space which should be considered as design elements in the formulation of any open space plan. These include public recreation lands, conservancy holdings, lands held under Section 278 of Town Law, easements, commercial and private recreation lands, and schools.

- a. Several subdivisions have received approval under Section 278 of Town Law. These subdivisions have been allowed to cluster their dwelling units in one portion of the land while leaving the remaining lands as open space. Among these subdivisions are:

Project	Location
Meadow Brook Farms	Route 292
Quail Ridge	Haviland Drive
Pondview	Fair Street
Field and Forest	Farm to Market Road
Big Elm Subdivision	Big Elm Road
Chestnut Knolls	Tommy Thurber Lane

- b. Existing public recreation lands are as follows:

State	County	Town	Land Trust
Cranberry Mt. Wildlife Area	Walter Merritt County Park	Patterson Environmental Park	Ice Pond Preserve
Bog Brook Unique Area	11 parcels located in the Great Swamp	William Clough Nature Preserve	Twin Lakes Preserve
Wonder Lake Natural Area		Parcel along Rt. 292 (7.5 acres)	Sterling Farms Preserve
		Veterans Memorial Park	

- c. Two (2) large privately owned parcels of land, which are primarily used as summer camps, make Patterson their home. These camps are Camp Wilbur Herrlich, owned by the Lutheran Church and the Educational Alliance, Inc. These areas should be

encouraged to exist in their present use as long as possible, however should not be considered as protected open space.

- d. Thunder Ridge, a 300 plus acre site, provides downhill skiing in the winter and has provided in the past various activities during the summer such as a Medieval Festival and a summer concert series. Thunder Ridge is one of two commercial recreational facilities presently available in the Town.
- e. The second of the two commercial recreational facilities located in Patterson is Classic Golf. This is a golf driving range and miniature golf facility located along Rt. 22 near the Pawling border.
- f. An important easement to consider in planning for recreational opportunities is the NYSEG easement running along Rt. 22 and from Rt. 164 to the Ice Pond area.
- g. Schools which should be considered in any Open Space Plan are George Fisher Middle School, the Matthew Paterson Elementary School, and the Brewster School Campus. While the Brewster Campus is located in the Town of Southeast, the campus does border Patterson. Access to nature trails in Patterson may provide educational opportunities to the Brewster Central School System.
- h. The Putnam Land Trust currently operates three passive recreational preserves in Patterson. The Ice Pond Preserve is located on the west side of Ice Pond Road and includes the Ice Pond. The Twin Hill Lake Preserve is thirty-three acres and is located along Farm to Market Road. The Sterling Farms Preserve is located on the west side of Couch Road and comprises thirty-seven acres.
- i. In 1988 the Putnam County Legislature declared the Great Swamp a “Critical Environmental Area”. In order to protect the Great Swamp for future generations the Legislature adopted a resolution requiring that any land acquired by the County through tax default would not be offered for re-sale but rather would be held as protected open space. Through implementation of this program Putnam County has acquired eleven parcels located in the Town of Patterson that total 160.53 acres.

7.13 Regional Open Space Plans

The regional and local Open Space Plans of the adjoining towns and Counties may play an important role in the development of Patterson’s Open Space Plan and must therefore be included in any discussion of open space. While all of the plans mentioned below are important, two are key to the development of any open space plan for the Town. They are the Northern Putnam Greenway and the Berkshire/Taconic Greenway.

a. Northern Putnam Greenway

Putnam County's Open Space Plan is the Northern Putnam Greenway. First proposed by the Putnam EMC in 1985, it was incorporated into the County's Comprehensive Park and Open Space Plan in 1988. It is a series of interconnected trails and open space lands which would form a largely continuous network of public and private open space that would stretch from the banks of the Hudson River in Phillipstown, over the Hudson Highlands, through Fahnestock State Park and the wetlands of Putnam Valley and Kent, and then across Patterson to the Walter S. Merritt Park.

b. Berkshire/Taconic Greenway

This greenway area which is in the early planning stages, would run along the Berkshire/Taconic Mountains and encompass New York's border area with Connecticut and Massachusetts. The length of this Greenway would extend approximately from the Walter G. Merritt property in the Town of Patterson north to Vermont's southern border with Massachusetts.

c. Hudson River Valley Greenway

The proposed Hudson River Valley Greenway encompasses a ten county area along both sides of the Hudson River in New York State from the Mohawk River south to the Battery in the Borough of Manhattan. It includes all of Putnam County as a countryside region, contributing to the general ambience and scenic beauty of the Hudson River Valley.

d. New York/New Jersey Highlands (Skylands) Greenway

This proposed greenway includes an area that stretches from Bear Mountain State Park along the Hudson River, west across the Hudson Highlands through Harriman State Park and the Sterling Forest Area, and continuing West across the northern New Jersey Highlands to the Delaware River.

e. DEC Open Space Plan

In 1992 the Department of Environmental Conservation and the Office of Parks, Recreation and Historic Preservation released an Open Space Plan for New York State. The plan discusses how to conserve and manage open space, and targets areas of importance for open space preservation. The plan recognized the Great Swamp and the Taconic Ridge as important areas for preservation in Patterson.

7.14 Special and Unique Areas

There are two unique areas in the Town of Patterson which bear special consideration in the formulation of any Open Space Plan. They are the Great Swamp and the Ice Pond area. Both are unique natural resources worthy of protection, and key to preserving the rural atmosphere of the Town.

a. Ice Pond

Ice Pond is a 46 acre waterbody owned by the Putnam Land Trust. The area immediately surrounding Ice Pond remains relatively undeveloped except for a few homes. However located within the Ice Pond's 2,181 acre watershed there are a number of more intensely developed areas including Brewster High School, an apartment complex and a number of residentially-developed areas. Ice Pond is bordered on both the east and west sides by railroad tracks and has more than likely experienced impacts from materials used by the railroad such as creosote and herbicides. The pond and wetland system overlay a surficial aquifer of unknown yield. Ecological factors indicate a potential for groundwater supply and recharge. While much of the area surrounding Ice Pond is open space, it is gradually being subjected to development pressure.

The integral relationship between Ice Pond and the surrounding wetland area, combined with the presence of faults which border the pond on either side, makes the area especially vulnerable to the stresses of development. The topography immediately surrounding Ice Pond is one of steep slopes and poor soils. Future development activity in this area will require careful attention in order to assure the continued quality of the pond and its surrounding watershed.

b. Great Swamp

The Great Swamp is the second largest wetland in New York State. It is comprised of a north and a south flow. The south flow of the Great Swamp is a wetland of approximately 3,300 acres that encompasses a watershed of 43,000 acres which drains into the East Branch Croton Reservoir of the New York City water supply. It is an important wildlife corridor which contains many rare plants and ecological communities. It also plays an important role in the migratory patterns of many bird species. Much of the Great Swamp can be characterized as a wooded wetland community dominated by Red Maple, a vegetative community found in wet low-lying areas. However, this description belies the diversity of the Swamp's ecology. In the southern section of the Swamp, where the influence of the East Branch floodwaters is strongest, a floodplain forest has developed. The northern and eastern fringes of the Swamp are characterized by herbaceous and shrub fen wetlands supported by alkaline seeps. The Muddy Brook branch, near Ice Pond, is dominated by a shrub-scrub wetland, perhaps because of the accumulation of organic materials in the soil.

The Great Swamp's natural fertility, variety of vegetative cover types, and large size combine to make the wetland a rich and diverse habitat for a variety of wildlife. Floodplain wetlands like the Swamp are extremely productive ecosystems, receiving a regular infusion of nutrients with each flood event. Much of the Great Swamp is considered an alkaline or calcareous wetland, the result of weathering of the limestone bedrock and derived glacial till that underlies the Harlem Valley. This alkalinity is unusual for wetlands in the northeast and play an important role in the water quality of the area. In the Great Swamp, the input of these nutrients is augmented by the alkaline nature of the Swamp's water and soils, which allow the Swamp's soils to retain nutrients until they can be utilized by plants.

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While the Swamp plays a critical role in the natural filtration process, its ability to retain and transform contaminants is not limitless. Wetlands are dynamic natural systems that have evolved in response to a specific water chemistry. Adding nutrients or other pollutants can deteriorate wetland quality by eliminating sensitive species, reducing a wetland's biological diversity. Ultimately, the quality of the water within the Great Swamp and East Branch Croton River is directly correlated to the conditions within the entire watershed.

Directly beneath the Swamp are unconsolidated sands and gravel of up to 50 feet in depth. These deposits, and fractures in the limestone bedrock beneath, are considered significant sources of groundwater with yields of 10-250 gallons per minute.

The importance of the Great Swamp has been recognized both locally and nationally. In 1982 the Swamp was nominated by consultants to the U.S. Department of Interior as a Natural Landmark. In 1989 the Putnam County Legislature designated the Swamp (all of the area within DP-22 on the State Wetlands Maps) as a Critical Environmental Area Under the State's Environmental Quality Review Act. The New York State Department of Environmental Conservation has given the Swamp a Class 1 classification, a ranking shared by only nine percent of the New York State wetlands.

Patterson's major commercial zone is located on the north-south Route 22 corridor, which also traverses the Great Swamp. Poorly planned development and inappropriate types of commercial business are threats to this unique area as well as impediments to a healthy economic base. Careful attention to the types of commercial businesses which the Town encourages along the Route 22/Great Swamp corridor and utilization of environmentally sound planning techniques, should help to attract appropriate business development in this area of the Town and protect this important feature.

There have been two significant planning initiatives for the Great Swamp. The first was a report, the "Great Swamp Conservation Plan", published by the Regional Plan Association in April 1991, which discussed the ecology, water quality, recreational uses and public access to the Swamp. It also identified existing threats to the Swamp's water quality, and provided recommendations concerning the most appropriate ways to protect and conserve this great resource.

The recommendations made for the protection of the Great Swamp by the Great Swamp Conservation Plan are:

Clean up existing sources of pollution in the watershed.

Improve regulatory controls on activity in both the Swamp and its watershed.

Develop land acquisition and stewardship programs to protect sensitive and productive ecological areas, enable appropriate public access, and educate the public as to the many values of the Great Swamp.

A second Report was prepared in 1999 by the Nature Conservancy entitled “The Great Swamp, A Watershed Conservation Plan”. Extensive research completed for the Report indicated that the size of the Great Swamp was 6,768 acres or 38% larger than the delineation used by NYS DEC. In addition to the recommendations found in the RPA Great Swamp Conservation Plan, the report prepared by the Nature Conservancy recommended six strategies for conserving the Great Swamp:

Increase public awareness of the Great Swamp

Foster local leadership on wetland and watershed protection

Strengthen wetland protections

Improve water quality

Protect plant and animal habitat

Encourage compatible economic development and improved land-use planning

7.15 Implementing the Open Space Plan

In implementing the Open Space Plan several options are available to accomplish the desired goals as follows:

a. Purchase or acquisition

Funding for land acquisition can come from tax levy, grants, donations, or recreation fees collected Under Town Law Section 277. While the 1991 community survey felt that the Town should take steps to protect and preserve land, respondents demonstrated a great reluctance in providing the funding for open space preservation. With the implementation of an Open Space Plan, grants may be available from the Office of Parks, Recreation and Historic Preservation (OPRHP) or other sources. The advantages of acquisition - better control which would allow more versatility as to the allowed uses - must be weighed against the disadvantages such as cost, maintenance, liability and loss of tax revenue.

b. Conservation easements

Conservation easements are a partial interest in property transferred to an appropriate nonprofit or governmental entity either by gift or purchase. Conservation easement provide the advantage of a less expensive alternative to acquisition, in which the landowner retains ownership and property remains on tax rolls, though often at a reduced rate because of restricted use. In addition, property maintenance is commonly provide by the landowner rather than the municipality. In some instances limited development may be allowed. Disadvantages are restricted use may lower resale value and the easement must be enforced.

c. Property tax incentives

Forest, farm and open space tax laws encourage these areas to remain in their current state through a reduction in property taxes. Property taxes are determined on the use of the land as agricultural, forest and open space land rather than at development values. Such incentives are granted in exchange for varying commitments by owners to maintain land in open space. Preferential assessment techniques promote resource conservation and management. Any tax base loss may be partially reclaimed through penalty tax on landowners who terminate enrollment. However it is worth noting that these are voluntary programs which do not provide long term protection.

In Real Property Tax Law Section 480-a, Forest owners can apply for a partial property tax exemption of up to 80% by committing their forest land to an approved forest management plan.

Article 25AA of the Agriculture and Markets Law establishes a protective state policy for farmland and allows a preferential real property agricultural assessment to encourage farming and thereby maintain farmland and its associated environmental and economic benefits.

d. Land conservancies

Private nonprofit organizations such as land trusts can protect rural resources by acquiring property or conservation easements. A land trust typically provides technical assistance to landowners to protect their lands, accepts donations of land for stewardship, or acts as a pass through agency to hold land in trust for government agencies until the necessary paperwork is completed and funds are available. Land trusts may also purchase land and develop a portion of the land in order to recapture their investment while protecting the remaining portion.

e. Design considerations

Several design techniques can be used to create the illusion of open space. This includes adequate buffer strips along roads and between developments, maintaining dwelling height below the tree canopy, developing landscape standards in all new development, protect existing vegetation, and limiting removal of vegetation. Trails, bikeways, and waterways can provide recreation in themselves while connecting other open space areas.

f. Transfer of Development Rights

Often the goals of a community come into conflict with development of land. These conflicts involve the community's desire to protect the existing character by preserving important features of the community such as protection of agricultural lands, open space protection or protection of scenic views. To accomplish these goals would require severe restrictions on the development potential of the land. These restrictions inevitably conflict with a developers desire to maximize his return on his property. It is basic constitutional law that municipal regulations may not be so severe that landowners are deprived of the right to a reasonable economic return on their

property. One method of alleviating the conundrum is through a “Transfer of Development Rights”. Transfer of Development Rights (TDR) offer a community a method of balancing the objectives of land preservation with the rights of a property owner to obtain a reasonable economic return on the use of his land. The basic concept of a TDR creates two separate zones in a municipality; a receptor zone and a preservation zone. Development rights, usually in the form of density requirements such as so many units per acre, are allocated to land located in the preservation zone. Those development rights are then required to be used for land located in the receptor zone. This is usually accomplished by the owner of the development rights located in a preservation zone selling the development rights to a property owner in a receptor zone. The property owner in the receptor zone can then use the development rights to develop his property at a higher density. The principal concern with the use of this technique is the availability of land suitable for development at the higher density needed for a receptor zone.

g. Tax Foreclosure

Property owners that do not pay their property taxes over a period of time, forfeit the right of ownership to the County of Putnam. These lands can then be re-sold or protected as open space. The protection of lands acquired by foreclosure, that are appropriate for open space, limits any government expenditures

7.16 Open Space Plan Considerations

Open space within a community should be managed under a comprehensive plan in order to target land suitable for preservation, make best use of acquisition funds and other preservation techniques, and to integrate acquired land into the overall recreation and environmental protection programs of the community. The primary goal of an open space plan is to promote the type of community desired by its residents. Equally important is preserving natural areas for the protection of air and water quality and wildlife habitat, providing recreation opportunities which are within a short driving or walking distance of populated areas, and creating an aesthetically pleasing landscape for the community. The formulation of an open space and park development plan depends on first establishing broad goals and then defining specific policies that will be needed to accomplish these goals. Goals and policies are important because they create the fundamental basis for plan development. In essence, goals and policies establish guidelines and a consensus from which a specific plan can be prepared and implemented. An important point to understand is that within the plan, open space is emphasized as a design element enhancing the inter-relationship between the natural and man-made world.

There are several important factors for the town to consider when framing goals and policies for the acquisition and maintenance of open space. In formulating plans for acquisition, either through direct acquisition or through a land trust, availability of funds for the future management of the land is an important consideration. The future maintenance of property for aesthetic, environmental and safety reasons is the primary responsibility of stewardship. Even land which will be utilized in a passive manner carries liabilities which must be determined and provisions made for covering such liabilities. Access related issues should also be considered by the Town in formulating a policy for the acquisition

of additional lands. Land that the town acquires must be accessible not just for the public to use, but also for the town to be able to manage and maintain these properties.

An important factor for the Town to consider in its open space preservation strategies are the passive and active recreation goals for the Town. In this way, properties being considered for open space acquisition will address criteria applicable to the Town's recreation needs as well as land preservation.

In order to promote the type of community desired by the residents of Patterson as expressed in the community survey, the goals of the open space plan for the Town of Patterson are:

- a. Preserve natural areas which would protect the quality of air, water, and wildlife of the Town.
- b. Preserve and enhance, through the protection of sufficient areas of open space, the natural beauty and rural quality of the community.
- c. Provide for recreational opportunities to the residents where those opportunities are within a short walking or driving distance.
- d. Protect environmentally sensitive areas and natural resources such as scenic vistas and roadways, waterways, floodplain and wetlands.
- e. Create a system of linking greenway corridors throughout the Town. Any system should consider both regional and local greenway initiatives.

7.17 The Open Space Plan

The central element of the Open Space Plan is the creation of an “Open Development Overlay Zone”. This Open Development Overlay Zone, in conjunction with the “Proposed Zoning Plan” provides the framework for accomplishing the goals of the Open Space Plan, foremost of which is protecting the community’s rural character. The “Proposed Zoning Map” indicates most of the land in Patterson changed from the existing zoning, which allows subdivisions to create minimum lots of 40,000 and 80,000 square feet, to zoning which would restrict newly subdivided lots to 4 acres or more. However a minimum lot sizes of 4 acres by itself would do little more than promote a suburban sprawl which would quickly use up the landscape and produce exactly the type of Town the Plan attempts to avoid. This is where the Open Space Plan becomes an integral part of the Comprehensive Plan. The Open Space Map’s overlay zone requires that subdivisions show a *density* of new homes no greater than one for every four acres, but that those homes be “clustered” together on lots much smaller than four acres. This “clustering” allows the preservation of large areas of protected open space, reduces the cost for new roads and other infrastructure improvements, and creates the feel of a country-style atmosphere within the subdivision. As these preserved areas are created, if properly planned they may be joined or linked to each other. The joining of these protected open space areas will produce the added benefit of creating natural wildlife corridors which are necessary for maintaining species diversity and wildlife habitats.

Several factors played an important role in developing the Overlay Zone shown on the Open Space Map. Among those factors were the visual impact that future development in the overlay zone may have on the community, the important natural resource areas of the Town and the location within the landscape of environmentally sensitive areas, such as large wetland systems or steep slopes, as shown on the resource maps included in Patterson's Comprehensive Plan. Also an important consideration was the desire to create a natural greenway corridor and trail system throughout the Town which ties together other regional greenway plans.

7.2 Passive Recreation

In addition to an open space plan, consideration for active and passive recreational pursuits should be addressed. Passive recreation consists of activities such as hiking, nature study, boating, and camping, while active recreation would include ball fields, swimming and jogging.

The Town owns four passive recreation facilities - Patterson Environmental Park in the Hamlet (23 acres), the Clough Nature Preserve in the south central part of Town (63 acres), a 7.5 acre parcel along Rt. 292, and a parcel of land adjoining Memorial Park. There are also a number of state, county, and private facilities available to the residents of Patterson.

7.21 Patterson Environmental Park (Town)

A 23 acre site in the hamlet area and adjacent to the Great Swamp provides access to what appears to have formerly been an 8 acre island and former quarry. The establishment of a marble quarry, the Beech Island Marble Company, approximately a century ago created the roadway to the island. The park has a boat launch for canoeing on the Croton River of the Great Swamp. This site was the recently evaluated by John F. Fava, Landscape Architect. Recommendations provide for a discovery park accessible by both road and water.

7.22 William Clough Nature Preserve (Town)

A 63 acre preserve near the Town of Southeast border along Farm to Market Road. The preserve borders the Ice Pond area however access to the Ice Pond area is limited due to the Metro-North rail lines. The preserve is located close to the Brewster School Campus. Consideration should be given to the development of a trail system between the preserve and the Brewster Campus. This may allow use of the site by the schools for nature study. Also improvements to the parking area are needed to make this area more accessible to the general public.

7.23 Rt. 292 Lands (Town)

A 7.5 acre parcel on Route 292 recently acquired through tax default. There are currently no plans for its use.

7.24 Cranberry Wildlife Preserve (State)

The single State facility consists of the Cranberry Mountain Wildlife Management Area consisting of 453 acres and located in the northeasterly sector of the Town. This site is managed by the New York State Department of Environmental Conservation with a primary emphasis on providing passive and active recreation activities such as hunting, hiking, camping, and nature study.

7.25 Walter Merritt Park (Putnam County)

Putnam County currently possesses the Walter G. Merritt property in Patterson. Located at the northeasterly edge of the Town, it consists of 600 acres. Access is provided along Haviland Hollow Road. Based on the nature of the site, as well as its previous use, its primary use in the future will focus on recreational uses such as hiking, nature study, hunting, horseback riding, and cross-country skiing. An evaluation of the Merritt Park by Robert E. Meyers SCS was completed in January of 1991. This report documented site conditions and made recommendations as to possible future uses.

7.26 Ice Pond Preserve (Putnam Land Trust)

In 1999, assisted by funding from New York State, the Putnam Land Trust acquired a one hundred acre parcel which included Ice Pond. This purchase, when added to a 23 acre adjacent parcel also owned by the Land Trust creates a 123 acre natural preserve. The preserve is generally a wooded hillside overlooking Ice Pond in the south western section of Town. The area lends itself to hiking, tree study, fishing and photography.

7.27 Twin Hill Lakes Preserve (Putnam Land Trust)

Thirty-three acres of scrub shrub, emergent fresh water marsh and upland mixed hardwoods overlooking the Ice Pond located along a private drive off Farm to Market Rd. This preserve is adjacent to the Town-owned Clough Preserve and borders the Ice Pond Preserve to the east.

7.28 Sterling Farms Preserve (Putnam Land Trust)

Thirty-seven acres of Oak Hilltop Community woodland located on Couch Road. The hillside was dairy pasture until the late 1920's, but it is now maturing second growth oak forest. The parcel was part of one of the 100-acre farms carved out of the Philipse lands for returning Revolutionary War veterans. In the early 1800's it belonged to the Couch family.

7.29 Wonder Lake Natural Area

In 1998 the State of New York acquired several parcels of land in the Towns of Patterson and Kent which make up the Wonder Lake Natural Area. Of the 576 acres that comprise the limited-access State Park, 540 are located in the Town of Patterson and 216 are located in the Town of Kent. The principle access to the site is from Ludingtonville Road in the Town of Kent, the park can also be accessed from

a utility easement off of Cushman Road in Patterson. Two lakes exist on the property; Wonder Lake (25.7 acres) and Laurel Lake (2.8 acres).

7.3 Recommendations for Passive Recreation

In conjunction with the implementation of the Comprehensive Plan, the following policies should be also implemented:

1. Passive recreation lands should be managed under one Townwide system. Natural Resource Inventories and Management plans should be developed for all publicly-owned lands.
2. The Town Board of Patterson should develop and adopt a comprehensive policy for future land acquisition and conservation easements. As part of the zoning changes that will be made to implement this Comprehensive Plan, those areas within the Town that the community feels are important open space areas and which should be protected should be refined from those areas identified in the Comprehensive Plan. The use of the various strategies as described previously under Section 7.15 should be implemented to protect and preserve these areas and for the development of the accompanying trail system as illustrated on the Open Space and Recreation Plan Map.
3. Zoning Code revisions to be considered should include protecting adequate vegetated setbacks along roadways, protecting existing vegetation including trees and the forest canopy, cluster subdivisions, and protection of environmentally sensitive lands.
4. The Town Board should develop a policy to work closely with local land trusts active in Patterson to facilitate acquisitions which are of interest to the Town in order to preserve open space.
5. A policy of rights of first refusal should be developed for those properties determined to be essential for an Open Space corridor including properties in tax default.
6. A stewardship program using Patterson residents to manage and watch over individual park sites should be developed.
7. A Townwide trail system should be developed as shown on the Open Space Map.
8. All subdivisions located in areas delineated as Open Space Protection areas on the Open Space Map should submit cluster subdivision designs as part of the subdivision application. The design of Open Space Development plans should accomplish three goals. First, the design should be sensitive to the environmental constraints of the site in question. Second, the design should take into consideration the Town's viewshed. And last the plans should provide for a connection to adjoining areas of protected open space. In this way an interlocking network of wildlife corridors can be created.

9. The Great Swamp, due to its undevelopable nature, remains as a substantial portion of the Town's open space, and a haven for wildlife. The Great Swamp should remain in its natural state. This would facilitate an environmental balance with nature and provide a site for hunting, fishing, and aesthetic appreciation. This should be accomplished through a combination of appropriate zoning, acquisition, and conservation easements.
10. The existing accesses to the Croton River and Great Swamp should be improved. Presently there are four boat launch sites in Patterson commonly used by the public for access to the Croton River. They are: the Patterson Environmental Park, the Route 22 bridge, the Green Chimneys Beach, and the bridge on NYS Route 311. Of the four, only the Patterson Environmental Park is a legal access for the public. Arrangements (easements, etc.) should be made to allow legal access at the other two sites. However given the sensitive nature of the Great Swamp extensive use of this area should not be greatly encouraged.
11. Whenever appropriate, easements, rather than outright acquisition should be used so that care and stewardship responsibilities will be shared between the Town and private landowners and possibly any local land trusts.
12. Adequate buffer strips should be preserved along roads and between different uses (ie., commercial/residential) and between different developments.
13. A "pilot" watershed protection district should be created along Rt.22 from the Intersection of Haviland Hollow Rd. north to the Town of Pawling to protect the water quality entering the Great Swamp.
14. A comprehensive watershed management program for Putnam Lake should be initiated for long term remediation of the Lake as recommended in the Lake management report by Dr. Siver.
15. The recommendations made by John Fava in his report on the Patterson Environmental Park should be implemented. These recommendations call for the development of a "discovery park accessible by road and water".

7.4 Active Recreation

Active recreation is defined as those activities such as soccer, baseball, basketball, and tennis. Active recreational needs will continue to be generated both in response to population growth in the Town and the changing characteristics of that population.

Over time, local preferences and the increasing popularity of sports activities may create needs for additional facilities and types of activities. Among those respondents to the 1991 Community survey that offered comments in regard to recreation, there appeared to be a general consensus that both structured recreational opportunities (ballfields, swimming, tennis, golf, etc.) and passive recreational opportunities (hiking, cross-country, skiing, biking) should be expanded in the Town. Further where possible, commercial recreational opportunities should be encouraged. These privately owned operations provide

recreational opportunities to the residents, while at the same time increasing the tax base, provide jobs, and create alternate sources of revenue.

In June of 1999, the Zoning Board of Appeals completed a comprehensive review of the Town's ability to provide for a variety of commercial recreational opportunities. In general, the Zoning Board of Appeals endorsed the concept of increasing the variety of commercial recreational uses allowed in Patterson and providing greater flexibility in where they may be located. By expanding the zoning code to allow new commercial recreation, the Board felt that the Town would be promoting the development of new opportunities for recreational activities which would also benefit the Town's tax base. The ZBA reviewed several zoning techniques that could be used to promote commercial recreation, while at the same ensuring that the recreational use would not impact on the Town's residents. The ZBA agreed that the most appropriate method was the creation of a "recreation overlay zone" in which a variety of recreational uses would be permitted by Special Use Permit. Only those uses which are family-oriented and promote a clean and healthy environment and are safe and unobtrusive to the Town's residents were felt to be appropriate for inclusion under the new recreation designation. The area of the recreational overlay zone has been included as Map "F". The recreational uses that the ZBA found should be allowed through a Special Use Permit have been included in Appendix "H".

7.41 Memorial Park

The Patterson Park District currently operates a recreation facility at the Maple Avenue Park in the Hamlet of Patterson as part of a park district, access is limited to those residents in the district. Consisting of 32 acres, the park offers facilities for activities such as swimming, fishing, and picnicking, in addition to two general purpose fields used for baseball and soccer and a basketball court.

7.42 Putnam Lake

The Putnam Lake subdivision was privately developed by the Times-Mirror Holding Company in the early nineteen-thirties. Putnam Lake is the largest body of water in Town, second only to the Great Swamp. This 225 acre lake is situated in a watershed of approximately 1,648 acre with a surrounding community consisting of over 1,300 homes. In addition, a business/retail center lies at the southern end of the lake which consists of a large supermarket, several retail businesses, two professional buildings, a bank, three gas stations, a used car dealer, a major fuel distribution business, and an industrial building, all of which are located adjacent to or in close proximity to the perimeter of the Lake.

Situated in the southeastern section of the Town, this former summer community now houses over 95% of its residents year round. The area consists of homes situated on small lots each with a septic system and well. While there are very few undeveloped lots left, the Putnam Lake area continues to experience development on these remaining lots.

Putnam Lake provides the residents of that area with various water related recreation, and a baseball field on the westerly side of the lake. However these facilities are controlled by the Putnam Lake Community Council, a private organization, with beach rights provided only to dues paying members. Initially membership in the Putnam Lake Community Council was limited to individuals who owned

property in the Putnam Lake subdivision, however recently membership has been open to any individual wishing to join.

The density of development surrounding the Lake and the related environmental stresses placed upon it was addressed in a 1987 study commissioned by the Putnam County Department of Planning and Development and conducted by Dr. Peter Siver of the Biology Department of Western Connecticut State University. Dr Siver's research, conducted over a three year period, documented the severe eutrophic condition of Putnam Lake and recommended that a comprehensive watershed management program be initiated for long term remediation of the Lake.

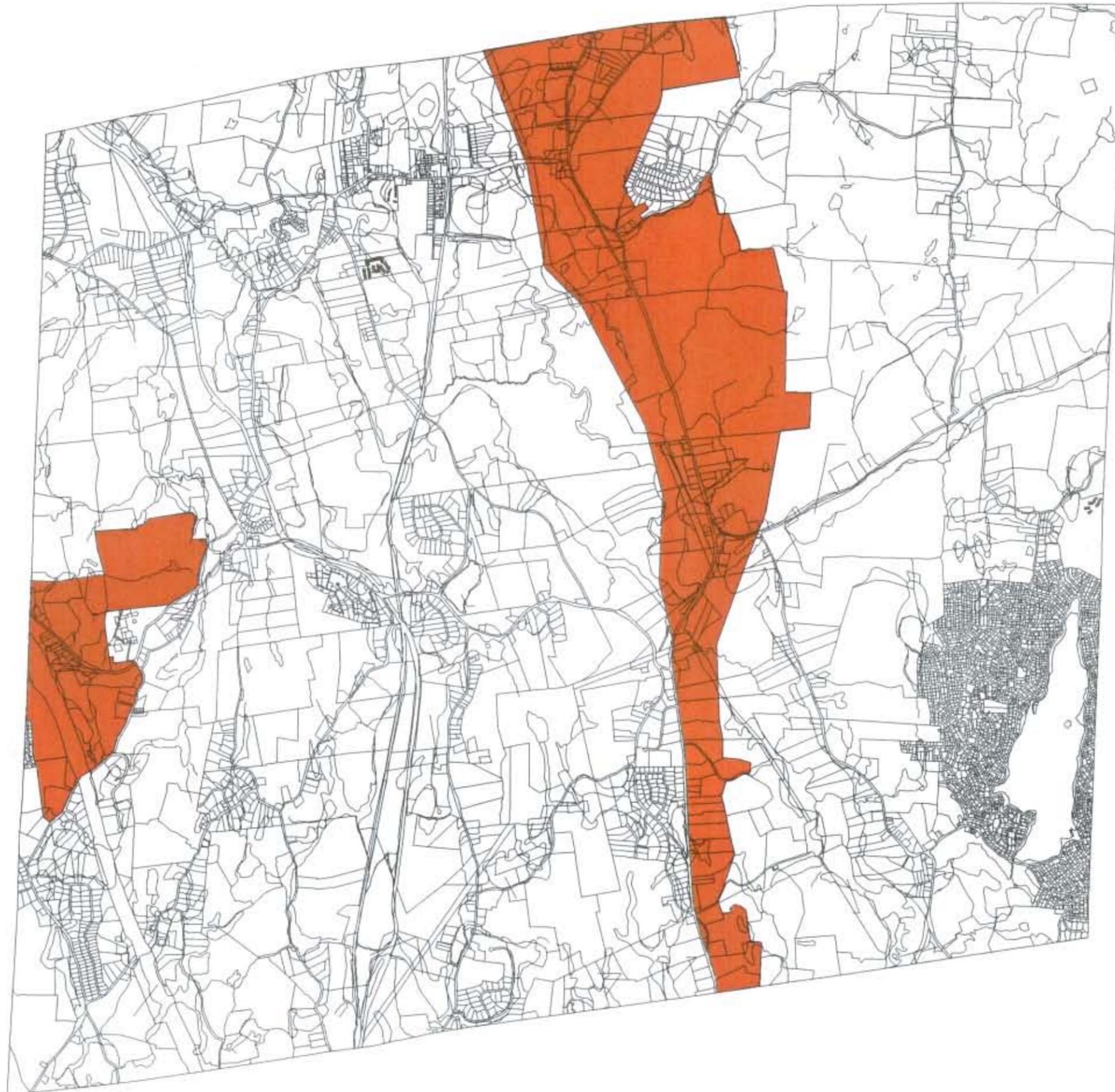
7.43 Club Court

In 1994 the Town of Patterson purchased a .6 acre parcel of land from the Putnam Lake Community Council located along Haviland Drive in the Putnam Lake area for development of a Town Park. The work began in 1995 and was completed in 1996. The park includes a complete children's playground, picnic area and gazebo.

TOWN OF PATTERSON

PROPOSED RECREATION OVERLAY ZONE

-  Tax Map Parcels
-  Recreation Overlay Zone



June 10, 1999

Prepared by
Patterson Planning Department

7.44 Thunder Ridge and Classic Golf

In addition to the public and semi-public facilities, there is the Thunder Ridge Ski Area located on Thunder Ridge Road at Route 22 which is a commercially operated private facility. Thunder Ridge, a 300 plus acre site, provides downhill skiing in the winter and various activities in the summer such as a Medieval Festival and summer concert series. Thunder Ridge is one of two commercial recreational facilities available to Town residents. The Town should not consider this a facility one which may last an indefinite period of time. The second of the two commercial recreational facilities located in Patterson is Classic Golf. This is a golf driving range and miniature golf facility located along Rt. 22 near the Pawling border.

7.45 Rails for Trails (Bike Path)

A bike trail system is being developed along the old Maybrook Rail line in Putnam County. The trail encompassing 13.6 miles is broken into three phases. The first phase is a 3.7 mile long bike path extending from the Dutchess county line (Holmes Road and Route 292) to the Towners area near Route 164 in the vicinity of Bullet Hole Road. Access is provided via three public roadways; Holmes Road, Route 311, and Route 164. Proposed construction of the first phase is anticipated to be completed by December of 2000. Phase two is a 5.4 mile long bike path extending from the Danbury City line (Route 6 near Saw Mill Road) to Pumphouse Road in the Town of Southeast. The third phase is the 4.5 mile segment extending from Route 164 at Bullet Hole Road in Patterson to Pumphouse Road in Southeast. The Putnam County Planning Department has obtained parking for the bike trail at the Holmes Road/Route 292 site and has been discussing a parking area with the property owner at a site located along the NYS Route 311. There are currently no plans for a parking area at the Route 164 terminus of the Phase 1 trail. Future development proposals which are adjacent or in close proximity to the proposed trail system may either impact upon or be used to enhance the trail system. The Town should require that these development proposals address the bike trail in their design.

7.46 Other Recreational Opportunities

The Town has constructed a regulation baseball field, including lighting for night games, along Cornwall Hill Road. In addition, a Town-owned baseball field, which is not currently used, exists next to the Alpine water works.

Additional recreational facilities are available at both the Brewster and Carmel school systems. These include tennis courts, a running track, baseball, and soccer fields. In addition the Patterson Little League has constructed two baseball fields along Maple Avenue.

7.47 Peckhams Quarry

The Peckhams Quarry, in the Hamlet area, and the adjoining buffer area is to be deeded to the Town of Patterson (as per a January 1970 Court Order) should operations cease for a period of 150 days. The Quarry is adjacent to the Patterson Memorial Park, which may allow for expansion of park facilities.

7.48 Recommendations

1. The Patterson Planning Board should exercise its ability under Section 277 of Town Law to acquire park lands where appropriate. The Planning Board should evaluate proposed subdivisions for the creation of parks earlier in the process and more closely than it has done in the past. This should be done in the context of a comprehensive park and recreation plan which targets specific regional locations for siting park lands.
2. Memorial Park may be considered for use as a town-wide park. This could be accomplished by the park district selling Memorial park to the Town of Patterson. The funds from the sale could then be used to offset taxes for the members of the park district. One park system encompassing all parks will facilitate management concerns for the Town. This proposal would need to be put to a public referendum and would also need approval of the State Comptroller prior to its implementation.
3. New parkland should be located in residential zones. Recreational lands should be located close to the people who will be using them to maximize convenience and minimize travel.
4. Commercial recreational uses - which will provide additional recreational opportunities to residents - should be encouraged. The Community survey showed a need for "more structured" types of recreation. Presently the only area zoned for commercial recreation is the Thunder Ridge ski area. The Thunder Ridge ski area is a valuable asset to the Town of Patterson. Commercial recreational uses should be encouraged in the Thunder Ridge area which would compliment Thunder Ridge as well as expanding the commercial recreation zone in that area.
5. Neighborhood pocket parks of approximately .5 to 1 acre in size should be established where appropriate. These parks, which will service the immediate neighborhoods, will ease the burden on the larger parks, and will enhance a sense of community. New parks can be created by developers in high density residential areas and should consist of amenities such as a jungle gym, benches, a sandbox, etc.
6. A townwide park system designed and based on standards developed by the National Recreation and Parks Association for active recreation should be established with one large park of 20 acres or more, two smaller parks of approximately 10 acres each, and several neighborhood pocket parks located in high residential areas. The 1991 Community Survey showed a desire on the part of Patterson residents to see recreational facilities expanded (82% of the respondents felt it was important) however there was no definite consensus among residents as to exactly what recreational activities were desired most. Parks should be developed encompassing a variety of recreation facilities based on NPRA standards. (see Appendix B).
7. The Putnam Lake area in recent years has seen an increase in pedestrian traffic. This is especially true of Lake Shore Drive surrounding the Lake which many area residents are using for their daily exercise. There is however no pedestrian walkway forcing people to walk in the street. Development of a trail (sidewalk) system should be considered for the Putnam Lake area.

8. Any new development in the area of the proposed Rails for Trails bike path should consider the bike path in its design. Parking areas will need to be provided along the proposed access points. In Patterson these points are Holmes Road, Route 311, and Route 164.

7.5 Recreation Standards

The total recreational space available to residents existing in the Town of Patterson is as follows:

	Town	County	State	SOS	Total
Active Recreation (acres)	32	--	--	--	32
Passive Recreation (acres)	94	1,071	989	192	2,346
TOTALS	126	1,071	989	192	2,378

The National Recreation and Park Association (NRPA) has developed standards which can be used by municipalities as a guide to developing parklands. Their recommendations are for 6.25 to 10.5 acres of developed park land for every 1000 people, and 50 acres for passive recreation for every 1000 people.

The 1990 Census survey results indicated a population for Patterson of 8,679. Using the 1990 Census and the NRPA standards it can be seen Patterson presently has adequate land for passive recreational opportunities, but needs to supplement it's land for active recreation by about 20 to 60 acres. This shortfall of active recreation land will worsen as Patterson's population continues to grow. Population projections indicate the by the year 2000 Patterson's population will grow by an additional 1,150 persons.

The 1990 census found an average of 3.0 persons per owner occupied dwelling unit. As most new subdivisions are owner occupied it can be assumed that each new unit in a subdivision will generate an average of 3.0 persons.

At an average cost of \$51,000 per acre (see Appendix C) for unimproved land, the cost per housing unit for land for active recreation would be between \$950.00 and \$1,600.00. There is also additional costs for improving the land for active recreation. Those costs vary depending on the type of facility being developed and the improvements that are necessary to make the land suitable for recreation, however could easily double the cost per acre to develop new parklands.

TOWN OF PATTERSON

MASTER PLAN
MAP "G"

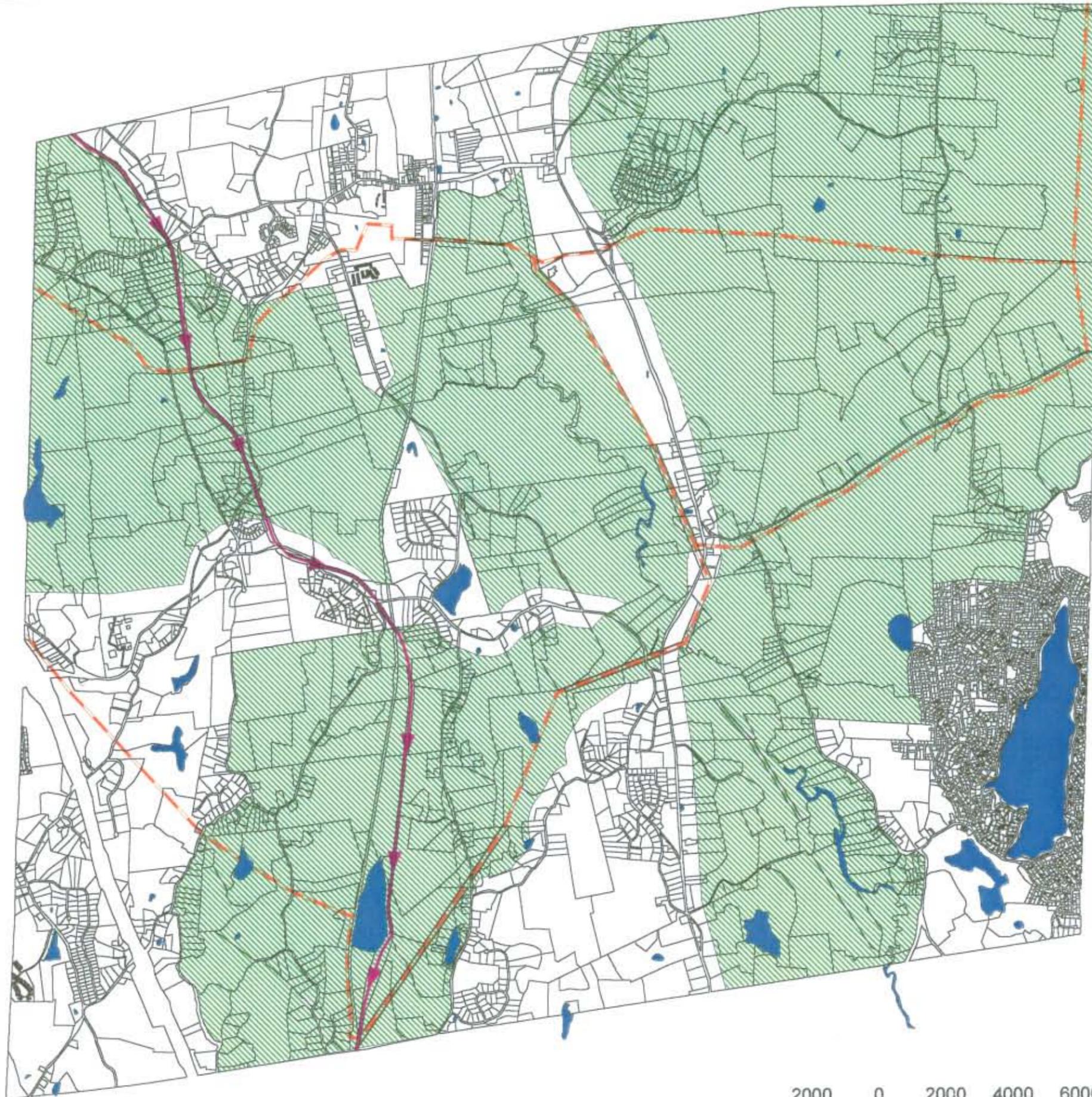


OPEN SPACE PLAN

-  Trail System
-  Rails to Trails
-  Open Development Overlay

Prepared by
Patterson Planning Department

July 10, 2000



2000 0 2000 4000 6000 8000 Feet

TOWN OF PATTERSON

MASTER PLAN

MAP "G.1"



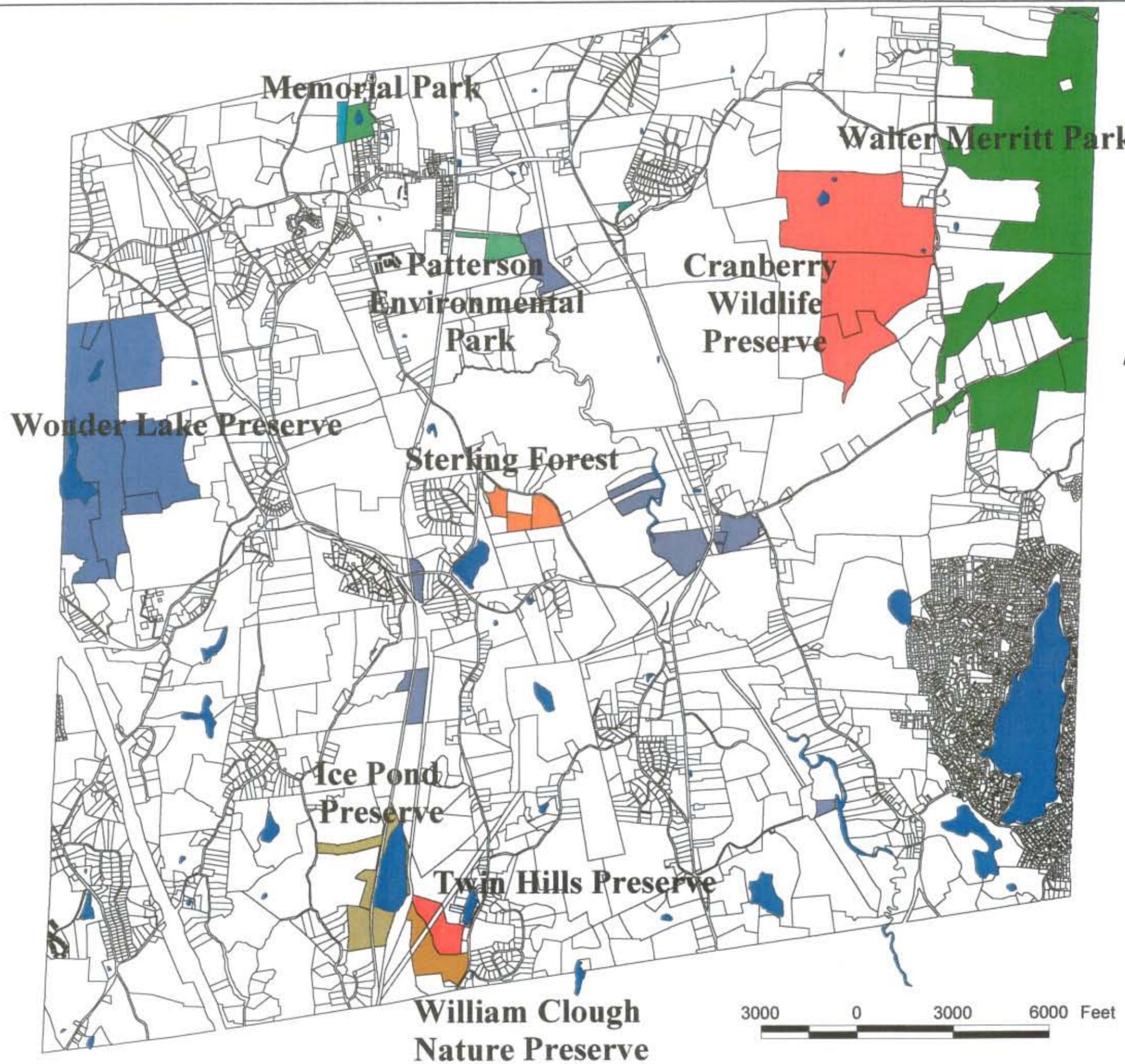
Recreation/Open Space Lands

Reclands.shp

-  Cranberry Wildlife
-  Environmental Park
-  Ice Pond Preserve
-  Memorial Park
-  Memorial Park/TP
-  Putnam County Lands
-  Sterling Farms
-  Town of Patterson
-  Twin Hills Preserve
-  Walter Merritt Park
-  William Clough
-  Wonder Lake Preserve

Prepared by
Patterson Planning Department

August 18, 2000



8.0 LAND USE PLAN

8.1 Introduction

The Land Use Plan is a guide for sound land use policies for the future development of the Town of Patterson. It attempts to provide for a balanced and orderly pattern of use, consistent with planning policies, recognizing existing conditions as well as future Town needs and community character issues.

The Land Use Plan not only aids in determining the location and density of future development but also determines the underlying philosophy for development of the Town. The type of Town the residents wish to live in, be it rural, exurban, or suburban is determined by the Land Use Plan. Development of a Land Use Plan should consider four important elements. They are:

- a. The type of Town the residents desire to reside in;
- b. The ability of the area to support the type and amount of growth desired by the community;
- c. The impacts associated with the siting of development and/or the differing types of development on the environment;
- d. The fiscal impacts of development on municipal services.

In 1991 the Patterson Planning Board and the Environmental Law Foundation conducted a Community Survey concerning issues related to recreation, open space, planning and zoning. The survey was sent to all non-commercial properties/households in the Town of Patterson. The results of the 1991 survey conducted by the Planning Board and the Environmental Law Foundation produced a number of recommendations which were used in determining the development policies of the Land Use Plan.

The type of development that respondents favored the most in Patterson, and which is currently most prevalent in the Town, is single-family homes on large lots. In addition, respondents also indicated, although to a lesser degree, that they favored the following types of development as well: single family homes on small lots, houses clustered around common parklands, professional offices, commercial and industrial development and regional, small and neighborhood shopping centers.

Residents that returned surveys generally opposed multi-family housing developments including townhouses, two family homes and apartments, and large mixed use developments.

Although respondents didn't appear eager to bear the financial burden of addressing the town's problems, nearly half of the respondents (46%), however, indicated that they would support greater density of development in designated areas of the Town in order to minimize the impact of development on open space and rural land.

A large majority of the respondents to the survey (69.6%) indicated that the Town should protect and preserve land as open space, and have a single Town Center (59.1%).

When asked what type of Town they would like to move to more than two-thirds (66.1%) of the respondents indicated they would move to a rural or semi-rural area. This response indicates the type of Town respondents would like to live in the future, i.e. that a majority of the respondents would prefer to see Patterson stay as a rural community. However, overwhelmingly, respondents indicated an unwillingness to pay for the acquisition of open space to accomplish this purpose.

Commercial development in the 1991 Community Survey was generally supported by the respondents. Of the types of development, retail was most favored followed by offices and light manufacturing. Least favored was large industrial development. It is interesting to note that in the Community survey results, services rated as deficient were entertainment/cultural facilities, structured recreational facilities, local job opportunities, health care facilities. Examining the first two items listed as deficient would indicate a need for the Town to promote new commercial recreational opportunities.

8.2 Environmental Considerations

8.21 Geology

The ability of the land to support differing types of land use is often determined by the geological characteristics of the area. The type, location and extent of bedrock will influence infrastructure development, groundwater yields and waste disposal.

Patterson's geology can be broadly classified into two groups, consolidated and unconsolidated deposits; the distinction is important due to the characteristics of each group.

The consolidated deposits or subsurface bedrock can be subdivided further into two formations, the Hudson Highlands and the Manhattan Prong. The Hudson Highlands, originating in the Precambrian Age, is the oldest rock in Putnam County and has been dated to 1.5 billion years. The predominant complexes are granite-gneiss which are arranged in layers or speckles of light and dark minerals. This granite-gneiss complex is very resistant to weathering which is reflected in the rugged topography and higher altitude in areas underlain by this complex. The Manhattan Prong is comprised of seven complexes from which four rock types have been identified in Putnam County. There are two known locations of this formation in the northeast and southeast corners of Putnam county.

The second geological classification comprises unconsolidated deposits which overlay the consolidated deposits. This unconsolidated material is composed of rock fragments deposited by the Pleistocene Era glaciers and water movements from existing streams and rivers. The depth of these deposits range from a few feet to over 300 feet. The unconsolidated deposits are differentiated into two groups based on their location and method of deposition. The first group is till, which is a heterogeneous mixture of rock fragments deposited by glacial ice. In the lowland areas, significant amounts of till can be found resulting from glacial movements. Stratified drift is sand and gravel deposits underlying larger stream valleys, especially in the hillsides of the valleys. This hillside deposition, known as outwash, occurred

from streams formed from melting glaciers. The streams flowed off the glaciers and impacted sand and gravel into the hillsides. The Great Swamp in Patterson, once a glacial lake, has large deposits of stratified drift.

The relief or variability in the earth's surface is a direct result of the glacial movements and geologic formation. The contours or topography is an essential factor in determining, areas suitable or unsuitable for development, potential groundwater deposits, and peaks or ridges that may have scenic qualities.

8.22 Topography and Slopes

Patterson has hilly topography, a characteristic typical of the Hudson Highlands region. There are numerous streams, and a large portion of the lower, central section of the Town is occupied by the Great Swamp, through which flows the Croton River. This river has been dammed several times in the Town of Southeast and further to the south, creating a major source of the water supply for New York City and Westchester County.

The uneven topography in Patterson, which is characterized by knobs or rounded hilltops of varying sizes and steep valley walls, was created by extensive glaciation during the Ice Age and thousands of years of subsequent erosion of the physical land forms. The topography of Patterson is presented on Map H.

The Town of Patterson can be divided into six physiographic areas, based on general topographic conditions. The southwestern corner of the Town, west of the New York, New Haven and Hartford Railroad, is characterized by hilly topography with general elevations ranging between 500 and 750 feet. Several smaller areas within this part of the Town have elevations of between 750 and 1,050 feet. A second physiographic area is located in the south-central portion of the Town, and is bordered by the railroad to the west and the Great Swamp to the east. This area is characterized by steep valley walls and several large hills having elevations of over 850 feet. A third area is relatively level and low-lying, and is located in the northwest corner of the Town, between the New York, New Haven and Hartford Railroad and the New York Central Railroad.

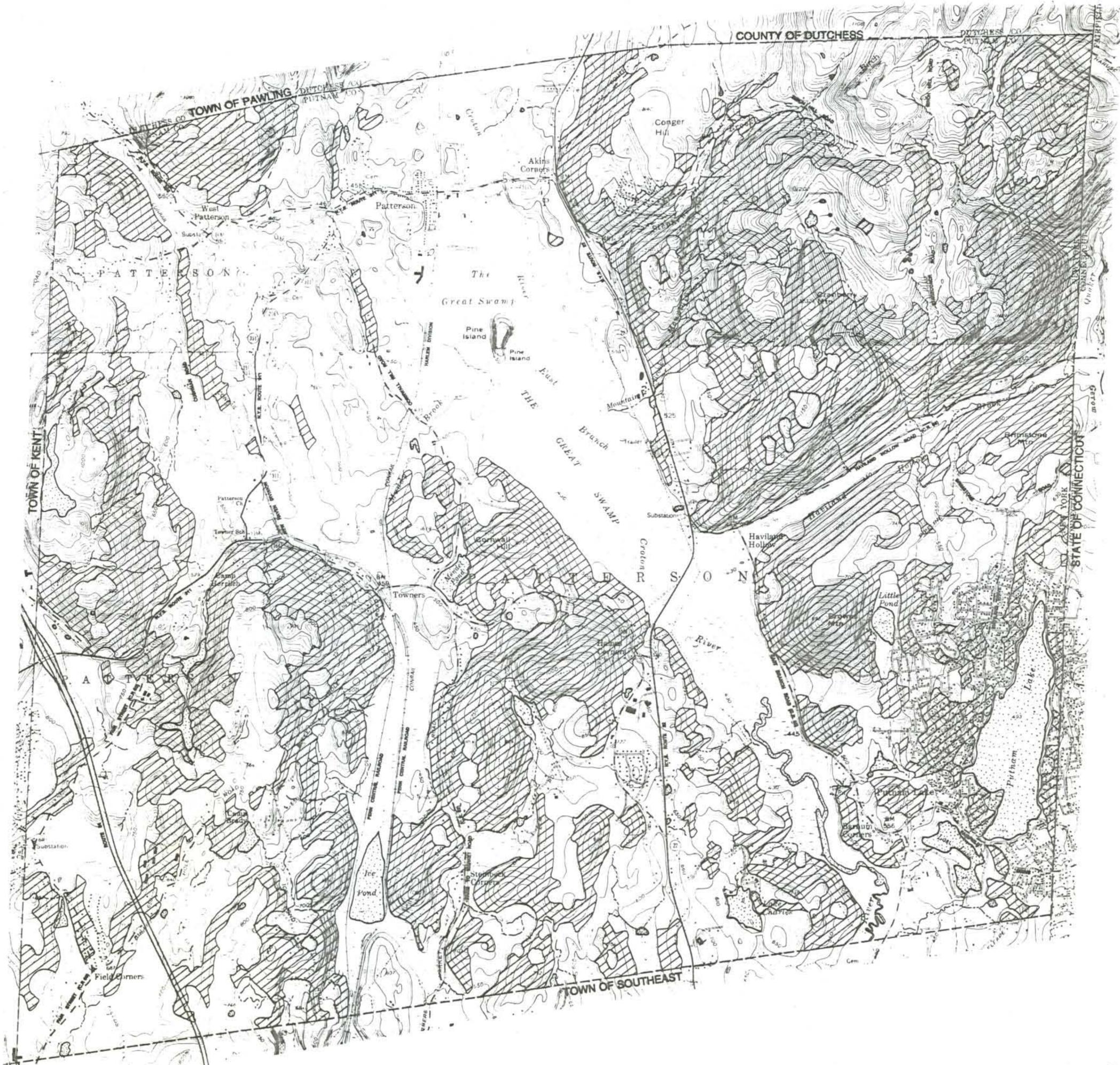
The Town is bisected by the East Branch Croton River and Great Swamp, which is the fourth physiographic area in the Town; this low-lying area separates hilly areas to the west from the hilly areas in the eastern part of the Town. Two hilly areas in the eastern portion of the Town are divided by Quaker Brook, which flows from the east into the Croton River. The area north of Quaker Brook is characterized by very steep slopes to the west and to the south, where the area is bordered by the Croton River and Quaker Brook, respectively. The changes in elevation are most pronounced in this area, where steep ravines have been created by the erosive power of tributary streams, and the elevations, at 1,290 feet, are the highest in the Town. The sixth physiographic area is in the southeastern corner of the Town, bordered by the Croton River to the west and Quaker Brook to the north. Elevations in this area generally range between 450 and 650 feet, with several upland bodies of water (Putnam Lake, Lost Lake, and Little Pond). There are several knobs where elevations are higher, one which is nearly 1,000 feet high, located directly west of Little Pond. There are some steep slopes along the Valley walls of

the Croton River and Quaker Brook, but in general these are less severe than those found in the area to the north.

The topography or terrain of the Town can help guide the development of the Town. Much of the continued attraction of Patterson and towns like it is a result of the attractive views of the wooded hills throughout the Town. Even a limited amount of development in those areas will give the impression of more extensive development than, in fact, has occurred. Future development, if restricted from the hilltops and ridges, will limit the appearance of sprawl. The woodlands and hillsides which constitute a large portion of the Town are not incompatible with development provided that sufficient open space and wooded areas are interspersed throughout and between the developed areas to maintain the open, rural character of the land.

Slopes in excess of 20% in grade generally limit the development of roads, driveways, and parking lots. While it is possible to build homes on slopes up to 30%, it is difficult to build the roads and driveways to service them. Excessive erosion may also result from such development. It should be noted that erosion related to development on slopes in excess of 20% is more a condition of the soils which have developed on those slopes, which tend to be highly erodible, than the slopes themselves. More of a concern is the visual impact and the potential for sewage breakout.

By the same reasoning, slopes between 10% and 19% can be utilized for both residential and commercial development but are more conducive to residential development since commercial development would require extensive regrading of the land to produce more level contours. Slopes from 5% to 9% are generally equally good for both types of development. Slopes under 5% are preferred for commercial development, especially if they exist along State Highways, the areas to which commercial developments should be confined.



GENERAL NOTES:

- The topographic base map shown herein was compiled from the following USGS maps (7.5 Minute Series):
 - "Poughkeeps Quadrange" Dated 1946; Photorevised 1981
 - "Pawling Quadrange" Dated 1946; Photorevised 1971
 - "Brewster Quadrange" Dated 1958; Photorevised 1984
 - "Lake Carmel Quadrange" Dated 1940; Photorevised 1981
- Note: These USGS maps have been photographically reproduced to the scale shown elsewhere on this map.
- The analysis of slopes greater than 15% shown herein was taken from a plan entitled "Critical Natural Resource Area-Special Resource Protection Plan" dated February 1, 1992, prepared by Hudson & Pacific Design, Landscape Architects, Kingston, NY, for the Environmental Law Foundation.

LEGEND:

- SLOPES GREATER THAN 15%
- LAKE, POND OR WATERBODY
- STREAMS

NO.	BY	REVISION	DATE

GAINER-WILBUR CONSULTING ENGINEERS, P.C.

7 Bond Street P.O. Box 417 Pawling, NY 12544 (914) 885-1233 (914) 885-1700 FAX

527 Fallstone Avenue P.O. Box 3226 Northburgh, New York 12558 (914) 362-2430 (914) 362-0417 FAX

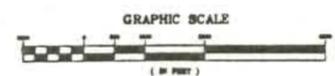
1823 August Drive P.O. Box 2394 S. Baldwinsville, NY 13027 (802) 866-8222 (802) 866-9149 FAX

PROJECT: TOWN OF PATTERSON PUTNAM COUNTY, NEW YORK

MASTER PLAN

SHEET TITLE: TOPOGRAPHY AND SLOPES

DATE: 10/19/98 SCALE: AS SHOWN BY: J/T IN: 2.5' DATE: 10-19-98 DRAWN BY: J/T



8.23 Soils

A thorough knowledge of soils and their suitable uses can directly avoid mismanagement and excessive abuse of the land. Their engineering properties (weight bearing capacities, shrink/swell potentials, etc.), their suitability for groundwater recharge and their ability to filter pollutants all factor into determining the type and density of development they will support.

The movement of water through the soils is a critical factor in the natural filtration of contaminants and for groundwater recharge. Two properties of soils that can be correlated to their cleansing ability are particle size and permeability rate.

Soil permeability rates reflect the rate at which the soils can filter out contaminants. The quicker water flows through the soil, the less time there is for the pollutants to be filtered from the degraded water. Soils with high permeability rates, though important for recharging groundwater supplies, can also readily transmit contaminants with little filtration. Soils with low permeability rates may be unsuitable for septic systems because water percolates too slowly (Dutchess county Department of Planning and EMC, 1985 and HVCEO, 1986).

Soils can be classified by their hydrologic properties into groups. These properties relate to the water infiltration (permeability) and the transmission rate when the soil is thoroughly wetted. The infiltration rate is the rate at which the water enters the soils at the surface and which is controlled by surface conditions. The transmission rate is the rate at which the water moves in the soil. There are four (4) hydrologic soil groups (Great Swamp Water Quality Study RPA 1990 based on SCS soil designations). Their locations within the Town are illustrated on Map I and they are described as follows:

Group A These are a group of soils which have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively-drained sands or gravels and have a high rate of water transmission (greater than 0.03 in/hr). The soils are important groundwater recharge areas. Because of their relatively coarse texture, however, they may have little ability to absorb contaminants and can quickly transmit pollutants to the groundwater. Care must be taken when potential pollution sources are to be located upon these soil types. Those activities which may release pollutants into the ground should be restricted from Group A soils. These activities include those which may release petroleum products into the ground such as construction storage yards, bio-tech facilities, storage facilities for hazardous materials and heavy industrial manufacturing operations.

Group B Soils which have moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission (0.15 - 0.30 in/hr). The soil textures are represented by silt loam or loam. These soils have perhaps the most optimum cleansing capability. They contain many suitable soil types for septic systems (according to SCS property tables). Group B soils are the most suitable soils in Patterson for general development.

<Town of Patterson>

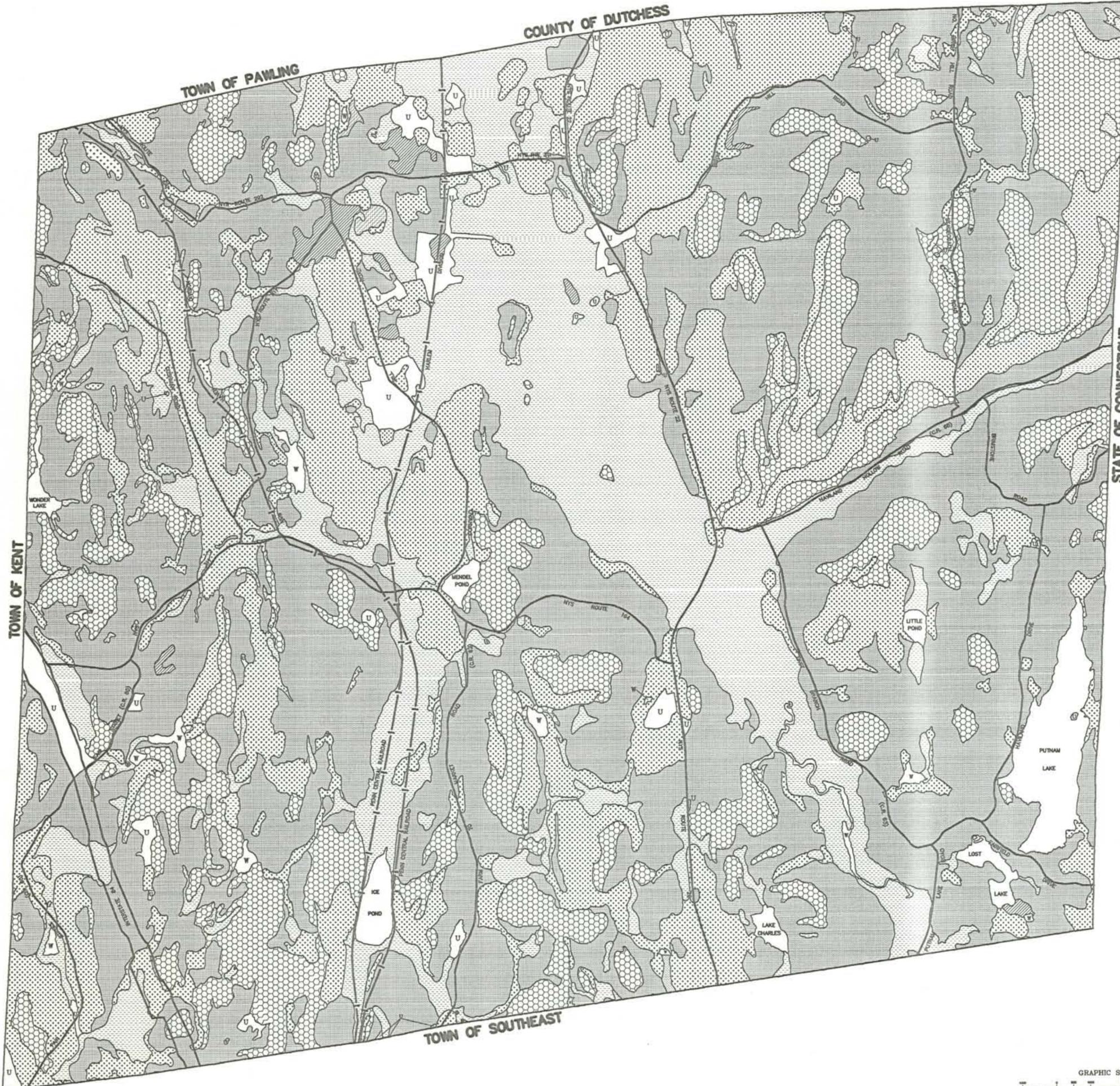
Group C Soils which have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture (sandy clay loam). These soils have a low rate of water transmission (0.05-0.15 in/hr). Group C soils are generally more difficult to site waste disposal systems. These soils are best suited for low-density residential development.

Group D Soils which have a high runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface and shallow soils over a nearly impervious material. These soils have a very low rate of water transmission (0-0.05 in/hr). Group D soils are such that siting of waste disposal systems is virtually impossible. The clay soils with a high swelling potential and generally high water table makes the siting of buildings in these soils extremely difficult. As such development should generally be restricted from these soils.

Each soil is classified within one basic group (i.e., Sun soils are always classified D). When a soil is designated by two (2) letters, such as B/C, the letter B would be used for the drained state (sloping land) and the letter C would be used for the undrained state (flat land).

Patterson has, within its boundaries 60 different varieties of soil types. Each of these soils is given a soil identification number. This number correlates with one specific soil type. Each soil is distinguished in relation to such properties as permeability, erodibility, flooding and ponding, depth to bedrock and hydrologic soil group.

Due to the complex nature of Patterson's soils, it is difficult to make generalizations in regard to soil properties within certain areas of the Town; however some basic observations can be made. The majority of the Patterson soils impose at least moderate restrictions to development. Most areas have a combination of soil characteristics such as stoniness, steep slope, slow permeability and/or seasonal high water table which limit the extent to which the land can be used. All of these characteristics inhibit the function of a septic system, an extremely important fact in a town such as Patterson, which depends on the use of septic systems rather than community sewer systems. The constraints imposed by the soils do not always prevent the use of the land for development, but do require careful consideration in design and layout and density of development. Soils within the Town that are generally unsuitable for development due to poor permeability, ponding, or flooding, are located primarily in low-lying areas such as the Great Swamp, or in areas that are adjacent to bodies of water such as upland ponds. Soils formed by steep slopes or by the presence of bedrock outcroppings are widely dispersed throughout the Town, but are generally found in upland areas and along river and stream valley walls. As noted previously, many of the soils within the Town are characterized by properties which may inhibit the overall development potential of a given site.



GENERAL NOTES:

1. The Hydrologic Soil Groups (H.S.G.) shown hereon are based upon Putnam County soils mapping provided in digital format to the Town by the Putnam County G.I.S. Department.
2. Specific soil types were converted into Hydrologic Soil Groups by Gainer-Wilbur Consulting Engineers, P.C. based upon interpretations found in the Putnam County Soil Survey maintained by the Putnam County Soil and Water Conservation District.
3. Hydrologic Soil Groups are defined (in part) as follows by the U.S.D.A. Soil Conservation Service (S.C.S.):

HYDROLOGIC SOIL GROUPS (H.S.G.)

- H.S.G. "A":** Soils in this category exhibit high infiltration rates even when thoroughly wetted and consist chiefly of deep, well- to excessively drained sands or gravels. These soils have a high transmission rate. [Low Runoff Potential]
- H.S.G. "B":** Soils in this group exhibit moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well- to well-drained soils with moderately fine to moderately coarse textures. These soils have a moderate transmission rate.
- H.S.G. "C":** Soils in this group exhibit slow infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow transmission rate.
- H.S.G. "D":** Soils in this group exhibit very slow infiltration rates when thoroughly wetted and are primarily clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow transmission rate. [High Runoff Potential]
- NOTE:** Two Hydrologic Soil Groups, such as "B/C", indicate the "Drained/Undrained" situation.

LEGEND

- HYDROLOGIC SOIL GROUP DESIGNATIONS**
- H.S.G. "A"
 - H.S.G. "B"
 - H.S.G. "C"
 - H.S.G. "D"
 - H.S.G. "B/C"
 - UNDESIGNATED SOILS
 - BODY OF WATER

NO.	BY	REVISION	DATE

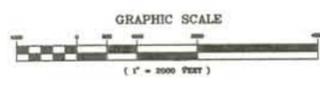
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**TOWN OF PATTERSON
PUTNAM COUNTY, NEW YORK
MASTER PLAN**

HYDROLOGIC SOIL GROUPS

DATE	SCALE	DRAWN BY	CHECKED BY	PROJECT NO.	DWG. NO.
2/22/95	AS SHOWN	TRM	RJS	32-9513	MAP 11



FILE LOCATION: C:\MAPS\SOILS

8.24 Hydrogeology

A review of the hydrogeological resources indicates the extent and capacity of the groundwater supply throughout the Town. In general, the Town is located in an area where the bedrock consists primarily of metamorphic rock with some areas of carbonate rock. Metamorphic rock contains groundwater only where it is highly fractured. Carbonate rock constitutes the primary water-bearing rock stratum in the Town. Water can be drawn on a consistent, high yield basis from only one area of the Town. This area, composed of carbonate rock, is located between two faults running from Ice Pond to Route 164.

The remainder of the carbonate rock areas can be expected to yield a moderate to good supply of water. This includes the area of Town known as the Great Swamp. These areas, along with fractured metamorphic bedrock which can provide a moderate to good supply of groundwater, are shown on Map J.

The northwestern portion of the Town consists of metamorphic bedrock with an underlying stratum of carbonate bedrock. This area can yield a moderate to good supply of water, but the groundwater lies at least 300 to 1,000 feet below the surface.

The northeastern part of the Town consists of metamorphic bedrock which is fractured and therefore contains water, but the water supply in this area is prone to rapid fluctuation. This is due to the area's high elevation, rugged topography and interconnected faults. New wells have been known to draw water away from existing wells in this area. The potential yield of groundwater is therefore limited for this area.

The remainder of the Town consists of metamorphic bedrock which has a rather low to moderate potential for groundwater. Groundwater in this type of bedrock is discontinuous, and recharge is limited to areas which contain fractures. As a result, water can be found in areas of fractured bedrock in a limited supply, whereas in areas which do not contain bedrock fractures, groundwater cannot be found at all.

Of particular concern are areas of bedrock which may contain iron sulphide deposits. This is because iron sulphide deposits may be associated with arsenic. In some areas of Putnam County residents have been poisoned by water which contained arsenic. Water drawn from bedrock wells in these areas should be tested to ensure that it is potable.

Groundwater quality problems can render individual and community water supplies unusable for indefinite periods. The slow movement- groundwater moves at rates of just a few feet to a inches per day- and minimal attenuation of contaminants in groundwater, the impracticality of remediation, and the high cost of water treatment make prevention of contamination the only really effective means of protecting groundwater quality.

Certain land uses can often change the quality and quantity of ground water reserves. High density development creates impervious area that reduces the amount of water available to be mined from the aquifers. High density development may also consume more water than the aquifer's rate of recharge

and deplete the resource. In addition, high density development can release into the groundwater more pollutants than may be safely diluted or filtered prior to their reaching the aquifer. Because subsurficial water bodies exist as mixtures of rock and water and soil and water, a decrease in the proportion of water can bring about an adverse change in the character of the ground water reserve. One of the main sources of impacts is nitrate-nitrogen contamination of groundwater caused by subsurface sewage disposal systems. The impacts from SSDS are the most limiting in terms of permissible residential densities. Nitrate-nitrogen is known to be the most limiting contaminant in residential sewage. Nitrate-nitrogen is discharged from septic tanks into the leach field in concentrations ranging from 30 to 70 mg/l on the average. About one-half of the nitrate-nitrogen is detoxified in the soil above the water table. The remaining nitrate-nitrogen enters the water table. Contaminants from household chemicals may also leach into the groundwater through residential sewage disposal systems.

Although good amounts of water can be drawn in some parts of the Town, on the whole, development should be limited to uses which do not require large amounts of water. Appropriate densities for residential and commercial development should be based in part on the long-term yield of groundwater and the average amount of water used by a residence. Commercial development will generally create more impervious surface, limiting the amount of groundwater recharge in the immediate area. Commercial development also generally consumes more groundwater. Commercial development should be limited to areas where water withdrawal can be sustained on a consistent basis. Those commercial uses which demand excessive water withdrawal should be prohibited.

MAP J.
GROUNDWATER POTENTIAL
TOWN OF PATTERSON



-  HIGH
-  MODERATE, SHALLOW AQUIFER
-  MODERATE, DEEP AQUIFER
-  LOW, FLUCTUATING WATER TABLE
-  LOW
-  IRON SULPHIDE DEPOSITS

Study by: Donald Groff, Fred Anders & Paul Jaehrig
 Source: Donald Groff, Personal Communication

Prepared By:
 Manuel S. Emanuel Associates, Inc.
 Community Planning and Development Consultants
 March, 1990



8.25 Wetlands

Wetlands are classified here as those generally very flat areas overlain with organic soils and supporting aquatic or semiaquatic vegetation. The organic soil may consist of silts and clays, or sand and gravel soils, as in the case of much of the Great Swamp. The Town's wetland systems play a unique and vital role. Benefits provided by the wetlands include wildlife habitat, groundwater recharge, stormwater management and the improvement of water quality. Wetlands are subject to periodic flooding and therefore act as natural retention basins for the temporary storage of floodwaters. Maintaining a minimum of 10 per cent of a watershed as wetlands will maximize sediment retention from stormwater. (RPA, Great Swamp Water Quality Study). However the ability of wetlands to provide their benefits is limited and great care should be given not to overtax these important resources.

Wetland areas of 12.4 acres or greater are mapped by the New York Department of Environmental Conservation, and are protected under State environmental quality laws and regulations. Smaller areas can only be protected by specific Town laws. Wetlands are almost entirely unsuited to development, as any alteration can damage the sensitive ecology of the area. Similarly, floodplains, which often coincide with wetlands, should be protected. To enhance the process on a local level, in 1989 the Patterson Town Board adopted a local wetlands law which provides for jurisdiction of wetlands of two acres or greater, as well as streams and other water bodies.

The Great Swamp is a regulated wetland (DP-22) by both the state and the Town, and is located in the central portion of Patterson. It extends on either side of the East Branch Croton River from the northern boundary of the Town to the southeast corner of the Town. The Great Swamp and surrounding floodplains encompass approximately 3.5 square miles. Above the bridge at Route 311 in the Hamlet, it receives the drainage from an area of 17 square miles. Almost the entire Town of Patterson (32 square miles) drains into the Great Swamp. It has a drop in elevation of nine (9) feet in 14,000 feet from Route 311 to the crossing at Route 22 and another six (6) feet in 18,000 feet from Route 22 to the crossing at Doansburg Road in Southeast. Not only does the Swamp and floodplain act as an enormous retention basin, but it acts as a huge groundwater recharge area. The Regional Plan Association of New York has undertaken an extensive study of the Great Swamp and released its findings in the Great Swamp Conservation Plan, 1991. The majority of the Great Swamp lies above a carbonate bedrock formation. The natural weathering of the bedrock releases calcium and magnesium and in the process raises the pH of the soils and water. This is important because, among other things, it may 1) provide soils with more cation exchange sites with which to adsorb contaminants; 2) immobilize iron and aluminum; 3) contribute calcium to the water column which may precipitate phosphorous (although it may release phosphorous adsorbed to iron and aluminum compounds); and 4) create a more nutrient-rich environment capable of supporting a richer diversity of plant species within each of the wetland types (Brady, 1984.) (RPA Great Swamp Water Quality Study - April 1990 pg 22)

At least thirteen other state wetlands exist in the Town. Three small wetlands are located near I-84 in the western portion of the Town. Three wetlands are located upstream of Ice Pond in the south-central portion of the Town, two of which are in upland areas. Three other state wetlands are located in this general area, and these drain to the south. Little Pond, in the southeast corner of the Town, has portions of a state wetland on its northern and southern shore. Quaker Brook, to the east, is within a state

wetland, and a tributary stream to the south (northeast of Little Pond) has a state wetland at its headwaters. Another upland wetland on the eastern boundary of the Town drains into Putnam Lake to the south.

In addition to the numerous state-regulated wetlands, the Town of Patterson has designated over 100 local wetland areas, which are protected under the local wetlands law. Generally, these wetlands are poorly drained areas too small to be regulated by the state, and are located throughout upland areas and also adjacent to Department of Environmental Conservation wetlands.

It must be stressed that wetlands within the Great Swamp watershed operate as a system, each performing valuable functions at various times throughout the annual hydrologic cycle. The diversity of hydrologic conditions, vegetation communities and hydric soils that exists favors valuable water quality functioning. Therefore, if a wetland or even a part of a wetland is altered, it is likely to have a direct effect on water quality.....The relative value of each individual wetland area for performing water quality functions must be judged in light of the physical characteristics it possesses and with respect to its position within the watershed. (RPA Great Swamp Water Quality Study - pg 27)

Wetland areas are created over long periods of time in response to specific ecological conditions. Any change in those conditions may alter the wetland or its related functions, and or have an adverse effect on downstream wetlands. The related functions and relative value of a wetland is determined by biophysical elements such as the position of the wetland in the landscape; the underlying geology; the hydrology of the site; and the substrate and vegetation of the wetland.

8.26 Wetland Indexing

Wetlands provide a number of benefits, but not all wetlands may provide the same "level of benefits" to the community. The ability of wetlands to provide these benefits is a result of type of soils, type of vegetation, topography, and location in the landscape. Size is not a critical factor in the benefits provided by a wetland. Wetlands five thousand square feet or smaller may provide a very high "level of benefits" to the community because of its location in the landscape. Wetland Indexing would assign a value to the benefit provided and to the "level of the benefit" provided by a particular wetland. The indexing of wetlands has several important advantages in assigning values to wetlands. These included:

- a. Balancing losses and providing for restoration of functional values. In particular indexing would result in less costly and less extensive mitigation requirements, particularly when development affects wetlands that are dysfunctional or that provide few, if any, significant values.
- b. Evaluating the benefits of a series of wetlands. This would allow a comprehensive strategy to be developed for the protection of a series of inter-linking wetlands which operate as a system.
- c. Identifying high value wetlands for protection. Low value wetlands, by definition, have little value, and impacts to them can be readily compensated for or mitigated.

- d. Providing landowners, government and the public with clear criteria that identify the most important wetlands.
- e. Providing flexibility in determining mitigation options.
- f. Aid in determining the level of function for a wetland system in wetland creation and/or restoration.

It is recommended that the Town of Patterson develop a Wetland Indexing program in conjunction with changes necessary to adequately protect Patterson's wetland ecosystems.

8.27 Critical Environmental Areas

The Great Swamp in the Towns of Patterson and Southeast is the first area in Putnam County to be designated as a Critical Environmental Area (CEA). The Great Swamp, at 4,000+ acres, is the second largest wetland in New York State, and is identified as DP-22 on the Freshwater Wetlands Maps prepared by the New York Department of Environmental Conservation. The Swamp is listed as a Class 1 wetland by the DEC, which is the highest rating under the state's classification system. The Great Swamp is recognized as a resource of regional significance based on its ecological, hydrological, recreational, and open space qualities. The Great Swamp is one of the few major open spaces left in the rapidly developing Route 22 corridor of eastern Putnam and Dutchess Counties.

In the past activities in or contiguous to a CEA were considered a Type I action under SEQRA. This meant that the CEA designation ensured that proposed projects which may affect the Great Swamp would be given greater scrutiny under the requirements of the State Environmental Quality Review Act (SEQR), so that potential impacts and mitigation measures can be identified. In the 1995 changes to SEQRA, the NYS Department of Conservation eliminated critical environmental areas from the Type I list. However the Town has the ability to adopt their own SEQRA regulations which could then place Critical Environmental Areas back on the Type I list for projects located in Patterson.

There are many sensitive areas within the Town of Patterson which may qualify for, and benefit from a local CEA designation. These areas include local wetlands, state wetlands not included in the Great Swamp designation, areas of steep slopes, bodies of water such as Putnam Lake, town parks, and possible historic districts or sites. In order to further protect these valuable resources in the Town, the areas identified above should be studied for possible designation as Critical Environmental Areas.

8.28 Stormwater and Watershed Management

The largest offsite impact, on a consistent basis, is related to the stormwater generated by new development. This impact is generally greater with commercial development than with residential development due to the large amount of impervious surface created by the building and parking areas and the associated increase in traffic. The quality of the surficial waters in any given watershed can be directly correlated to the quality and quantity of stormwater discharges within that watershed and/or the amount of impervious surface within that watershed. Urbanization dramatically increases phosphorous

loading, by as much as 4.7 kg/ha/yr and can double nitrogen loading as compared with a forested watershed. Agricultural activities can also have a significant effect on nitrogen loading.

In order to maintain the existing surface water quality, new infrastructure dedicated to the treatment of stormwater must be created for all new development. Under the current practice, each new development project creates its own separate stormwater management system, which generally includes as the primary method for treating stormwater a detention or extended detention basin. This method of handling stormwater quantity and quality issues is both costly and highly inefficient. In addition the continued maintenance of these small detention areas has also proven to be a problem, as once the project has been completed the responsibility of maintenance falls to the individual property owner or a homeowners association.

In order to provide a more efficient system of stormwater management, protection of water resources can best be achieved through a comprehensive stormwater management program developed for the entire sub-watershed basin. Such a program would seek to analyze the total potential impacts associated with stormwater concerns, and provide a comprehensive plan for the mitigation of those impacts. In addition consolidation of stormwater treatment facilities will allow for the enhanced treatment of stormwater than could be achieved on an individual site by site basis. Stormwater management is at its best when stormwater facilities provide multiple benefits. These benefits include flood control, water quality protection, open space protection, passive and active recreation, and visual enhancement. A watershed-wide approach to stormwater management should include the following goals:

1. minimize pollutant loading
2. protect the natural filters for water quality
3. control the location and type of development within any particular the watershed so as to minimize impacts.
4. develop stormwater control structures which will manage the stormwater - taking into consideration the watershed as a whole and its maximum development potential. Stormwater control structures may include retention ponds and created wetlands used to improve water quality.
5. develop stormwater control structures that provide additional benefits to the community such as enhancements to the viewshed or passive recreation.

GENERAL NOTES:

BASE MAP PROVIDED BY PUTNAM COUNTY G.L.S. DEPARTMENT

- The wetlands shown on this map were taken from the following sources:
 NYSDEC REGULATED WETLANDS: Information shown hereon was taken from digital data provided under Agreement with the New York State Department of Environmental Conservation (NYSDEC). As a part of the Agreement with NYSDEC, the notes entitled "NYSDEC Required Notes", shown elsewhere on this map, have been added to this map.
 TOWN REGULATED WETLANDS: Information shown hereon was taken from Putnam County Sale mapping provided to the Town by the Putnam County G.L.S. Department in digital format.

- It should be noted that the wetland boundaries shown on this map are for reference only, and are to be utilized for planning purposes only. This map does not negate the need to conduct a site specific wetland survey to determine if wetlands are present, the extent/boundary of any wetlands or control areas, and under whose jurisdiction they fall.
- Refer to Section 154-15 "Wetlands And Watercourses" of the Putnam Code for definitions of Wetlands, Watercourses and Control Areas.
- NYSDEC designated wetlands and their control areas are regulated pursuant to Article 24 ENYCRS 662, 663 (Freshwater Wetlands). NYSDEC protected streams are regulated pursuant to Article 15, Title 5 ENYCRS 608 (Protection of Waters).
- Control Areas surrounding regulated wetlands and watercourses are not shown on this map.

NOTE:
 The following notes have been added to this map as part of an Agreement entered into between Gainer-Wilbur Consulting Engineers, P.C. and the New York State Department of Environmental Conservation to obtain the release of data presented hereon:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Agreement for the Release of Data

The Applicant requesting access to the New York State Department of Environmental Conservation freshwater wetlands digital data hereby agrees to abide by the terms specified below. This agreement is necessary because freshwater wetlands are subject to amendment; after amendment, digital data previously released by the Department of Environmental Conservation are obsolete. Applicant agrees to the following:

- The Applicant understands that this agreement and the written documentation that accompanies the digital freshwater wetlands data are an integral part of the data. Failure to use this written material in conjunction with the digital data constitutes misuse of the data.
- The Applicant understands that digital freshwater wetlands data provided under this agreement are not a legal substitute for the official Regulatory Freshwater Wetlands maps maintained by the Department of Environmental Conservation pursuant to Environmental Conservation Law 124-0301. Should a discrepancy exist between the digital data and the official maps, the official maps are the correct source of information.
- The Applicant understands that the official regulatory freshwater wetlands maps may be amended from time to time and that the digital data provided under this agreement may therefore become obsolete. Digital data may also be altered independently of official map amendments in order to make improvements. These digital data cannot be relied on as a definitive statement of the location of freshwater wetlands. Wetland boundaries are subject to delineation by Department of Environmental Conservation regional personnel.
- The Applicant understands that the borders of wetlands shown on both the official maps and the digital data are approximate at a scale of 1:24000. The Applicant also understands that traditional cartography or digital comparison of the wetland maps to mapped information that is collected and digitized at a larger scale than 1:24000 is not cartographically acceptable and is subject to error.
- The Applicant understands that, because digital wetlands data are not official regulatory maps and are subject to change, it is inadvisable to make further distributions of the data. All requests for the digital wetlands data should be referred to the Department of Environmental Conservation.

NO.	BY	REVISION	DATE

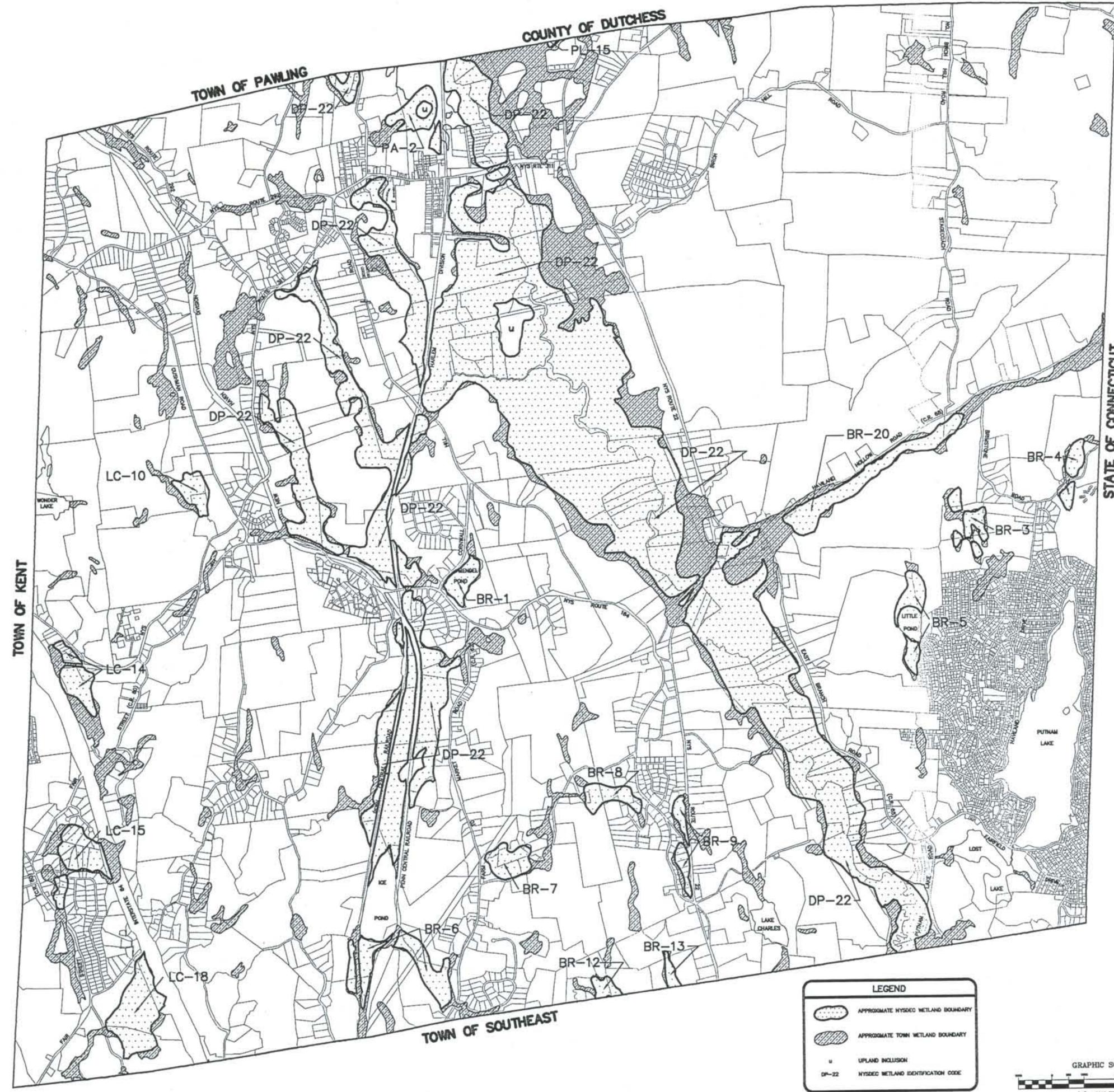
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**TOWN OF PATTERSON
 PUTNAM COUNTY, NEW YORK**

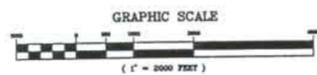
**MASTER PLAN
 WETLANDS**

DATE: 12/22/95 AS SHOWN
 SCALE: AS SHOWN
 DRAWN BY: TPA
 CHECKED BY: TPA
 PLOT NO.: 32-9513
 SHEET NO.: MAP 2



LEGEND

- APPROXIMATE NYSDEC WETLAND BOUNDARY
- APPROXIMATE TOWN WETLAND BOUNDARY
- UPLAND INCLUSION
- DP-22 NYSDEC WETLAND IDENTIFICATION CODE



DATE LOCATED: 12/14/95 BY: TPA

8.29 Watershed Basins in Patterson

The entire area of Patterson can be divided between four reservoir watersheds in the Croton Reservoir system; the East Branch Reservoir, the Middle Branch Reservoir, the Bog Brook Reservoir and the Diverting Reservoir. The majority of Patterson (91%) falls within the East Branch Reservoir watershed with 19,041 acres followed by the Middle Branch at 1,195 acres, the Bog Brook with 522 acres and the Diverting at 140 acres. Table VIII lists the reservoir watershed and their sub-watersheds that are located in Patterson.

In 1999 NYC Department of Environmental Protection (NYC DEP) released the Phase II Reservoir Reports for Total Maximum Daily Loads (TMDLs) for phosphorus, phosphorus being the least available nutrient utilized in the growth of algae, and therefore the primary nutrient of concern. The TMDLs are a “tool for assessing compliance with water quality standards and integrating the management of point and nonpoint sources of pollution using a watershed approach.” The TMDLs provide estimates of the contributions of phosphorus from the various point and non-point sources within a reservoir basin. The TMDLs indicated that significant reductions in phosphorus from non-point sources would be required in order for the East Branch Reservoir, the Middle Branch Reservoir, and the Diverting Reservoir to meet the TMDL guidance value for phosphorus loading to the reservoir. Two separate approaches will be necessary for Patterson to achieve the goals established by the TMDLs. First Patterson must established adequate regulatory controls to ensure that future development and activities conducted by individual property owners will not cause a further decline the water quality. Second Patterson must develop a plan to reduce the existing nutrient loading to the watershed from the previously developed areas.

**TABLE VIII
CROTON WATERSHED
RESERVOIR BASINS**

Reservoir Watershed and SubBasin Name	Total Watershed Area (Acres)	Area of Watershed in Patterson Acres	% of Basin in Patterson
Bog Brook Reservoir	2364.97	522.26	22.1%
Bog Brook	2364.97	522.26	22.1%
Diverting Reservoir	4802.22	140.26	2.9%
Tonetta Brook	2389.04	140.26	6%
Diverting Reservoir	2413.18	0	0
East Branch Reservoir	48047.69	19041.2	39.6%
Brady Brook	5141.15	13.51	0.3%
Upper East Branch	2276.34		0
East Branch Croton River	14147.88	6708.42	47.4%
Quaker Brook	4423.34	1173.92	26.5%
Muddy Brook	9122.39	6726.3	73.7%
Haviland Hollow Brook	3450.53	2041.88	59.1%
Putnam Lake	1882.85	978.70	51.9%
Ice Pond	2180.81	1398.47	64%
East Branch Reservoir	4133.39	0	0
Peach Lake	1289.01	0	0
Middle Branch Reservoir	13389.87	1194.92	8.9%
Stump Pond Stream	3574.75	0	0
Lake Dutchess	1416.07	0	0
Lake Carmel	3303.97	34.99	1%
Middle Branch Reservoir	5095.08	1159.93	8.7%

8.3 Land Use and Vacant Land

Patterson's commercial development has concentrated in four locations. The first is the Route 22 corridor which crosses eastern Putnam from south to north, and is rapidly becoming a primary commercial center for the County. In particular, the southern section of the corridor in Patterson has seen moderate development in recent years. This logically follows the progression of such development along Route 22 in Southeast, capitalizing on easy access to both regional freeways in the area, Interstate 84 and Interstate 684. The second area of non-residential concentration centers on the Hamlet of Patterson, capitalizing on its traditional role as commercial center of the immediate region. The third area of non-residential concentration is on Fair Street in the southwestern corner of the Town. This area is convenient to the Interstate interchange in Patterson. The fourth area of non-residential concentration is in the Putnam Lake area which possesses some varied businesses ranging in use from retail to light industrial. These activities are located mainly along Fairfield Drive extending from Haviland Drive to the New York-Connecticut border. The remainder of the commerce in Putnam Lake is situated along Haviland Drive directly north of Fairfield Drive.

Patterson growth however continues to be predominately residential growth. Four reasons account for this fact. First, the proximity of the Town to major employment areas throughout the New York region offers flexibility to residents. Secondly, the transportation system exists to make those jobs accessible. Third, and very possibly most important reason, is that the homes in Patterson are more affordable than those in Westchester or Fairfield Counties. And last, Westchester presently has a large amount of commercial space already build which is vacant. Similarly, the Town of Southeast presently has a large amount of commercial space ready to be built.

New residential development is concentrating on the western side of the Town. This is probably a result of better access to the Interstate 84 interchanges in Patterson and Southeast, and the fact that the eastern side of the Town is primarily either the densely developed Putnam Lake community or recreational and reserve uses such as Birch Hill ski area, Putnam County's Walter Merrit Park and the New York State Department of Environmental Conservation property.

Important to the understanding of land development is a study of the amounts and potential of the vacant land in the Town. For the purpose of determining the maximum amount of residential development that is available for development, vacant land was defined as all lots that are undeveloped or not developed to the maximum potential under existing zoning. There is a total of approximately 17,905 acres within the R-80 and R-40 Districts. Of that land, there are approximately 12,167 acres that are undeveloped or under-developed. Within the lands that are undeveloped or under-developed there exists approximately 1,883 acres of wetlands regulated by either New York State or the Town of Patterson. A further reduction in the amount of vacant land was taken to account for land lost as a result of construction of the infrastructure needed to service new residential subdivisions. The limitations placed on the ability of the land to sustain new development from steep slopes and/or poor soil conditions was not considered in the analysis. This is because of the difficulty in determining the extent to which these limitations may actually effect a subdivision as to some degree they can be compensated for within the design of the subdivision, and must therefore be appraised on a lot by lot basis. Table VIII

indicates for the R-80 and R-40 Districts the vacant land and the reductions for regulated wetlands and infrastructure and the resultant "net" vacant land available for development.

Determining the amount of undeveloped land available for new housing in the "RPL-5" zoning district required special consideration as there is no present minimum lot area requirement, rather the requirement is only that a property owner have five lots that have continuous frontage on a street shown on the Map of Putnam Lake. There are currently 672 vacant parcels in the "RPL-5" zoning district, however only 203 lots equal or exceed 10,000 square feet and only 55 parcels exist under single ownership and would meet the current Putnam County Health Department requirement for minimum separation distances which dictate a minimum lot area of 20,000 square feet. However should two or more properties currently owned by different owners be combined the potential number of lots that could be developed could more than double.

Table IX
Inventory of Residential Vacant Land, Committed Land and Constraints

Zone	Total Area (acres)	Vacant (acres)	Regulated Wetlands ¹ (acres)	Updated Vacant (acres)	Reduction for Infrastructure Improvements	Total Area Available for Future Residential Development (acres)
R-40	7,077	5539	425	5114	15%	4347
R-80	<u>10,829</u>	<u>6628</u>	<u>1459</u>	<u>5169</u>	<u>20%</u>	<u>4135</u>
TOTAL	17906	12167	1884	10283		8482

¹ Wetlands two acres and larger.

Table X
Inventory of Non-Residential Vacant Land, Committed Land and Constraints

Zone	Total Area (acres)	Vacant (acres)	Regulated Wetlands ¹ (acres)	Total Area Available for Future Residential Development (acres)
NS-1 ¹	201	152	25	127
NS-2	24	0	0	0
R-0	481	386	0	386
I	1015	443	43	400
C-R	309	n/a	n/a	n/a

¹ The majority of the land suitable for future development in the NS-1 District lies along the NYS Route 22 corridor.

8.4 The Real Cost of Development

Recently several communities were studied to determine the impact of the differing types of development had on municipal budgets. The cost of providing services for residential, commercial, and open space was compared to the revenue they generated. The results of those studies are of great interest in determining future land use policies. An economic balance of land uses is important to the fiscal well-being of a community and it is important to understand what impact a land use policy will have on Town, County, or school budgets. Table X summarizes the results of those studies.

TABLE XI
Cost of Development
Revenue/expenditure Ratio in Dollars

	Residential	Commercial	Open Space
Scenic Hudson			
Amenia	1/1.23	1/0.25	1/0.17
Fishkill	1/1.23	1/0.31	1/0.74
RedHook	1/1.11	1/0.20	1/0.20
American Farmland Trust			
Beekman	1/1.12	1/0.18	1/0.48
Northeast	1/1.36	1/0.29	1/0.21
Average	1/1.21	1/0.25	1/0.36

American Farmland Trust, Beekman/Northeast

1988 revenues and expenditures for the Towns of Beekman and Northeast were broken down into various categories and assigned to three land use categories: residential, commercial, and open space. The expenditures were then compared to the revenues received for each separate land use. In examining these ratios in terms of dollars received versus dollars spent, it was determined that residential development demands more services than it contributes in revenues.

Scenic Hudson, Amenia/Fishkill/RedHook

In 1989 a study similar to the American Farmland Trust study in Dutchess County, was undertaken by Scenic Hudson, Inc.". In this study, the fiscal impact of development on three Dutchess County towns, representing different types and rates of growth, was analyzed to determine the effect of residential, industrial/commercial and open space (including agricultural) land uses on a community's tax base.

In all cases, for every dollar of taxes generated by the residential land use category, the cost of servicing that land use was much more than a dollar. By contrast, both the open space and industrial/commercial land uses cost much less than a dollar to service for every dollar in taxes generated."

American Farmland Trust, Loudoun County

The objective of this study was to estimate the net public costs of new residential development in Loudoun County, Virginia and to determine if these costs varied with different densities - from one unit per five acres to 4.5 units per acre. Results of this study indicated that generally residential development costs more in municipal services than the revenue it contributes. It was also determined from models developed that the lower the density of development the higher the municipal costs. However two components used in arriving at this conclusion need to be considered. First it was assumed that the cost of water and sewer would be more expensive in the lower density areas. This was due to the fact that areas that would support high density development already had public sewer and water. Should that not be the case then the cost for sewer and water would be closer though the lower density would still cost slightly more. The second factor is the cost of education. It was generally assumed that the lower more rural densities would be served by smaller schools. Smaller schools are generally less efficient and have a higher cost per pupil than due larger schools. Should a given geographic area being studied be serviced by the same school system then again this cost would be the same for the different types of development. The exception is school transportation which would cost more for the lower density areas.

8.5 Criteria and Preliminary Framework for Land Use Plan

The Land Use Plan will form a basic part of the Town's proposed comprehensive plan in that it will represent the future land use of the Town. It provides for a balanced and orderly pattern of use, consistent with planning policies, assumptions and criteria, recognizing existing conditions as well as future Town needs. The Plan shows a pattern of development set within the framework of the planning factors previously enumerated and recognizes the expressed desire of the community to accommodate new growth without the loss of the semi-rural character which has long been one of the attractions of the Town.

The Plan divides the Town into eight major categories of land use, four of which are residential, and four are non-residential, as illustrated on the accompanying Proposed Zoning Map (Map L). Each of these represents varying types and/or intensities of land uses which are felt to be appropriate for Patterson based upon the studies discussed earlier. In addition to the four commercial categories, it is proposed that certain land uses be permitted only by Special Use Permit or as permitted under a floating zone. Further information about how different uses should be treated within future zoning can be found in Appendix "H" Land Uses.

Fundamental to developing the Land Use Plan is determining the appropriate densities for residential and commercial development. Foremost in determining proposed densities was the Town's environmental constraints to the proposed type of development. Land use densities should be at levels which can realistically accommodate the carrying capacity of the land. Also considered in determining appropriate density levels are the impact of development on the viewshed of the Town, the ability of the existing infrastructure to support the proposed density, and the desire of the community, as indicated in the Community Survey Results, to maintain a rural atmosphere to the community.

The Land Use Plan is not intended to be static, but rather is designed to be flexible, and subject to revision as Town policies are modified.

8.6 Major Land Use Policies

The Land Use Policies which follow are derived from consideration of infrastructure, soils, slopes, wetlands and other environmental factors. They also reflect the sentiments expressed in the Community Survey Results. The Land Use Policies, in conjunction with the Comprehensive Plan Goals, the Open Space Plan and the Vehicle Circulation Plan, and the community sentiment, are used to formulate the Land Use Plan and should be considered in any future land use decisions made by the Town. The Land Use Plan is based on the following policies:

- The physical characteristics of the Town should be carefully considered in creating a plan for commercial and residential densities, including topography, streams, wetlands, hydrogeology, soils, slopes and floodplains.
- Residential development should be at densities that protect the rural character of the Town.
- The pattern of existing settlement should be reinforced by encouraging development in proximity to existing hamlets and discourage settlement in sparsely populated areas. The Putnam Lake community would be maintained as the primary area of relatively high density residential uses. However, the densities permitted in these areas should be reduced from that currently in effect unless community sewer and water are provided.
- Land use patterns should be encouraged which responds to the availability of transportation services.
- New development should compliment the existing street system in promoting sound traffic circulation patterns.
- The Great Swamp is an important natural resource both for the Town and the region as a whole. Land use patterns should be encouraged which reduce negative impacts on the Swamp.
- Land use patterns should take into consideration the development patterns of adjoining communities while still serving the needs of the citizens of Patterson.
- The impacts of development should be minimized through landscaping, paths, green buffer zones, clustering, planned developments, and preservation of meadows and forest land.
- Site plan approval should be required for all land development to control circulation, parking, landscaping, energy conservation measures, and drainage.
- The land use plan should reflect the need to preserve scenic and historic resources of the Town.

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- Strip development and linear development should be prevented through curb cut limits, cluster incentives, and greenbelt measures.
- Ample setbacks should be required from Town roads for building and parking for all commercial/industrial office projects and residential projects of more than ten units. Setbacks should vary according to zoning district and the type of roadway on which project obtains frontage.
- Land trusts should be encouraged as a means of preserving farmland and open land throughout the Town. In addition, transfer of development rights, management, conservation easements and similar means should be encouraged.
- Landscaping and adequate temporary erosion control should be required during construction through site plan review under zoning and subdivision regulations.
- All power lines should be buried in all projects or subdivisions; adequate setback and screenings for above-ground utility installations should be required.
- All new large projects should be required to provide fire protection, including sources of water supply, hydrants, standpipes and residential and commercial fire sprinkler systems.
- Adequate buffer areas should be required between differing land uses.
- Development should be located and designed so as to protect the viewshed.

8.7 Neighborhood (Community) Centers

Whether they are defined as a neighborhood center, a pedestrian pocket, a village center, or a “core” a community center is a mixed use area consisting of varying types of residential units, customary personal services, and retail designed to serve the immediate area, and possibly some employment centers (offices, light manufacturing). These centers are best designed around mass-transit opportunities (within 1/4 mile to 1/2 mile). Designing neighborhoods around mass-transit is not intended to eliminate the use of automobiles, but rather to allow people to make healthy choices. Also generally found in neighborhood centers are day care facilities, and open space/recreation facilities. The idea is to weave together the currently isolated land use components of a suburban environment to create a more livable environment. This spatial arrangement has social and cultural ramifications: the pedestrian orientation encourages the frequent, casual social interaction that forms the basis of a community center and that the homogeneous suburban style subdivision so obviously lacks.

There have always been a number of “cores” within the Town of Patterson which have been the centers of their local communities. Front Street in the Hamlet is just one of them. Some cores, like the area around the monument in Putnam Lake are relatively new. Towners (the area between the intersection of Routes 164 and 311 and the Rail lines) is older but has left only faint clues of its former existence. Each of them came into existence because of three basic factors.

- ▶ A strong relationship to regional and local transportation patterns which meant, before the days of modern engineering technology, that both their location and their layout was directly related to the surrounding rivers, valleys, hills, wetlands, etc. so that it was convenient to get to them from both the surrounding community and the outlying regions.
- ▶ Enough residential density to create a sense of community within themselves and provide a need for the creation of and an identification with public structures. And,
- ▶ A healthy commercial component which, however small, served the needs of the local community and was tied to the regional and national economies.

It has often been observed that nothing succeeds like success. A successful core is often easier to perceive subjectively than to measure objectively. We know one when we see it. Our perception involves feelings about things; a sense of “place”, of belonging, of familiarity; of knowing that if you go to one of the public places there is a good chance that you will meet someone whom you know. It has to do with feeling “at home” while out of your house and not in your car.

Successful communities exist in all sizes, densities, layouts and architectural styles. The feeling of community has everything to do with the emotional involvement that the residents of a place have with each other and where they live. It has existed in western prairie townships and well as in dense urban neighborhoods. The core of these communities have existed in all sizes, densities, layouts and architectural styles. However, these same three factors seem to be present in every case. First, the residents of each community have easy physical access to and from a common core, each other and connections to the larger region. Second, since this common core is a shared public space with which they identify, they have

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developed structures and institutions within it to serve and symbolize their shared needs. And third, a commercial center is developed within the core which serves the local market (represented by the residents of the community) and through the activity it generates, reinforces the community aspects of the public spaces within the core. The particular details of each of these factors are different in each case and are what make each core special and unique.

Patterson currently has remaining two “core” or community centers; Putnam Lake and the Hamlet area. Land use patterns that will reinforce these two areas as the two principle community centers are one that should be encouraged. Any new residential development in these two areas should mirror existing development patterns, taking into consideration the constraints of adequately being able to site wells and in-ground sewage systems. Any new residential development should be designed so as to integrate into the existing neighborhoods. Commercial uses should be restricted to those that seem to fit the size, scale, and intensity of the village setting. Typically, these include:

- ▶ The personal service shop - like those for hairstyling, tailoring, shoe repair, and dry cleaning drop-off centers;
- ▶ Specialized retail - commonly defined as “shops selling gifts, novelties, flowers, books, periodicals, jewelry, apparel, tobacco, toys and crafts, stationery, and similar uses.” Antique stores are sometimes included in this category; and
- ▶ Business or professional offices - real estate and insurance offices, travel agencies, medical, dental and veterinary offices, banks and other financial institutions (minus the drive-in windows).

The intent is to encourage the sort of enterprise that can unobtrusively co-exist with the nearby residential homes and that nearby residents might be inclined to walk to. Some ordinances permit more general purpose retail uses, such as grocery stores, bakeries, small appliance repair shops, and hardware stores. The risk in these cases is that, if a large enough lot is available, the grocery store may grow into something resembling a supermarket. The General Business (GB) zone should address this problem by defining architectural guidelines and specifying a maximum floor area of 10,000 square feet for any retail use. Architectural guidelines should also be designed to allow any new commercial development to blend in with the surrounding residential community. One of the key elements in accomplishing this task is parking. Typical “strip” commercial development allows for large parking areas located in the front of the building. New parking areas should be placed, either partially or in whole, to the rear of the buildings.

Amenities which would encourage a pedestrian orientation should be promoted where possible. These include sidewalks, street trees and bulletin boards announcing community events in appropriate areas. In addition pedestrian circulation both within and between existing neighborhoods should be enhanced. The maximum height of fences in front yards of these areas should be four feet.

8.8 Components of the Land Use Plan

8.81 Residential Land Use

In keeping with the planning policies and criteria outlined above, the residential land uses would provide for a range of development densities; protection of the natural environment, taking into account the development densities of the neighboring communities. A major component of the residential land use is the requirement of any proposed subdivision located in an area delineated as Open Space Preservation area on the Open Space Map Must submit plans which reflect a “clustered subdivision” (Section 278). The design of Open Space Development plans should accomplish three goals. First, the design should be sensitive to the environmental constraints of the site in question. Second, the design should take into consideration the Town’s viewshed. And last the plans should consider any adjoining areas of protected open space. The residential land use component would delineate four areas of the Town which exhibit distinct and differing characteristics. In addition an overlay zone would be created for multifamily housing. These areas are described in summary form as follows:

1. Rural Density (R-4)

This area would encompass the Birch Hill and Haviland Hollow sections of Patterson, the central area of Patterson and the southwestern area. The environmental constraints imposed by the soils, slopes, wetlands and groundwater in these areas limit the density at which new residential units can be reasonably built.

The Birch Hill area represents an opportunity for the Town to maintain a large area in a predominately natural state. Land use patterns should be encouraged which ensure that the area will be maintained in a rural density state. The minimum lot size should be large enough to ensure that the area is preserved as a predominately rural area. The natural beauty of the area is of benefit to the entire community and should be protected. The density proposed compliments both the current uses of the area, such as the ski area and the land preserves controlled by the New York State Department of Environmental Conservation and the County park, as well as the low density development in the neighboring Town of Pawling. Many parts of the area exhibit slopes over twenty (20%) percent, and Haviland Hollow Brook has the characteristics of a critical environmental area. Based on information recently assembled, the Birch Hill area exhibits a low groundwater potential, with a fluctuating water table.

This area would also encompass the center area of the Town, including the Great Swamp and areas of steep slopes in the southern section and also an area on the western border of the Town. Each area exhibits a combination of environmental constraints including wetlands, floodplains and steep slopes which dictate that densities be kept low in order to prevent negative impact on sensitive lands. With respect to groundwater potential, portions of this area exhibit moderate groundwater potential, with shallow aquifers, while the south westerly portion exhibits a low groundwater potential.

Also of concern in these areas is development on ridge tops. Development on the ridge tops can have a severe impact on the viewshed for the Town of Patterson and should be prohibited. An alternative to restricting development would be to set architectural standards for development in those areas. These standards would include a reduced height limitation, restrictions on the clearing of existing vegetation, landscaping requirements, and color design standards.

Within the area, single family development at a density of one residential dwelling unit per four acres in size would be encouraged as the predominate land use. Special care should be taken to ensure that the development is limited to those places within the very low density area which are most suited to development; this could be accomplished through cluster development.

2. Low Density (R-2)

The proposed low density areas would occupy three principal residential sections, including the northwest corner of Patterson, the south central portion, and two areas surrounding the Putnam Lake area. These are the areas which are best suited for development of single family homes with a density of one family for every two acres.

3. Hamlet Density (R-1)

The Hamlet Density should be limited to those areas defined on the Master Plan map as the Hamlet of Patterson. This area would parallel Rt. 311 from Rt. 22 on the east to Sonnet Lane on the west. The Patterson Hamlet will continue as the predominant population and community center, other than the Putnam Lake area. This will continue to be a location for single family development at a density of one single family dwelling unit per acre. Future residential development in this area of Town can, however, present certain concerns. The dense, walkable neighborhoods of the hamlet can accommodate a new housing units and businesses without destroying the Hamlet's essential character if new development is consistent with the existing patterns. Architectural standards which mirror existing patterns should be developed for this area. In addition the Town should require new development to provide improvements typically found in traditional community centers such as street trees and sidewalks.

4. Medium Density (RPL-10)

This area exclusively encompasses the Putnam Lake community. The area offers special opportunities and challenges to the Town. The area grew as a lake resort, used primarily during the summer season. In recent years, following a trend at many lake communities throughout Putnam and Dutchess Counties, many of the units have been converted into year-round homes. This is valuable in that the lots and houses typically are smaller and older than most of the housing stock in the rest of the Town. This provides the area with a less expensive housing alternative. Thus a real need in Patterson is filled. The area should be maintained to preserve that opportunity. However, as the environmental conditions of the Town pose serious problems for the proper disposal of wastes at this density, it is not recommended that this level of density be expanded to other parts of the Town. Presently the Putnam County Health Department

requires a minimum of one-half acre for development of new residential units in this area. It is proposed that the Town also increase the number of lots necessary to build new residential units to ten lots, which will approximately one-half acre. In addition the Town should provide a clear definition as to the minimum area of a lot in Putnam Lake.

8.82 Non-Residential Land Use

The Non-Residential land use areas would provide areas for development of commercial uses such as research-office uses, light industrial, commercial recreation and public/semi-public uses. These, together with the residential use groups, uses allowed by overlay zones and special use permits provide for a balanced and orderly pattern for future growth and development.

Patterson's present method of determining nonresidential development density is through "Building Coverage". This is probably the oldest method for measuring intensity of nonresidential uses. It measures the ratio of percentage of the site or lot that is covered by the building. "Building Coverage" cannot alone adequately indicate intensity of land use. Building coverage is an area measurement dealing with only two of the three dimensions (length and width) necessary to define bulk. "Building Coverage" fails to adequately define the amount of impervious surface that will be created from parking areas, etc. that is required to meet the needs of the building.

Floor Area Ratio (FAR) is another method of determining land use intensity. It was developed as a more precise and adaptable measure of land use intensity. "FAR" takes into account the number of stories and therefore is a better reflection of building bulk. "FAR" is a ratio derived by dividing the total floor area of a building by the area of the site or lot.

Appendix H includes a list of non-residential uses and their proposed treatment under future zoning in Patterson.

a. General Business

Presently Patterson has three retail classifications; NS-1 located in the Hamlet area, NS-2 located in the Putnam Lake area and the Hamlet, and larger retail operations in either the I Zone or the R-O Zone by Special Use permit. As proposed these three zoning classifications would be changed to one General Business Zone and one floating zone.

There appears no justification to retain the NS-1 and NS-2 zones as separate retail districts. The General Business zone would combine the NS-1 and NS-2 zones into one zone. It is envisioned that this zone will be locations for local services and shops as previously discussed under Section 8.7. Patterson residents should have the opportunity to satisfy the needs of everyday life in locations convenient to the residential sections of the Town.

Larger shopping areas would be permitted as a floating zone. Larger shopping areas should be located in areas near the major roads so as to minimize their impact on Patterson neighborhoods. Route 22 is believed capable of supporting only one (1) shopping center in Patterson within the

near future. Any proposed shopping center would best serve the Town if located close to the Hamlet area. Any newly developed retail should be sensitive to the established retail. The I84 - Rt 311 area could possibly support a regional shopping area. Again the ability for this area to support this type of commercial development is limited. The creation of a retail "floating zone" would allow the Town to determine the best possible siting depending on the type of retail proposed.

b. Commercial (C-1)

These areas will provide the locations for large-scale non-residential developments. Their location is determined by access to the highway system in Patterson. One area is located at the intersection of Route 311 and Interstate 84, and the remaining areas are adjacent to Route 22. Route 22 is thus reinforced as the major corridor of non-residential development in eastern Putnam and Dutchess Counties. The Commercial areas should offer the opportunity for a number of uses, office parks, research centers, or light manufacturing operations. However, design standards should be developed which will prevent the areas from becoming strip highway commercial areas with the attendant traffic problems.

c. Industrial (I)

This area is located along Fair Street west to Interstate 84. This area would include commercial recycling centers, storage facilities, heavy industrial manufacturing, and contractor offices.

d. Commercial Recreation

Commercial recreation would include opportunities such as hotel/conference centers, golf courses, golf driving ranges, horse stables, various ball fields, ice rinks and other indoor recreational opportunities. Because of the many different types of activities which may fall under the category of commercial recreation, and the differing impacts to the Town from a particular type of recreational opportunity, it is difficult to determine where such zones may be situated. For example an ice rink, given proper buffer areas might be acceptable in a residential area. However the impacts of siting of a hotel in a residential area would make such development extremely difficult. Commercial recreational opportunities should be encouraged in the area immediately surrounding the Thunder Ridge Ski area along Rt. 22. Encouraging additional recreational opportunities may aid in making the Thunder Ridge Ski area more economically viable than is presently the case.

In June of 1999, the Zoning Board of Appeals completed a comprehensive review of the Town's ability to provide for a variety of commercial recreational opportunities. In general, the Zoning Board of Appeals endorsed the concept of increasing the variety of commercial recreational uses allowed in Patterson and providing greater flexibility in where they may be located. By amending the zoning code to expand those uses presently allowed, the Board felt that the Town would be promoting the development of new opportunities for recreational activities while at the same time increasing the Town's tax base. The ZBA reviewed several zoning techniques that

could be used to promote commercial recreation, while at the same ensuring that the recreational use would not impact on the Town's residents. The ZBA agreed that the most appropriate method was the creation of a "recreation overlay zone" in which a variety of recreational uses would be permitted by Special Use Permit. Only those uses which are family-oriented and promote a clean and healthy environment and are safe and unobtrusive to the Town's residents were felt to be appropriate for inclusion under the new recreation designation.

8.9 Housing and Affordable Housing Options

One of the many goals of the Town of Patterson to accommodate present and future population by encouraging the development of an appropriate variety and quantity of sound housing which will serve various income levels and age groups, including low and moderate income housing. Given the circumstances in Putnam County, and the entire New York metropolitan area, "affordable" housing really refers to "less expensive" or "moderately priced" housing. We are not talking about publicly built housing, or subsidized housing for low income residents.

Defining "what is an affordable house" is a difficult question. Putnam County presently does not have an affordability index for housing costs as do other, more urban counties, which the Town of Patterson may rely on. So for the purposes of the Patterson Comprehensive Plan, affordable housing can be defined as housing which is affordable to those households with incomes at or below the Putnam County median which is \$53,634.

The National Association of Realtors has issued guidelines concerning the purchase of a house. These guidelines state that a household should not purchase a house which costs more than 2.5 times their gross income or rent a home where the monthly rent exceeds 30% of gross income. Using these guidelines in conjunction with the Putnam County median income would suggest that houses which sold for \$134,000 or less would be considered affordable. Or in the case of renters, monthly rents of less than \$1,340 would be considered affordable. There are three groups of people requiring affordable housing in our community, those making between 75 to 100% of the county median income, those making 50 to 75% and those making less than 50% of the county median income.

According to figures taken from the 1990 census 16% of Patterson's households earn under \$25,000, 20.4% earn between \$25,000 to \$40,000, 17% earn between \$40,000 to \$50,000 and 46.6% earn over \$50,000. However only 9% of all of Patterson's housing units are affordable to households earning under \$25,000, 13% are affordable to those earning \$25,000 to \$40,000, and 9% are affordable to the \$40,000 to \$50,000 group. These figures demonstrate that Patterson has a shortfall of affordable housing.

8.91 Provision of Units

There are several possible techniques for encouraging affordable housing include, higher density residential densities, accessory apartments, mobile homes, housing for the elderly, ECHO units, shared residences, and density bonuses for developers. The following programs offer ways of housing moderate income people at relatively small cost to the community. However, each has its own short-

comings, and some are more appropriate when directed towards a particular segment of the population, such as senior citizens.

a. Higher Density Residential Districts:

Typically, smaller homes on small lots will cost less than larger ones, and rental apartments are more apt to be affordable than homes for purchase. Either case is most likely to occur when zoning allows high densities of residential development. The obvious drawback is that there is no assurance that the development will be aimed at middle-income households. It takes no imagination at all to think of apartment, and townhouse developments which are extremely expensive.

b. Specialized Housing:

The Town has the power to create zoning districts for special housing such as senior citizen housing districts which restrict occupancy to the elderly. This could be subsidized, non-subsidized or privately funded congregate care housing. In addition the Town could create opportunities for specialized housing for the handicapped and also create housing districts which limit occupancy to certain economic classes; these would probably have to be subsidized in some form. Other specialized housing forms include manufactured houses, mobile homes and mobile home communities or parks which can be created administratively or through zoning.

c. ECHO Units:

These are small houses built on the property of an existing house. They generally resemble cottages, are completely separate of the primary house, and are typically most suited for the use of senior citizen members of the family living in the main house. The benefit is that their use allows parents and children to live in close proximity to each other, when the parents are independent and do not require constant supervision. The problem is that because the units can be thought to be unsightly if not properly screened from the road and neighbors, a large lot is required for their use. In addition, it is generally desirable to strictly limit their use to family members, which requires greater intervention by the community.

d. Shared Residences:

The Town can actively promote the sharing of residential units by providing a matching service to introduce those with space to spare to those who need living accommodations. These "house-mates" act as a single household, using a single kitchen, and potentially sharing living expenses. This is another program which can help senior citizens to stay in their homes as tax and utility costs rise while their income remains fixed. A younger person, or a single parent with a single child could help with the maintenance of the house, while providing income and companionship to the senior.

e. Accessory Apartments:

These are independent units within existing structures. They can be used by members of the family or by any other renter. Some communities have found them so prevalent that they had to legalize the existing apartments in order to properly enforce the building codes.

f. New Construction of Moderately Priced Units:

Some programs are designed to encourage the construction of new single-family units which are within the target price range of the middle-income family. Typically, the role of the Town is greater than in any of the programs listed above. The Town is responsible for establishing as law a program which either allows or requires developers to construct the units, while at the same time verifying the eligibility of the buyers. The centerpiece of the program is the density bonus granted to builders for providing the affordable units. In Montgomery County, Maryland, a developer of a subdivision of 50 or more units is required to construct 12.5% of the units to sell in the middle-income range. At the same time, he can be allowed to build up to 20% more units than would have otherwise been the case. The greater density offsets the cost of the moderately priced units. In the Town of Wallkill, New York, a density bonus of up to 50% is allowed if at least 50% of rental units are priced for moderate income households. The benefit of this kind of program is that the units are provided in such a way that they are not noticeably different or separate from the rest of the development.

Eligibility of the occupants is determined by the Town, and is based on the income of the entire household which will live in the unit. Again, the base figure is typically the median income for the community, adjusted for the size of the family. In Wallkill, the range is from \$17,250 for a single person, to \$27,700 for a family of six; in Montgomery County, Maryland the range is \$26,000 to \$36,000. The ranges must be revised periodically to match changing economic conditions. Once the family is certified eligible for the housing, it is up to them to arrange the financing and purchase the unit with the developer. Re-sale (or re-rental) prices are regulated for up to ten years, allowing only a small increase annually, linked to the increase in the local Consumers Price Index (CPI). Condominium conversion of apartment units is also regulated for a certain period following construction.

Some communities have established eligibility priorities. In Wallkill, the following ranking system is used:

1. Residents of the Town of Wallkill
2. Persons employed in the Town,
3. Residents of Orange County,
4. All Others.

An example of an "affordable housing law" can be found in the Town of Yorktown in Westchester County. Builders, under the provision of such a law, may build more units than current zoning allows for that particular area if they agree to build a certain number of

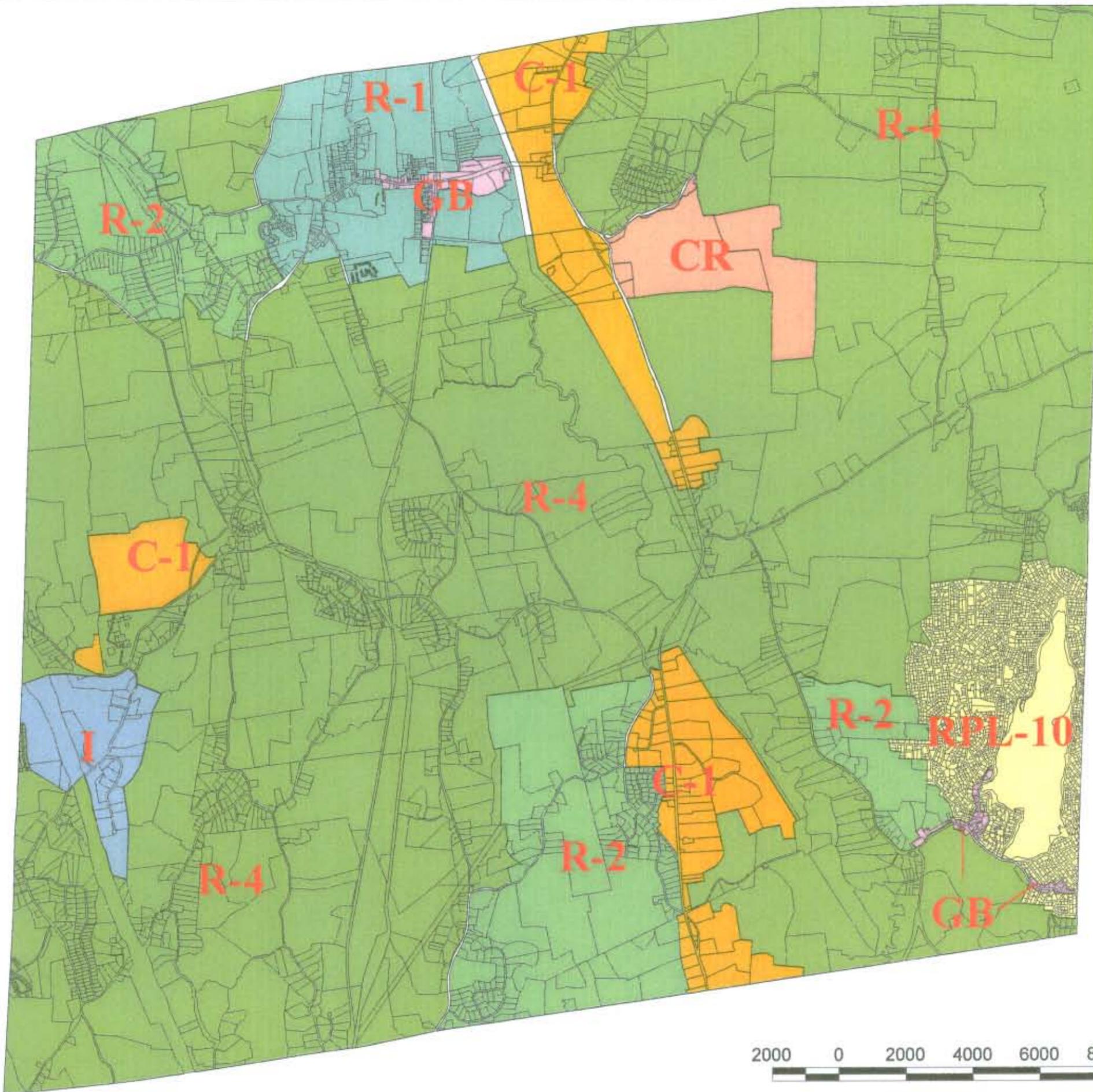
affordable units. For example, a developer of 50 or more units might be allowed to build 10 more units on the site if he agrees to build 7 of the total as affordable housing units, using the guidelines of the law. If the average civil servant makes \$25,000, that figure is multiplied times the rental index rate (Yorktown's is 35%), for a figure of \$8,750. This is then multiplied by a "Rental Target Rate" which varies as to the size of the unit. If a one bedroom unit has a rate of 0.9, it would be multiplied times \$8,750, leaving \$7,875. This figure, divided by 12, equals the monthly rental, in this case \$656.25. According to Yorktown's law, the rental rate for the above unit cannot exceed 120% of \$656.25. A community usually establishes priorities for eligibility such as, residency in the Town, employment by the town school district(s), senior citizens, and residents of the County.

8.92 Multi-Family

Multi-family developments are generally high density development with significant impacts to the environment, existing infrastructure and services. Developments of this type should be permitted only in areas which are convenient to shopping and recreational facilities. They should be located along major arteries at sites where public water supply and sewage disposal facilities can be readily provided without harm to the environment. Recent court decisions have mandated that communities provide their proportional share of the regional need for affordable and multifamily housing. However the Courts have provided no clear definition of what that fair share is or what should be defined as the region. It is beyond the scope of this Master Plan to examine the housing needs in the New York metropolitan area, so for the purpose of addressing Patterson's responsibility in addressing its need to provide adequate housing we will look at Patterson in its relation to that of Putnam County.

Presently Patterson's population equals 10% of the total population for Putnam County. Using this as a guideline, Patterson should presently be supplying at least ten percent of the multifamily (attached) housing in Putnam County. In the 1990 Census, the number of multifamily (attached) units in Patterson was 570 or 18% of the total number of residential units in Patterson. In the same census there were 5,921 multi-family units in Putnam County. As can be seen Patterson is presently providing approximately ten percent of the multifamily housing in all of Putnam County.

Future trends in population growth developed by Putnam County Division of Planning show that Patterson's population in relation to all of Putnam County should remain at approximately ten percent. There are presently 136 units of multifamily housing approved or under construction. This additional 136 units of multifamily housing when completed will increase the number of multifamily housing in Patterson by twenty-four percent - while the population is expected to increase by only ten percent. If no new multifamily projects are approved Patterson will still be able to provide its fair share of multifamily housing for the foreseeable future. The most appropriate location for future multi-family housing is along Fair St. west of Interstate Route 84. The adjoining road system (Rt. 311 and Fair Street) has adequate capacity to handle future traffic increases while the proximity to Interstate 84 allows for easy access to a major arterial road. Soils and slopes are generally more conducive to this type of development than are other areas of Patterson. And additional multifamily development in this area would only serve to reinforce existing development patterns.



TOWN OF PATTERSON

MASTER PLAN

MAP "L"

PROPOSED ZONING MAP

ZONING DISTRICTS

Residential :

- RPL-10 Putnam Lake Residential (10 Lots)
- R-1: 1 Acre Minimum Lot Size
- R-2: 2 Acre Minimum Lot Size
- R-4: 4 Acre Minimum Lot Size

Business:

- GB: General Business
10,000 S.F. Min. Lot Size
- C-1: Commercial:
2 Acre Min. Lot Size
- I: Industrial:
2 Acre Min. Lot Size
- CR: Commercial Recreation
200 Acre Min. Lot Size

Prepared by
Patterson Planning Department

July 10, 2000



9.0 COMPREHENSIVE PLAN IMPLEMENTATION - THE ZONING PLAN

The Town of Patterson is given the authority to divide the land in its jurisdiction into various categories of use, based on a comprehensive plan for community development. The existing zoning fails to meet the needs of Patterson and the land itself. With zoning being a primary tool in achieving the goals of the Town Comprehensive Plan, in order to adopt the Plan, a comprehensive revision of the existing zoning will be required. This revision is necessary to reflect both the changes in potential land use and to accommodate the system of additional land use controls.

The vision embodied in this Comprehensive Plan is one that concentrates new residential development in pockets surrounded by interconnected areas of dedicated open space in order to protect the rural character of the Town. The Plan further reinforces the Patterson Hamlet and the Putnam Lake as the two principal community centers within the Town of Patterson. The Plan Patterson's new zoning should permit a wide variety of uses in the different zones, but subject them to performance standards which are used by the Town to determine whether or not a use should be allowed by a special use permit, or other special zoning technique, in a particular location.

9.1 Existing Zoning

The Town's current Master Plan was adopted in February of 1975. The zoning ordinance, which was based on the 1975 Master Plan, and is currently applicable to the Town of Patterson was adopted by the Town Board in 1976; there have been some amendments since that time.

The Town is presently zoned and delineated into eight (8) zoning districts. Three (3) of these, namely the R-80, R-40, and RPL-5, each describe their own basic developmental requirements. The RPL-5 is a special residential district designed to accommodate the small lot pattern in the densely populated Putnam Lake area.

The R-40 and R-80, with 40,000 and 80,000 square-foot lot area requirements, respectively, are the Town's two major districts comprising most of the Town's area. The Great Swamp is in the R-80 District as are the northeasterly, northwesterly and south-central parts of the Town. All other residential areas are in the R-40 zone. In the Hamlet of Patterson multi-family use is allowed at a higher density provided community water and sewer facilities are provided.

There are two Neighborhood Shopping Districts, NS-1, and NS-2, which are distinguished only by their respective minimum lot area requirement. The NS-2 zone is mapped in the Putnam Lake sector and in one small area in the Patterson Hamlet. The NS-1 District is largely found in the Hamlet and along limited parts of Route 22.

There is an R-O, or Research Office District which is mapped on both sides of Route 22 in the southern part of Town. The I, or Industrial District, is mapped along the upper part of Route 22, north of Haviland Hollow Road, and also in the vicinity of the I-84 interchange.

Lastly, there is a "CR" or Commercial Recreation District which is mapped only at Birch Hill Road and Route 22.

9.2 Need for Changes in Zoning Regulations and Procedures

Land development is the result of public and private actions. For this reason, it is important that the Town guide private development through the powers granted to it under State statutes in order to develop the type of Town the residents wish to live in. The zoning power is one of the most significant tools available to the Town whereby it can give direction to private uses of land, both in the continuation of desirable land use patterns and the promotion of appropriate future development in vacant areas.

The existing zoning fails in several respects, to meet the current needs of the Town. The nature of modern development techniques and concepts require tools of like sophistication carefully geared to the protection of the areas to be developed. With the adoption of the Master Plan, a comprehensive revision of the Zoning Ordinance is required. This revision is necessary to reflect both the changes in potential land use embodied in the evolving master plan and to accommodate the system of desirable additional land use controls. The principal recommendations for changes to the existing zoning are summarized in the following discussion outline.

- a. The type and allowable density of residential development should reflect the many physical, environmental and infrastructure constraints to development which have described in this report; this is not consistently the case at present.
- b. The residential use groups as shown on the prospective master plan should be mapped in a consistent zoning district nomenclature on the zoning map. The same should true of the non-residential uses.
- c. There appears to be no justification to retain the NS-1 and NS-2 zones as a separate district. They should be blended into one general business zone.
- d. A system of tables and graphic illustrations should be established detailing the uses allowed in each district and the bulk and dimensional requirements connected with each use. This would make this information readily available to the public in an easy-to-understand format.
- e. An improved set of standards should be established which will provide for the orderly development of attached multi-family housing along Fair Street.
- f. Standards should be developed for open space subdivisions in conjunction with providing for authorization for the Planning Board to require Town Law Section 278 open space subdivisions in those areas delineated for open space protection on the open space map. Those areas delineated for open space protection should be shown as an overlay zone on the new zoning map.
- g. Provide for a re-organization of the special permit uses in both residential and non-residential districts including specific design standards and requirements.

- h. Provide for an updated and expanded list of the definitions and uses needed for the proper functioning of the Zoning Ordinance.
- i. Provide for updated and contemporary standards for parking, off-street loading, landscaping, lighting and other design standards.
- j. Provide for coordination with the State Environmental Quality Review Act review procedure.
- k. Provide for overlay and floating zones as described in the Comprehensive Plan.
- l. Provide for environmental protection measures, either in the new zoning regulations or by separate local laws, to protect existing steep slopes, woodland areas, viewshed, wetlands, groundwater and surface water supplies, ridge tops and stormwater.

In the course of the preparation of the Town Master Plan a number of techniques have been discussed and considered for protecting the unique physical and cultural attributes and characteristics of the Town of Patterson. Some should be incorporated as elements of the new zoning ordinance for the Town while others may be incorporated in separate local laws.

9.3 Basic Zoning Techniques

The use of zoning to regulate density and reduce impacts to the environment and open space is a well established land use tool. The following is a discussion of the possible techniques available to the Town.

- 9.31 Conventional zoning** - Zoning districts are created which allow selected permitted uses. Allowable densities are pre-determined. Conventional zoning, with its segregation of uses and somewhat rigid determination of area and bulk requirements, is not always consistent with the best planning and development of a given site.
- 9.32 Performance Zoning** - A zone is defined by a list of permitted impacts (based on natural resource data and design guidelines) as opposed to permitted uses. This approach directs development in appropriate places based on a comprehensive, environmentally-based plan. Implementation however can be difficult since environmental impacts can be hard to measure.
- 9.33 Cluster Zoning** - (Section 281) Allows conventional zoning's ratio of housing units to acreage but permits clustered development through undersized lots, thus allowing for open space preservation.
- 9.34 Preservation Overlay Zoning** - Overlay zones with development restrictions can be established to protect agricultural and natural areas, scenic views and historic neighborhoods.

- 9.35 Conservation Density Subdivisions** - Permits developers the option of building infrastructure improvements (roads, drainage, etc.) to less expensive specifications in exchange for permanent restrictions in number of units built.
- 9.36 Floating Zones** - A floating zone is a special zoning district. The requirements of a floating zone are fully described in the text of the local zoning ordinance but the zone remains unmapped. It “floats” over the locality until it is “anchored” to the land in response to an applicant’s petition for a rezoning through legislative action. The new “floating zone” designation then replaces the previous designation on the map. This technique has commonly been used for large-scale developments such as shopping centers, industrial parks, garden apartments, senior citizen housing and planned unit developments (PUD’s). The use of “floating zones” as part of the overall framework for development in a land use plan is an excellent tool when properly used. Extreme care should be given to the uses that a floating zone will consider as well as the area that they may be placed. Initially uses permitted through a floating zone should be limited to commercial zones only. In addition any design requirement applicable to a particular “floating zone” use should be specified in a very concise manner, protect the existing character of the area in which they are used and be consistent with the policies set forth in the Comprehensive Plan.
- 9.37 Special Use Permit** - Application for a special use permit allows for a more rigorous review of the development plans for uses which, by their nature, could have adverse impacts on surrounding properties or the community at large. The special use permit review is intended to allow the community the opportunity to approve or disapprove certain uses at particular locations, and to impose conditions or safeguards on these developments which further community objectives or mitigate undesirable impacts.

Special Use permit procedures should be developed in conjunction with performance criteria governing the issuance of permits.

9.4 Other Preservation Techniques

9.41 Resource Protection System

Under a resource protection system, land is zoned on the basis of its carrying capacity for development, calculated on the basis of a number of environmental factors, in addition to the more generalized bases for calculating density (such as access and availability of services). As a result, properties within the same zoning district might have different allowable development densities, based on the environmental sensitivity of the land itself. This method is very similar to Performance zoning. The basic difference is with Resource Protection zoning the allowable uses are pre-defined. Both performance zoning and resource protection zoning may subject the Town to protracted litigation due to the subjective nature of determining impacts to the environment.

The resource protection system would be used to determine the site capacity for all proposed development. The site capacity calculations provide a mechanism for subtracting from the base site area portions of a site necessary to protect the natural environment and scenic and environmental resources. The portions of the site so identified are termed "resource protection land" which are derived by multiplying certain "resource protection features" by "resource protection ratios". Once the subtraction is made, a modified base site area is obtained which can be multiplied by a density factor which is set forth in the zoning ordinance for each zoning district; the density factors vary for each separate district.

A system for Patterson might include the following resource protection features: a) waterbodies, watercourses, wetlands and floodplains, b) land with over 20% Slopes, c) intermittent drainageways.

Several communities in Orange, Putnam and Westchester Counties have adopted or are considering adopting some form of resource protection zoning. This is also true in many other parts of the United States.

A companion set of regulations might also be considered which would limit or preclude development on resource protection land. In this instance, they would not necessarily be eliminated or deducted in calculating the development yield on a project site. Thus the resource protection system would merely clarify areas of sites where development may not be allowed, and how these areas may be included in "minimum" required lot areas in lieu of excluding specific percentages of such constraints.

9.42 Cluster Development

The use of cluster development, which is not currently provided for in the Town zoning ordinance, should be included to provide provisions for mandatory clustering, corresponding to the Open Space overlay zone. This technique would be used at the option of the Town Planning Board, if empowered by the Town Board, as a way of preserving open space and critical environmental areas.

9.43 Floodplain Restrictions

The restrictions currently in the zoning ordinance providing for special use and construction requirements in the areas subject to flooding should be reinforced by means of an "overlay" district; consistent with FEMA boundaries, on the zoning map.

9.44 Critical Environmental Areas

Critical Environmental Areas (CEA's) are specific geographic areas, designated by a state or local agency, with exceptional or unique characteristics which make the area environmentally significant. The environmental quality of the community is enhanced by the protection of critical

environmental areas, and potential local CEA's should be considered by the Town Board. When fully inventoried, CEA's within the Town should be incorporated on the new zoning map.

Examples of CEA's which should be considered for such purposes are state and local wetlands not included in the Great Swamp designation; the Cranberry Mountain Wildlife Management Area (453 acres); the Walter G. Merritt property (600 acres); other County and Town parks; and significant waterways and bodies of water, such as Putnam Lake and Lost Lake.

9.45 Protection of Scenic Resources

The magnificent scenic resources in the community can be enhanced through the preservation of scenic districts, scenic vistas and scenic roads. During the course of the Town Master Plan program, and the Resource Protection Plan developed by the Environmental Law Foundation, work has been performed in order to identify such assets. For example, Route 22 from Route 311 southward is the "picture window" of Patterson.

The measures available under State law to protect scenic resources include the designation of scenic districts and scenic roads, development of protective design standards, the use of overlay zones, land trusts and transfer of development rights. A scenic easement is an additional protection measure which should be encouraged. A "scenic easement" as authorized by Section 247 of the General Municipal Law, is a negative or conservation easement whereby the land owner restricts development of his land thereby maintaining or preserving scenic views and vistas. The Town may wish to consider reducing property assessments based on the limits placed on the property's use to encourage the protection of scenic vistas and other areas that are important to the community.

The Scenic Roads Program exists by virtue of Article 49 of the Environmental Conservation Law. This State Law, as established, reinforces the concept that highways and roads can be significant cultural historical and scenic resources. Roads provide an important means of physical access and offer a visual experience of the landscape.

Specific goals of the program are:

- To protect, preserve, and enhance the natural and man-made scenic beauty of Patterson as well as New York State;
- To promote a greater awareness and appreciation of the states scenic, ecological, cultural and historical attributes; and
- To provide economic benefits through increased tourism and improved property values resulting from the protection, preservation and enhancement of the landscape.

Under the Scenic Roads Program, two general criteria are employed to evaluate candidate roads:

- The road, immediate right of way, and views from it should exhibit exceptional compositional merit.
- The road must provide travelers a substantial opportunity to view and appreciate the distinctive cultural, historical and/or geomorphic features of the region which it traverses.

Another area of concern for the scenic resources of the Town development occurring along the ridge tops. Development occurring on the ridge tops is usually very visible, resulting in a severe impact on the viewshed for the Town of Patterson and should be prohibited. An alternative to restricting development would be to set architectural standards for development in those areas. These standards would include a reduced height limitation, restrictions on the clearing of existing vegetation, landscaping requirements, and color design standards.

9.46 Conservation Easements, Farmland Preservation

a. Conservation Easements

Under existing general municipal law, it is possible to create conservation easements to protect and preserve farm land, open space, critical environmental areas, and scenic resources. It is recommended that this technique be used more actively in the Town.

The conservation easement program has been used for many years to protect natural and scenic resources in neighboring Connecticut and recently in the northeast and northwest areas of Dutchess County. This technique is now being used to hold farms and could be considered for use in the Town of Patterson. Simply stated, a conservation easement permanently restricts the land. A farmer or landowner would use this method to protect prime farmland or unique area while keeping some less productive land for limited development. A landowner, who wished to protect his property, would voluntarily relinquish development rights to a private conservation organization such as the American Farmland Trust, which accepts the responsibility for enforcing deed covenants. The lost equity is then recovered through deductions from federal income and estate taxes. Since the donation of the restrictions would remove the development value of the land, the result would be less property tax and a lower inheritance tax on the reduced fair market value.

To be accepted by the Internal Revenue Service, however, the conservation easement must be donated to a publicly-supported not-for-profit or a unit of government and be intended permanently and solely for conservation purposes, and it must further an official state or local agricultural or conservation policies. The American Farmland Trust (AFT) is a qualified public charity; however, recognizing that it is more practical for a local group to monitor the terms of the restriction, the AFT could assign this responsibility to a local organization with a history of land conservation. The Putnam Land Trust is an organization that could be assigned this responsibility.

9.47 Freshwater Wetlands Ordinance

Wetlands provide numerous benefits, which include flood and stormwater control, water supply resources, wildlife habitat, open space and aesthetic benefits, and recreational opportunities. Under the Freshwater Wetlands Act of 1975, the New York State Department of Environmental Conservation protects wetlands of 12.4 acres and above, and provides for a one hundred foot buffer zone surrounding the wetland. In addition, the Patterson Town Board has designated local wetlands 2 or larger as requiring similar protection. Wetlands were identified from aerial photography and located by site inspection, using wetlands vegetative species as key indicators. The local wetlands and their protection are set forth in the Wetlands Local Law of 1989.

As stated previously wetlands provide numerous benefits. But not all wetlands may provide the same "level of benefits" to the community. The ability of wetlands to provide these benefits is a result of type of soils, type of vegetation, topography, and location in the landscape. Size, however is not a critical factor in the benefits provided by a wetland. Wetlands five thousand square feet or smaller may provide a very high "level of benefits" to the community because of its location in the landscape. Wetland Indexing would assign a value to the benefit provided and to the "level of the benefit" provided by a particular wetland.

The Town of Patterson should consider protecting all wetlands based on a system of Wetland Indexing.

9.48 Transfer of Development Rights

This technique has been used in some communities to preserve farmland and open space since it allows development to be shifted from such areas (preservation zones) to other areas called "reception zones" which are allowed to develop at higher densities than ordinarily would be the case. This will require more detailed analysis and investigation.

Only two or three major amendments to the Zoning Ordinance would be necessary. One amendment would add a general provision that would allow an optional TDR increase in any residential zone located within a receiving area designated on the amended Comprehensive Plan, subject to certain conditions. The second amendment would be the addition to a new zoning category, a rural density transfer zone. The new zoning category would provide for most types of primary farm uses as of right, and would permit other uses by special permit. The zone would limit primary residential units to the minimum acreage that could support a farm family on a cash crop, direct market basis. It would include the right to sell transferable residential development rights on the private market, in an amount to be calculated by the Planning Board. While the Planning Board is not recommending the implementation of the TDR mechanism at this time, the Committee does suggest that the application of this system in the Town be examined further by a committee comprised of farmers, businessmen, planners and officials from various public agencies.

9.49 Historic Districts and Historic Resource Preservation

Patterson's unique and rich historic legacy demands protection and enhancement. The Town's Historical Conservation Commission was appointed in November of 1986 and significant work has been initiated by the Commission. Two potential historic districts exist in the Town, and an inventory of historic buildings and sites is being created. Primary clusters of historic sites occur in the Hamlet of Patterson, and at the intersection of Route 311 with Route 164 and Cushman Road. Both areas have been identified as possible locations of an historic district. It has been previously recommended by the Master Plan Steering Committee that an Architectural Review Commission and Historic Advisory Commission be established, either as one body or separate agencies. The purpose of the board(s) would be to establish architectural standards for consideration by the Planning Board, and to advise the Planning Board in the review of new projects so as to protect landmarks and historic districts, foster civic pride, enhance attractiveness of historic areas as they develop and insure harmonious growth.

APPENDIX A

STUDIES AND REPORTS
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Prepared By: Manuel S. Emanuel Associates, Inc.
Revised: September 7, 1990

Background Analysis and Directions For Planning
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NYS DEC and OPRHP

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Protecting the Landscape and Shaping Growth
The Trust for Public Lands and Regional Plan Association
April 1990

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The Lower Hudson and Delaware River Basins, New York
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Dr. Peter Siver, Biology Department; Western Conn. State University
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Dan Siemann, The Nature Conservancy
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The History of Putnam County
William S. Pelletreau
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<Town of Patterson>

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Resource Guide to the Land Use and Development
Approval Process in New York
The New York City Housing Partnership

Rural Development Guidelines
Dutchess County Department of Planning and Development
October 1994

Patterson Hamlet Master Plan
1997

APPENDIX B
RECREATION STANDARDS

Appendix A

Suggested Facility Development Standards

ACTIVITY/FACILITY	RECOMMENDED SPACE REQUIREMENTS	RECOMMENDED SIZE AND DIMENSIONS	RECOMMENDED ORIENTATION	NO. OF UNITS PER POPULATION	SERVICE RADIUS	LOCATION NOTES
Badminton	1620 sq. ft.	Singles - 17' x 44' Doubles - 20' x 44' with 5' unobstructed area on all sides	Long axis north-south	1 per 5000	¼-½ mile	Usually in school, recreation center, or church facility. Safe walking or bike access.
Basketball 1. Youth 2. High School 3. Collegiate	2400-3036 sq. ft. 5040-7280 sq. ft. 5600-7980 sq. ft.	48' 50' x 34' - 50' x 34' 50' x 94' with 3' unobstructed space on all sides	Long axis north-south	1 per 5000	¼-½ mile	Same as badminton. Outdoor courts in neighborhood and community parks, plus active recreation areas in other park settings.
Handball (3-4 wall)	200 sq. ft. for 4-wall, 1000 for 3-wall	20' x 40' - Minimum of 10' to rear of 3-wall court. Minimum 20' overhead clearance.	Long axis north-south. Front wall at north end.	1 per 20,000	15-30 minute travel time	4-wall usually indoor as part of multi-purpose facility. 3-wall usually outdoor in park or school setting.
Ice Hockey	22,000 sq. ft. including support area.	Rink 85' x 100' (minimum 85' x 185'). Additional 5000 sq. ft. support area.	Long axis north-south if outdoor	Indoor—1 per 100,000. Outdoor—depends on climate.	½-1 hour travel time	Climate important consideration affecting no. of units. Best as part of multi-purpose facility.
Tennis	Minimum of 7,200 sq. ft. single court. (2 acres for complex.)	36' x 78'. 12' clearance on both sides; 21' clearance on both ends.	Long axis north-south.	1 court per 2000.	¼-½ mile	Best in batteries of 2-4. Located in neighborhood/community park or adjacent to school site.
Volleyball	Minimum of 4,000 sq. ft.	30' x 60'. Minimum 8' clearance on all sides.	Long axis north-south	1 court per 5000.	¼-½ mile	Same as other court activities (e.g., badminton, basketball, etc.)
Baseball 1. Official 2. Little League	3.0-3.85 A minimum 1.2 A minimum	• Baselines—90' Pitching distance—60' Foul lines—min. 320' Center field—400' • Baselines—50' Pitching distance—46' Foul lines—200' Center field—200'-250'	Locate home plate so pitcher throwing across sun and batter not facing it. Line from home plate through pitcher's mound run east-north-east.	1 per 5000 Lighted—1 per 30,000	¼-½ mile	Part of neighborhood complex. Lighted fields part of community complex.
Field Hockey	Minimum 1.5A	180' x 300' with a minimum of 10' clearance on all sides.	Fall season—long axis northwest to southeast. For longer periods, north to south.	1 per 20,000	15-30 minutes travel time	Usually part of baseball, football, soccer complex in community park or adjacent to high school.
Football	Minimum 1.5A	160' x 360' with a minimum of 8' clearance on all sides.	Same as field hockey.	1 per 20,000	15-30 minutes travel time	Same as field hockey.
Soccer	1.7 to 2.1A	195' to 225' x 330' to 360' with a 10' minimum clearance on all sides.	Same as field hockey.	1 per 10,000	1-2 miles	Number of units depends on popularity. Youth soccer on smaller fields adjacent to schools or neighborhood parks.

USING THE PER CAPITA MULTIPLIER METHOD TO EVALUATE THE FISCAL IMPACT OF A DEVELOPMENT PROPOSAL

3,000 Unit Planned Unit Development	Number of Dwelling Units (1)	Demographic Multipliers		Total Residents (3)	Total Students (3)	Annual Expenditure Per Capita/ Municipal ² (4)	Annual Expenditure Per Pupil/ School District ²	Total Annual Expenditures Municipal ⁴ (5)	Total Annual Expenditures School District ⁴ (5)	Total Annual Public (Municipal and School District) Expenditures (6)
		Household Students (2)	Students (2)							
RESIDENTIAL										
Townhouses (1,500)	250	1.699	0.000	425	—	\$ 129	\$ 1,850	\$ 54,825	\$ —	\$ 54,825
1 2 bedroom (elderly)	1,000	2.630	0.304	2,630	304	129	1,850	339,270	562,400	901,670
3 bedroom	250	4.110	1.311	1,028	329	129	1,850	132,612	606,800	739,412
Garden Apartments (1,000)										
1 bedroom	700	1.722	.011	1,205	8	129	1,850	155,445	14,800	170,245
2 bedroom	300	2.525	.200	758	60	129	1,850	97,782	111,000	208,782
Single Family Homes (500)										
3 bedroom	250	3.776	1.111	944	278	129	1,850	121,776	514,300	636,076
4 bedroom	250	4.655	1.911	1,164	478	129	1,850	150,156	884,300	1,034,456
Total Residential	3,000	—	—	8,154	1,238	—	—	1,051,866	2,290,300 ⁵	3,342,166 ⁸
NONRESIDENTIAL										
Community Shopping Center (100,000 Ft ²)	—	—	—	—	—	—	—	12,353 ⁹	—	12,353
TOTALS	3,000	—	—	8,154	1,456	—	—	\$ 1,064,219	\$ 2,290,300 ¹⁰	\$ 3,354,519 ¹⁰

Notes: ¹ Equals the demographic multipliers shown in column (2) multiplied by the number of units shown in column (1).
² Includes operating and debt service for capital facilities.
³ The figure in parentheses is the actual subtotal of column (3) for projected pupils. Since the multipliers in column (2) are total school-age children rather than public school-age children and in this particular locale 15 percent of school-age children attend public schools, projected local pupils has been multiplied by 85 percent to reflect the actual anticipated public school burden.
⁴ Equals total residents/students multiplied by cost per resident/student.
⁵ Equals total public school-age children (1,238) multiplied by the cost per pupil (\$1,850). This is the figure the analyst is interested in because it indicates actual generated public costs.
⁶ Equals total school-age children (1,456) multiplied by the cost per pupil (\$1,850). It is also equal to the sum of the shown subtotals.
⁷ Equals \$1,051,866 + \$2,290,300.
⁸ Equals \$1,051,866 + \$2,693,600.
⁹ See page 51.
¹⁰ Totals include only public school-age children school district costs (\$2,290,300).

APPENDIX C
LAND COST ESTIMATES

LAND COST IN PATTERSON¹

	Number of acres	Price	Cost per acre	Location
1)	1	\$89,000	\$89,000	
2)	3	\$119,000	\$39,667	
3)	1+	\$75,000	\$75,000	Steinbeck Hills
4)	1.5	\$69,000	\$69,000	Bridle Ridge
5)	1+	\$70,000	\$70,000	Ice Pond View
6)	.25	\$12,000	\$48,000	Putnam Lake
7)	.33	\$23,000	\$69,700	Putnam Lake
8)	2.5	\$79,900	\$31,960	Bullet Hole Rd.
9)	1	\$77,500	\$77,500	
10)	1.5	\$95,000	\$63,333	
11)	20	\$250,000	\$12,500	
12)	1.5	\$69,000	\$46,000	
13)	2.5	\$69,000	\$27,600	
14)	2	\$79,900	\$39,950	
15)	1+	\$59,000	\$59,000	
16)	11.5	\$125,000	\$10,870	
17)	1	\$85,000	\$85,000	
18)	11	\$165,000	\$15,000	
19)	1	\$69,900	\$69,900	
20)	2	\$79,900	\$39,950	
21)	2.5	\$75,000	\$30,000	

Total \$1,068,930

Average cost of land per acre is \$50,901

¹ Figures taken from actual real estate listings and represent a random sampling for the year 1992

APPENDIX D

1990 Census Data

Population Trends:

Source Putnam county Division of Planning

Demographic Multipliers:

Source: Fiscal Impact Handbook, Burchell & Listokin

PERSONS BY RURAL RESIDENCE		PERSONS BY AGE AND SEX		UNR-OCUPIED UNITS		H1/3/5 TENURE AND VACANCY STATUS	
POPULATION	PERCENT	MALE	FEMALE	LESS THAN \$15,000	RENTER OCCUPIED	OTHER OCCUPIED	TOTAL
TOTAL	83941	41895	42046	1059	2048	3119	3189
NONHISPANIC	80016	41895	42046	1059	2048	3119	3189
HISPANIC	384						
WHITE	80016						
BLACK	806						
AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
TOTAL	81695	41895	42046	1059	2048	3119	3189
WHITE	80016						
BLACK	806						
AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
TOTAL	81695	41895	42046	1059	2048	3119	3189
WHITE	80016						
BLACK	806						
AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
TOTAL	81695	41895	42046	1059	2048	3119	3189
WHITE	80016						
BLACK	806						
AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
TOTAL	81695	41895	42046	1059	2048	3119	3189
WHITE	80016						
BLACK	806						
AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
TOTAL	81695	41895	42046	1059	2048	3119	3189
WHITE	80016						
BLACK	806						
AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
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WHITE	80016						
BLACK	806						
AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
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BLACK	806						
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AMERICAN INDIAN/PAC ISL	93						
OTHER RACE	743						
TOTAL	81695	41895	42046	1059	2048	3119	3189
WHITE	80016			</			

4 PERSONS BY URBAN/RURAL RESIDENCE		P5/11/12 PERSONS BY AGE AND SEX		H23/A/B/C VALUE OF SPECIFIED OWNER-OCCUPIED UNITS		H1/3/5 TENURE AND VACANCY STATUS	
URBAN	RURAL	MALE	FEMALE	LESS THAN \$15,000	\$15,000 TO 19,999	OWNER OCCUPIED	RENTER OCCUPIED
8679	0	61	56	\$15,000 TO 19,999	\$20,000 TO 24,999	3	0
0	0	178	161	\$25,000 TO 29,999	\$30,000 TO 34,999	0	1
0	0	137	129	\$35,000 TO 39,999	\$40,000 TO 44,999	2	2
0	0	63	58	\$45,000 TO 49,999	\$50,000 TO 59,999	2	2
8679	0	141	70	\$60,000 TO 74,999	\$75,000 TO 99,999	9	1
0	0	68	166	\$100,000 TO 124,999	\$125,000 TO 149,999	24	91
0	0	5	238	\$150,000 TO 174,999	\$175,000 TO 199,999	185	321
0	0	214	184	\$200,000 TO 249,999	\$250,000 TO 299,999	428	302
2250	2804	339	101	\$300,000 TO 399,999	\$400,000 TO 499,999	302	301
0	0	170	101	\$500,000 OR MORE	LOWER QUARTILE	124	124
0	0	113	41		MEDIAN	101	101
0	0	66	52		UPPER QUARTILE	18	18
8419	163	59	85			26	26
0	0	202	154			185	185
0	0	356	419			321	321
0	0	818	440			428	428
0	0	911	402			302	302
0	0	616	348			301	301
0	0	669	276			124	124
0	0	566	201			101	101
0	0	435	130			18	18
0	0	278	54			26	26
0	0	106	85			137,700	137,700
0	0	68	99			\$169,200	\$169,200
0	0	111	103			\$214,000	\$214,000
0	0	81	109				
0	0	55	78				
0	0	59	105				
0	0	29	4259				
0	0	4420	4259				
0	0	8679	4259				
0	0	616 HOUSEHOLD TYPE					
0	0	FAMILY HOUSEHOLDS					
0	0	MARRIED COUPLE					
0	0	MALE HOUSEHOLDER					
0	0	NO WIFE PRESENT					
0	0	FEMALE HOUSEHOLDER					
0	0	NO HUSBAND PRESENT					
0	0	NONFAMILY HOUSEHOLDS					
0	0	MALE HOUSEHOLDER					
0	0	FEMALE HOUSEHOLDER					
0	0	176					
0	0	9					
0	0	2					
0	0	0					
0	0	0					
0	0	8					
0	0	49					
0	0	8					
0	0	213					
0	0	8466					
0	0	176					
0	0	9					
0	0	2					
0	0	0					
0	0	26					
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0	0	8466					
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0	0	8466					
0	0	154					

TABLE 5
POPULATION TRENDS BY TOWN AND VILLAGE
PUTNAM COUNTY 1930-2000
YEAR AND PERCENT CHANGE

GEOGRAPHIC AREA	1930	1940	% Chg. '30/40	1950	% Chg. '40/50	1960
TOWNS:						
Patterson	1,196	1,328	11.0%	2,075	56.3%	2,853
Kent	770	1,546	100.8%	2,146	38.8%	3,924
Philipstown	3,982	4,246	6.6%	4,332	2.0%	5,918
Putnam Valley	859	1,187	38.2%	1,908	60.7%	3,070
Carmel	3,434	4,195	22.2%	5,458	30.1%	9,113
Southeast	3,503	4,053	15.7%	4,388	8.3%	6,844
*VILLAGES:						
Brewster	1,664	1,863	12.0%	1,810	-2.8%	1,714
Cold Spring	1,784	1,897	6.3%	1,788	-5.7%	2,083
Nelsonville	470	457	-2.8%	N/A	N/A	N/A
=====						
PUTNAM COUNTY	13,744	16,555	20.5%	20,307	22.7%	31,722

GEOGRAPHIC AREA	% Chg. '50/60	1970	% Chg. '60/70	1975	% Chg. '70/75	1980
TOWNS:						
Patterson	37.5%	4,124	44.5%	6,171	49.6%	7,247
Kent	82.9%	8,106	106.6%	10,605	30.8%	12,433
Philipstown	36.6%	7,717	30.4%	8,345	8.1%	9,155
Putnam Valley	60.9%	5,209	69.7%	7,504	44.1%	8,994
Carmel	67.0%	21,639	137.5%	25,721	18.9%	27,948
Southeast	56.0%	9,901	44.7%	10,419	5.2%	11,416
*VILLAGES:						
Brewster	-5.3%	1,638	-4.4%	1,447	-11.7%	1,650
Cold Spring	16.5%	2,083	0.0%	2,013	-3.4%	2,161
Nelsonville	N/A	583	N/A	613	5.1%	567
=====						
PUTNAM COUNTY	56.2%	56,696	78.7%	68,765	21.3%	77,193

*Included in town counts.

SOURCE: U.S. Bureau of the Census
Projections for 1985-2000 made by the Putnam County Division of
Planning and Development using the Arithmetic Projection Method

GEOGRAPHIC AREA	% Chg. '70/80	% Chg. '75/80	1985	% Chg. '80/85	1990	% Chg. '80/90
TOWNS:						
Patterson	75.7%	17.4%	8,109	11.9%	8,971	23.8%
Kent	53.4%	17.2%	14,148	13.8%	15,862	27.6%
Philipstown	18.6%	9.7%	9,959	8.8%	10,763	17.6%
Putnam Valley	72.7%	19.9%	10,175	13.1%	11,356	26.3%
Carmel	29.2%	8.7%	31,697	13.4%	35,445	26.8%
Southeast	15.3%	9.6%	12,587	10.3%	13,758	20.5%
*VILLAGES:						
Brewster	0.7%	14.0%	1,624	-1.6%	1,597	-3.2%
Cold Spring	3.7%	7.4%	2,223	2.9%	2,285	5.7%
Nelsonville	-2.7%	-7.5%	565	-0.4%	562	-0.9%
PUTNAM COUNTY	36.2%	12.3%	86,675	12.3%	96,155	24.6%

GEOGRAPHIC AREA	% Chg. '85/90	1995	% Chg. '90/95	2000	% Chg. '90/00	% Chg. '95/00
TOWNS:						
Patterson	10.6%	9,991	11.4%	11,010	22.7%	10.2%
Kent	12.1%	17,852	12.5%	19,841	25.1%	11.1%
Philipstown	8.1%	11,571	7.5%	12,379	15.0%	7.0%
Putnam Valley	11.6%	12,737	12.2%	14,118	24.3%	10.8%
Carmel	11.8%	39,834	12.4%	44,222	24.8%	11.0%
Southeast	9.3%	14,911	8.4%	16,036	16.6%	7.5%
*VILLAGES:						
Brewster	-1.7%	1,578	-1.2%	1,538	-2.4%	-1.3%
Cold Spring	2.8%	2,319	1.5%	2,352	2.9%	1.4%
Nelsonville	-0.5%	559	-0.5%	555	-1.2%	-0.7%
PUTNAM COUNTY	10.9%	106,896	11.2%	117,606	22.3%	10.0%

*Included in town counts.

SOURCE: U.S. Bureau of the Census
 Projections for 1985-2000 made by the Putnam County Division of
 Planning and Development using the Arithmetic Projection Method

< **Town of Patterson** >

APPENDIX E

Residential Projects
Single Family-Proposed

Project name	Number of lots	Project name	Number of lots
Burdick Farms	81	Ginsburg	17
Cornwall Hill	17	Gordon	9
Deerwood	34		
		<u>TOTAL</u>	<u>158</u>

Single Family
Approved and Under Construction Since 1990

Project name	Number of lots	Project name	Number of lots
Astro	27	Dorset Hollows	35
Big Elm	25	Farese	8
Bolder Brook	4	Hawks Aires	4
Bridle Ridge	12	Jasper Woods	10
Burdick Glen North	12	Lamorte	4
Car Dee	9	Meadowbrook Farms	41
Chestnut Knolls	21	O'Hara	31
Clarke	5	Rosewood	10
Country Hill Estates	11	Shaw	9
Dog Street	3	Quaker Manor	10
		<u>TOTAL</u>	<u>291</u>

Multi-family
Proposed Under Construction

Project Name	Number of Lots	Project Name	Number of Lots
Fairview Ponds	39	Cornwall Meadows	97
		<u>TOTAL</u>	<u>136</u>

<Town of Patterson>

APPENDIX F

Putnam County Highways
1992 Average Annual Daily Traffic

Route Name	Average Annual Daily Traffic	Route Name	Average Annual Daily Traffic
Cornwall Hill Road south end by Rt. 164	1,100	Cornwall Hill Road north end by Rt. 311	1,686
Doansburg Road by Green Chimneys	6,377	Doansburg Road by Haviland Hollow Rd.	1,915
Farm-to-Market north of Foggingtown Rd.	1,667	Farm-to-Market north end by Rt. 164	1,018
Fair St. (1991) south of Towners Rd.	4,274	Fair St. north end by Rt. 311	3,077
Fairfield Drive west end by Doansburg Rd	7,783	Fairfield Drive east of State Line	3,442
Harmony Rd. middle	550	Haviland Drive south end	6,682
Haviland Drive north end	804	Haviland Drive west end	2,689
Haviland Hollow Rd. east end	3,678		

<Town of Patterson>

APPENDIX G

Historical Sites

1. Patterson Historical society, “Little Red School House”, South Street
2. Cosan Realty Co., South Birch Hill Road
3. John W. Neubauer, Haviland Hollow road
4. Elsa Mohn, Haviland Hollow Road
5. Helen Dampsey, Haviland Hollow Road
6. Robert Bligh, East Branch Road
7. Residence (Benjamin Cowl House), East Branch Road
8. Richard L. Rapp, Route 22
9. Watchtower Bible and Tract Society, Route 22
10. Frank Zito, Route 311
11. Miss Haytis House, Route 311 (owner now is Florentine El Bouchenni)
12. Michael Colt, Maple Avenue
13. Michael Abene, Route 311
14. Raymond Maquite, Route 311 and Cornwall Hill Road
15. Donald Gipson, Cornwall Hill Road
16. Robert Decatur, Cornwall Hill Road
17. Garrison House, Cornwall Hill Road
18. Thomas T. Keasbey, Couch Road
19. Hollis, Route 164
20. Daniel Fisher, Elm Tree Road and Old Route 22
21. Mark Morrison, Old Road
22. Clarice Elting, Route 22 and Ballyhack Road
23. F.W. Brickmann, Elm Tree Road
24. Frank Plunkett, Route 164 and Farm to Market Road
25. Richard Harvey, Cornwall Hill Road and Route 164
26. John Allen, Bullet Hole Road
27. Daniel Mooney, Bullet Hole Road
28. Richard Colhoun, Bullet Hole Road
29. George Shawe, Ice Pond Road
30. J. Henkel, Bullet Hole Road
31. Benson Green, Bullet Hole Road and Fain Street
32. Shirley Creazzo, Fair Street
33. Roger Kreigl, Fair Street
34. Orator Woodward, off of Route 311
35. Hurley Parrish, Route 311
36. Reginald Powe, Cushman Road
37. Paul Lanigan, Route 311 (now Carmine Lopane)
38. Marilyn Badaracco, Cushman Road and Route 311
39. Patterson Baptist Church, Route 311
40. Art O’Dell, Route 311 (C. Peck House)

APPENDIX G continued

Historic Sites

41. Charles deRahm, Cushman Road
42. Jeffrey Leshaw, Cushman Road
43. Elizabeth Montgomery, Cushman Road
44. Keith Irvine (St. Johns House) Cushman Road
45. Kevin Kitowski, “Brick House” on Cross Road and Brick House Road
46. Warner Katterhager, Mooney Hill Road and Cushman Road
47. Jonathan Levy “Baldwin House” on Mooney Hill Road
48. Robert LaRoche, Route 292
49. Brunow Brothers, Front Street
50. Salem Management Group, Front Street
51. Ralph Vignogna, Front Street
52. Ralph Vignogna, Front Street
53. Conant Realty Corp., Front Street
54. James Joseph Jackson, Center Street
55. Christ Episcopal Church, Route 311
56. Francis Hayden, Route 311
57. Lyman Beecher Inc., South Street
58. Lyman Beecher Inc., South Street
59. Thomas Brown, Route 311
60. Patterson Presbyterian Church, Route 311
61. Howard White, Soute Street
62. Patterson Presbyterian Church, Route 311
63. Salem Management Corp., Front Street
64. Rosebud Development , Route 311

<Town of Patterson>

APPENDIX H
LIST OF USES

Use	Res.	GB	C-1	I	CR	Special Use Permit	Floating Zone
Agriculture	X						
Airports/heliports							
Amusement Park ¹						X	
Apartment buildings							
Arcades ²						X	
Archery ¹						X	
Athletic Clubs					X		
Athletic Fields (Baseball, Basketball, Football, Soccer, Lacrosse)						X	
Banks		X	X				
Bars		X	X				
Batting and Pitching Cages ¹						X	
Betting Parlors			X			X	
Bike Trails (Non-Motorized)						X	
Billboards							
Bowling alleys			X				
Camping						X	
Car Sales			X			X	
Carwash			X			X	
Cemeteries	X					X	
Children's Camp						X	
Churches	X					X	

<Town of Patterson>

Use	Res.	GB	C-1	I	CR	Special Use Permit	Floating Zone
Communication towers				X		X	
Composting facilities/commercial				X		X	
Concerts						X	
Conference Centers					X		X
Contractors/Construction storage yards				X			
Customary personal services		X	X				
Day care centers	X	X					
Deli	X	X					
Discount store			X	X		X	
Dry cleaners		X	X				
Educational Institutions							X
Power generation (electric, steam,) facilities							
Equestrian Centers							X
Fairs						X	
Farms	X					X	
Fast Food establishments		X	X				
Festivals						X	
Firearm Ranges ¹							
Fitness club					X		
Flea Markets						X	
Funeral Parlors	X					X	
Game Farm Preserve						X	
Garage (commercial)			X	X			
Gas stations/deli			X	X			

<Town of Patterson>

Use	Res.	GB	C-1	I	CR	Special Use Permit	Floating Zone
Gas stations/repair			X	X			
Golf course						X	
Golf driving range						X	
Golf, Miniature						X	
Hardware/paint		X	X				
Haunted Hay Rides						X	
Haunted Houses						X	
Health Clubs						X	
Heavy manufacturing				X			
Hiking						X	
Hockey						X	
Home Occupation	X	X	X	X		X	
Horse Farms/Equestrian Facilities						X	
Horse Trails						X	
Hospitals				X		X	
Hot Air Balloons						X	
Hotels/motels/boarding							
Ice Skating						X	
Jogging Fitness Trails						X	
Junkyards/salvage				X		X	
Kennels	X		X	X		X	
Landscape nurseries	X		X	X		X	
Laundry services		X	X				
Libraries/museums/art centers							X

<Town of Patterson>

Use	Res.	GB	C-1	I	CR	Special Use Permit	Floating Zone
Light manufacturing			X	X			
Livestock, feedlots	X					X	
Medical/dental facilities (medical office buildings)		X	X				
Membership Clubs and fraternal lodges							X
Mining				X		X	
Mobile home parks	X					X	
Motor vehicles/sales			X			X	
Motor vehicles/repair			X	X			
Motor vehicles/autobody			X	X			
Museums						X	
Nature Centers						X	
Nuclear facilities							
Nurseries/greenhouses	X		X	X		X	
Nursing Homes							X
Office/warehouse			X				
Open Play areas						X	
Photo labs							
Printing and copy centers		X	X				
Private camps							X
Public utility structures and Private Utilities							X
Racketball						X	
Real Estate Offices		X	X				
Recreation facilities/commercial					X		
Recreation facilities/not-for-profit					X		X

<Town of Patterson>

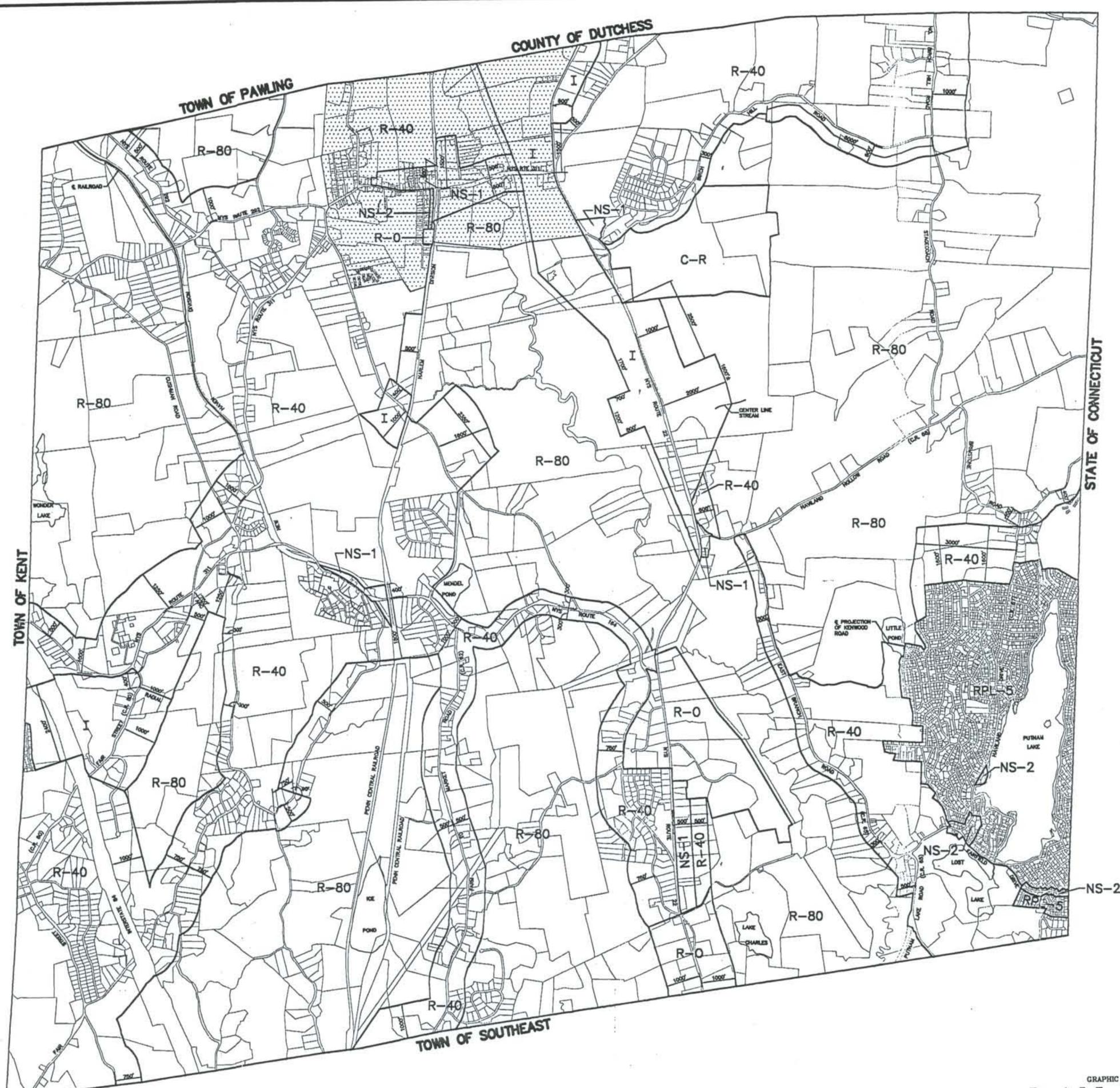
Use	Res.	GB	C-1	I	CR	Special Use Permit	Floating Zone
Recycling Centers/commercial				X		X	
Research/biotech			X	X			
Restaurants		X	X				
Retail stores/small			X	X		X	
Riding academies/public stables							
Roller Skating Rink						X	
Schools							
Shooting clubs							
Shopping centers/large			X	X		X	
Skate Board Facility ¹						X	
Skiing					X		
Skiing, Cross Country						X	
Sludge treatment/disposal							
Soccer						X	
Solid waste disposal							
Spas						X	
Sporting Goods Stores ¹							
Stadiums							
Storage facilities			X	X		X	
Swimming Pools						X	
Tattoo parlors			X			X	
Tennis Center						X	
Theaters							X
Topless Clubs							

<Town of Patterson>

Use	Res.	GB	C-1	I	CR	Special Use Permit	Floating Zone
Trade shops		X	X	X		X	
Transfer stations							
Truck terminals				X		X	
Veterinary hospitals		X	X	X			
Volleyball						X	
Wastewater treatment plants							
Warehouses				X			
Water Parks						X	
Water Slides ¹							
Wholesale			X	X			
Youth Center						X	
Zoo						X	

¹ These uses may be permitted if pre-determined design criteria are met (i.e minimum lot size, location) as listed in the Zoning Board of Appeals Recreation Study dated June 10, 1999

² Permitted only as a accessory use.



GENERAL NOTES:

1. The base mapping, including Zoning District Boundary Lines, shown hereon was provided to the Town in digital format by the Putnam County GIS Department.

LEGEND

RESIDENTIAL

ZONING DISTRICTS:

RPL-5: PUTNAM LAKE RESIDENCE (5 - LOTS)
 R-40: 40,000 S.F. MINIMUM LOT SIZE
 R-80: 80,000 S.F. MINIMUM LOT SIZE

BUSINESS:

NS-1: NEIGHBORHOOD SHOPPING = 20,000 S.F. MIN. LOT SIZE
 NS-2: NEIGHBORHOOD SHOPPING = 10,000 S.F. MIN. LOT SIZE
 R-0: RESEARCH-OFFICE = 2 ACRE MIN. LOT SIZE
 I: INDUSTRIAL = 2 ACRE MIN. LOT SIZE
 C-R: COMMERCIAL-RECREATION = 200 ACRES MIN. LOT SIZE

INDICATES LIMITS OF THE HAMLET OF PATTERSON AS DEFINED IN SECTION 154-3 OF THE PATTERSON CODE.

NO.	BY	REVISION	DATE

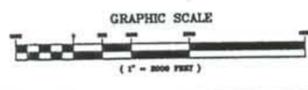
**GAINER - WILBUR
CONSULTING ENGINEERS, P.C.**

7 BRAD STREET 807 POLLAKOW AVENUE 605 AIRPORT DRIVE
 P.O. BOX 487 P.O. BOX 8208 P.O. BOX 2549
 PATTERSON, NY 12864 NEWBURGH, NY 12560 S. BURLINGTON, VT 05407
 (845) 884-1256 (845) 882-3430 (802) 864-0213
 (845) 880-1700 FAX (845) 888-8113 FAX (802) 864-0186 FAX

**TOWN OF PATTERSON
PUTNAM COUNTY, NEW YORK
MASTER PLAN**

EXISTING ZONING MAP

DATE: 12/22/06 DRAWN BY: AS SHOWN CHECKED BY: [] DESIGNED BY: [] PLOT NO.: 33-0513 SHEET NO.: MAP L



FILE LOCATION: C:\P\1513\1513.MXD