Topic:	Low Impact Development and Green Infrastructure; Healthy Communities
Resource Type:	Comprehensive Plan
State:	New York
Jurisdiction Type:	Municipal
Municipality:	Marlborough
Year *(adopted, written, etc.)*:	2002
Community Type – applicable to:	Suburban; Rural
Title:	Resource Protection and Open Space
Document Last Updated in Database:	December 31, 2017

Abstract

Marlborough is increasingly concerned about the quality of their water (most of the drinking water is supplied by private wells). To combat this, their comprehensive plan suggests maintaining and increasing the amount of vegetation adjacent to streams, revising regulations when necessary to allow the planning board to require information regarding water quality of proposed on-site wells, and better locating septic tanks to avoid as much concentration of nitrate in the drinking water as possible.

These policies will help to maintain the quality of Marlborough's drinking water, helping to avoid serious health risks to their residents. Besides the inherent health risks, prolonged periods of overly contaminated drinking water can cause financial hardships, as well as serious disease.

Resource

Town of Marlborough Comprehensive Plan Update

Stream Corridors

The land directly adjacent to natural water bodies has a water table close to the surface and sometimes becomes subject to floods. These streamside borders often contain the highest diversity of wildlife. The vegetation adjacent to streams are crucial for protection of water quality. The clearing of natural vegetation from stream corridors due to development or agricultural practices has led to increased pollution, loss of wildlife habitat and flooding downstream. Since most streams flow through private property, corrective measures are dependent upon the participation of property owners.

The benefits of streamside protection include improved percolation and groundwater recharge, reduced sedimentation, filtration of excess nutrients and chemical pollutants, reduction of stream bank erosion, moderation of flooding, lowering of water 55 temperatures and addition of woody and leaf debris to improve aquatic habitat, provision of safe corridors for animals, and the provision of more visual diversity and beauty.

The Town can protect stream corridors through a minimum stream setback in the zoning ordinance, as well as a requirement to subtract sensitive lands from lot yield calculations. A local wetlands ordinance, as mentioned in the section above, could be designed to also provide protection to stream corridors. Stream corridors can also be protected from new residential development through the use of cluster subdivision design. Guidelines for the protection of streams could be codified in Town regulations. Such guidelines could include the provision of a vegetative filter along the stream corridor, which would increase in width in areas where soils are gravelly, sandy and well drained or have low phosphorus absorption capacity, where slopes are steep, where the stream is adjacent to wetlands, or where vegetation lacks forest species or a grassy strip; and the use of a wide variety of native trees, shrubs and plant species, including species tolerant of flooding.

Marlborough's full Comprehensive Plan can be found here: http://townofmarlboroughny.org/DocumentCenter/Home/View/466.

TOWN OF MARLBOROUGH
COMPREHENSIVE PLAN UPDATE

Adopted April 22, 2002

Town of Marlborough
Town Council

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Eric Affuso, Councilman
John Bellucci, Councilman
Betty Ann Diorio, Councilwoman
Peter Neckles, Councilman

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Introduction

The document, which follows, has been prepared in accordance with Section 272-a of the New York State Town Law. This section grants towns the authority to prepare town comprehensive plans, formerly known as town master plans. The State Legislature finds that among the most important powers granted to a town government is the authority and responsibility to undertake town comprehensive planning and to regulate land use for the purpose of protecting the public health, safety and general welfare of its citizens. Preparation of a comprehensive plan is encouraged but not required by the Town Law.

A proposed town comprehensive plan can be prepared by the Town Board or if the Town Board so directs, the comprehensive plan can be prepared by the Planning Board or a special board. In this case, the Town Board directed the Town of Marlborough Greenway Committee to prepare the proposed comprehensive plan. The Greenway Committee has met over the past two years to draft the comprehensive plan that follows. Actual adoption of the comprehensive plan is a function performed by the Town Board. The Town Board determines the maximum intervals at which the adopted plan shall be reviewed.

Section 272-a of the New York State Town Law requires that the Town of Marlborough Greenway Committee hold one or more public hearings on the proposed comprehensive plan to assure the opportunity for citizen participation. In addition, the Town Board, within ninety days of receiving the Greenway Committee's recommendations on the plan and prior to the adoption of the plan, is required to hold a public hearing on the proposed plan. In accordance with Section 239-m of the New York State General Municipal Law, the Town Board or the Town of Marlborough Greenway

Committee is required to refer the proposed comprehensive plan to the Ulster County Planning Department for review and recommendation, prior to adoption. Once adopted, the comprehensive plan is required to be filed with the town clerk and the county planning agency.

Section 272-a of the Town Law also directs that comprehensive plans for towns containing all or part of an agricultural district or lands receiving agricultural assessments shall be subject to the provisions of the New York State Agriculture and Markets Law pertaining to the administration of local planning and land use decision making. Both newly adopted and amended town comprehensive plans are required to take into consideration any applicable county agricultural and farmland protection plan.

In addition to the requirements described above, the Town Board needs to meet the procedural requirements of the New York State Environmental Quality Review (SEQR) regulations before adopting the comprehensive plan. This requires the preparation of an Environmental Assessment Form (see Appendix A), which provides data and information on a proposed action and aids in determining whether the proposed action, in this case the adoption of a revised comprehensive plan, would have a significant impact on the environment. The SEQR regulations also provide for the coordination of review of the proposed action with other involved or interested agencies and the establishment of a lead agency for review of the action. In this case, the Town Board would appropriately establish itself as the lead agency.

In accordance with the Town Law a "town comprehensive plan" means the materials, written and/or graphic, including but not limited to maps, charts, studies, resolutions, reports and other descriptive material that identify the goals, objectives, principles, guidelines, policies, standards, devices and instruments for the immediate and long range protection, enhancement, growth and development of the town located outside the limits of any incorporated village or city.

The foregoing may be expressed more simply by five questions which summarize the process of comprehensive planning as well as the content of a comprehensive plan:

1. Where are we now?
2. Where are we heading based on current trends?
3. Where do we want to go?
4. How do we get there?
5. What actions do we take to get there?

Each of the above questions are addressed in some fashion in this document.

A comprehensive plan can consider a wide range of topics such as location and intensity of land uses, agricultural uses, historic and scenic resources, natural resources, demographic and social economic trends, transportation facilities, public utilities, housing resources and future housing needs, parks and recreation facilities and economic conditions. The topics discussed and the level of detail devoted to each topic is adapted to the specific and unique requirements of each town. In the case of Marlborough, it was determined that the comprehensive plan should emphasize land use, transportation, natural resources, agriculture, economic development, community enhancement, utilities and historic resources issues. These topics have been organized into six main elements or sections as follows:

- Land Use
- Circulation and Transportation
- Resource Protection and Open Space
- Economic Development and Community Enhancement
- Community Facilities and Utilities
- Hamlet Development and Historic Resources

In 1970 a Town Zoning Plan was prepared and adopted. This plan, (hereinafter referred to as the 1970 Master Plan) assessed population trends, housing quality, land use and economic conditions with particular emphasis on the future of agriculture in the town. A land use plan was
prepared which drew from, among other sources, a detailed survey of land uses in the town, projections of future population and economic conditions, a study of Route 9W characteristics and the goals and objectives formulated by the Planning Board. Proposed zoning regulations adopted in the early 1970's were based on the development plan.

The 1970 land use survey and U.S. Census of Agriculture data confirmed the Town's agricultural character with 64 percent of Marlborough's total land area in agricultural use. Vacant land accounted for 24.5 percent of total land area while residential uses occupied only 5.4 percent. Consequently, much of the economic analysis report was devoted to an assessment of the importance of agriculture. A special study of the Route 9W corridor considered the state highway in terms of safety, existing and potential land uses, appearance and regional functions. In terms of safety, the State Department of Transportation had rated the northernmost 0.93 mile of 9W's 6.33 Marlborough miles as "inadequate" and the southernmost 3.37 miles as "critically inadequate" based on the ratio of the highway's rated capacity to its traffic volume in those sectors. In other words, slightly more than two-thirds of the Marlborough section of 9W received a "less than adequate" rating in 1970. The only improvement contemplated or in progress at that time was the 0.59-mile stretch of Rosoff's Hill. The study concluded with a list of recommendations for local actions to maintain or enhance the safety, serviceability and appearance of the Marlborough sector of Route 9W.

The 1970 Master Plan suggested five goals for the land use plan as follows:

1. Compatibility between existing and future land uses.
2. Compatibility of future land uses with existing physical conditions.
3. Minimizing public cost of community development.

4. Support for safe and efficient transportation.
5. Maintaining community appearance and protecting natural assets.

The land use plan and goals of the 1970 Master Plan were implemented by the Town's first zoning ordinance which was adopted by the Town Board in April 1972. The Town Board has implemented goals for improving community facilities by improvements to the sewer district and expansion of the water districts. The Town park has also been expanded and improved. Completion of 9W widening on Rosoff's Hill has improved traffic conditions in that sector and installation of a traffic light at the intersection of 9W and Milton Turnpike has improved safety and traffic movement at that point.

In 1992 a draft Master Plan update was prepared by the Planning Board but not adopted. Although not adopted, data contained in the 1992 draft is informative since it tracks changes in the twenty-year period from 1970 to 1990. Some of the most significant changes related to land use. Residential use, which accounted for only 5.4 percent of the Town's total land area in 1970, had increased fivefold by 1990 to occupy 27.5 percent of total land area by 1990. The increase in residential land use was at the expense of agricultural use, which declined from 64% of the total land area in 1970 to 42.1% in 1990. The amount of land classified as vacant decreased by approximately six percent. Changes in commercial and industrial land use were less significant.

Four principal goals to guide the development of Marlborough were proposed in the 1992 draft update, which were similar to the goals in the 1970 Master Plan. The four goals proposed in 1992 were as follows:

- To absorb future growth in ways to preserve the Town's rural character.
- To support the development of the hamlets as attractive, efficient centers for future development.

- To anticipate and mitigate negative environmental impacts from future development.

- To relate development to appropriate transportation access.

The above goals are still valid and are supplemented by the following additional goals:

- To establish a plan for the conservation of community and natural resources.

- To encourage commercial development in appropriate areas.

- To encourage means to preserve agricultural lands and practices

- To develop a plan to protect water resources

- To develop a plan to protect historic resources.

II. Regional Setting

The Town of Marlborough is located in southeastern Ulster County, New York on the west bank of the Hudson River. The Town is immediately adjacent to Orange County to the south and Dutchess County, which lies across the Hudson River to the east. The Towns of Poughkeepsie and Wappinger Falls (in Dutchess County) lie to the east across the Hudson River, the Town of Newburgh (in Orange County) lies to the south, the Town of Plattekill (Ulster County) to the west and the Town of Lloyd (Ulster County) to the north.

Ulster County lies approximately midway between New York City and Albany. Due to its location, Ulster and adjacent counties are referred to as the Mid-Hudson Region. The Mid-Hudson economy has been traditionally dependent on agriculture and tourism. Manufacturing became more important in the second half of the twentieth century when IBM manufacturing facilities were established in Dutchess and Ulster Counties. Since 1990, there has been a decline in manufacturing which is a reflection of IBM's fortunes. Agriculture and tourism continue to remain important.

The traditional apple industry is the most important agricultural sector. The soils, topography and climate of Ulster County and Marlborough are well suited to orchard crops. The consistent slopes west of the Hudson River produce wind currents, which keep the air in motion helping to prevent the freezing of sensitive buds in the spring. A large proportion of the Town of Marlborough lies within a State-designated agricultural district (see map in Appendix M).

Over the last decade or so specialty agriculture is becoming more important including wineries, vegetable farming, horse breeding and small fruit tree farming. Local farmers also take advantage of their relative closeness to the New York metropolitan area by selling directly to day trippers and organizing farm related events. Fall is especially busy with harvest festivals and Halloween promotions. As a result, mums and pumpkins

have become cash crops. Population projections by the Ulster County Planning Board in 1988, forecast that the county will follow the growth trends of the region. The county's population grew by 24 percent between 1920 and 1950, from 74,979 to 92,621 persons. Over the next forty years, county population increased by 79 percent, reaching 165,304 persons in 1990. Based on preliminary data from the 2000 census, the population in Ulster County in 2000 was 177,749 persons, an increase of 7.5 percent since 1990. By 2010, the County Planning Board expects the 1950 population to have doubled as it reaches 184,000 persons.

The Town of Marlborough is a member of the Southern Ulster Alliance which is a coalition of five towns and one village that are cooperating on a regional basis to achieve a sustainable economy while maintaining their unique quality of life. The Southern Ulster Alliance, which includes the Towns of Marlborough, Gardiner, Lloyd, Plattekill, New Paltz and the Village of New Paltz, was formed in April 1998 and has the following mission statement:

> "To create a broad based structure for regional cooperation and economic development within the framework of a public process that will lead to the implementation of the goals, ideas and policies."

In 1999, the Countryside Exchange was invited to assist the Southern Ulster Alliance in addressing their goals. The Countryside Exchange brings together international teams of experienced professionals who volunteer to work with local communities on conservation and development issues. The Exchange provides access to resources and new ideas for the community and its professionals serve as a catalyst to facilitate local planning initiatives.

The key issues addressed at the Countryside Exchange program with southern Ulster communities were how can the communities:

- Develop a regional economic strategy

- Market the region
- Pursue and enhance our quality of life

Points of discussion at meetings conducted by the Countryside Exchange were as follows:

- How do we identify development strategies: tourism, agriculture, hi-tech, light manufacturing, etc.?
- How do we create a strategy for business retention, expansion and attraction?
- How do we create and market a cooperative regional tourism and sustainable economic development effort?
- How do we identify a structure for regional land use planning that effectively directs growth to its most appropriate locations?
- How do we create a strategy to maintain sustainable agriculture?
- How do we create a strategy to provide the necessary infrastructure (water, sewer, transportation and telecommunications) to support business and tourism development in a timely and cost-efficient manner?

Issues and findings from the Countryside Exchange program are incorporated into this comprehensive plan where appropriate.

One of the recommendations of the Countryside Exchange was the development of a GIS (Geographic Information System). Ulster County was recently awarded a $74,840 New York State Archives and Administration grant to fund the second year of development of a GIS and web site that will make a wealth of data available to the public. The database will include information on tax parcels, property class recent sales records, state protected wetlands and floodplain boundaries.

To date, information on all properties in the Town of Marlborough that has been digitized includes property dimensions and lot size, water and sewer districts, fire districts, lighting districts, wetlands as identified by the New York State Department of Environmental Protection, hydrological information, zoning districts, agricultural

districts, and voting districts. The Town also intends to include information on sewer and water pipelines, valve systems, catch basins and drainage basins on the GIS.

III. Background Studies

A. Demographics

The Census profile of Marlborough portrays a town whose population growth slowed from approximately twice that of its county during the 1970-1980 decade to one-fifth of that growth between 1980 and 1990, almost the same increase as the county. Preliminary information released from the 2000 census, however, shows that the population grew by 11.2% in Marlborough between 1990 and 2000. In that same period the population growth in Ulster County was 7.5%. (See Appendix B, Table B-1)

During the period 1980-1990, there was an increase of about 9 percent in the percentage of residents who were 65 years old or older and a 20 percent decrease in the percentage of younger residents between the ages of 5 and 24 years of age. Data from the 2000 Census shows that the percentage of residents 65 and older decreased slightly in 2000, while the number of younger residents between 5 and 24 slightly increased. The 1990 population was better educated and more affluent than previous years. The percentage of residents who completed four or more years of college in 1990 almost doubled while median annual household income, adjusted for inflation, rose by almost 25 percent. More working residents were employed in service and retail trade; fewer in manufacturing. The percentage of the work force in white collar occupations increased in 1990; the percentage of those in farming, while almost double the figure for the County as a whole, was nevertheless half of the 1980 percentage for Marlborough. Information regarding education and employment of residents is not yet available for 2000.

Marlborough's population growth from 1990 to 2000 was approximately equal to or greater than most neighboring municipalities, except for the Town of Gardiner, which

grew by 22.4 percent, and Shawangunk, which grew by 19.3 percent.(See Appendix B, Table B-2 and Figure B-1)

In 2000, residents under the age of 18 years accounted for 26.5 percent of the population and residents 65 years and older accounted for 11.7 percent. In general females slightly outnumbered males. (See Appendix B, Table B-5)

Family households constituted just over 70 percent of all households in Marlborough in 2000. About half of all family households had children under the age of 18. (See Appendix B, Table B-6)

Although 375 more people lived in Marlborough in 1990 than in 1980, there was considerable turnover. (See Appendix B, Table B-7) 1,319 person five years old or older moved into Marlborough between 1985 and 1990 from outside of Ulster County.

In 1990, a lower percentage of Marlborough's households (13.2%) had an annual income of less than $15,000 than Ulster County (19.2%) or New York State (23.0%). While the percentage of Marlborough households with an annual income of $75,000 or more was roughly the same as Ulster County and slightly lower than New York State, the percentage of those in the $35,000 to $75,000 annual income range was significantly higher for Marlborough households than for those in Ulster County or New York State. (Appendix B, Table B-8)

Approximately 96 percent of Marlborough's civilian labor force was employed in 1990. (Appendix B, Table B-9) 80 percent of all employed persons drove to work alone; 10 percent joined car pools. The average work destination was a 25-minute journey from home. Employment declined in manufacturing and activities related to agriculture while increasing noticeably in health, education, professional and related services. (See Appendix B, Table B-10) Farming continued to dwindle as an occupation as did the manufacturing occupations of operator, fabricator, laborer, precision production or craft

worker. The percentage of those working in executive, administrative and managerial occupations increased noticeably.

In relation to County population as projected for the year 2010 by the Ulster County Planning Board, Marlborough's population is estimated to increase by approximately 1,000 residents between 1990 and 2010. (See Appendix B, Table B-12)

B. Housing

The comparison of Marlborough and Ulster County 1990 housing characteristics reveals few differences between the two (see Appendix C, Table C-1a). The single-family, owner-occupied unit is the predominant housing type with renter-occupied units accounting for slightly more than 25 percent of all units in either jurisdiction. The percentage of vacant units (7.3%) in Marlborough was approximately half that of the county as a whole (15.2%) and the median value of an owner-occupied unit in Marlborough ($142,200) was 25 percent higher than the average for the county ($114,300). There were similarities between mobile homes as a percentage of all housing units, median rents, sources of water, types of sewage disposal and percentage of units with one or two vehicles available per unit. Based on information provided by the Ulster County Board of Realtors, the median sale price of a single-family residence in Marlborough in 2000 was $165,000 which was 32% higher than the median sale price of $124,950 for the County. It is noted that these figures are based only on the sale of residences listed with the Ulster County Multiple Listing Service.

Preliminary information regarding housing characteristics in 2000 shows that the percentage of vacant housing units in Marlborough dropped from 7.3 percent in 1990 to 4.9 percent in 2000. This was well below the percentage of vacant housing units county-wide in 2000, which was 13.1 percent. (See Appendix C, Tables C-1a and C-1b.)

A review of trends in Marlborough housing characteristics from 1970 to 2000 documents the explosion in housing values and rentals during that period (see Appendix C, Table C-2).. There was a decrease in the number of two-bedroom units per housing unit between 1980 and 1990 and an increase in the number of three and four-bedroom units even as the average household size declined from 2.92 to 2.65 persons per housing unit. Household size increased slightly, to 2.73, in 2000. (See Appendix C, Table C-3)The total number of housing units in the Town increased by 307, or 10.7% between 1990 and 2000.(See Appendix C, Table C-2) This information, combined with the date of construction of housing units as reported in the 1990 Census, indicates that now about one quarter of the housing units in Marlborough have been constructed since 1980. (See Appendix C, Table C-4.)

Supporting previous data concerning residential mobility, 52 percent of all 1990 occupied housing units were moved into between 1980 and March, 1990.(See Appendix C, Table C-6) Information regarding the year householders moved into housing units is not yet available for 2000.

In 1998 Jenny's Gardens, an affordable, state-subsidized housing complex for Seniors, was completed, providing 44 one-bedroom units. This accounts for about a quarter of the 23.2% increase in renter-occupied housing between 1990 and 2000.(See Appendix C, Table C-2)

Current information obtained from the Town building department records indicate that 277 residential building permits were issued between 1991 and 2000 (see Appendix C, Table C-5).

C. Fiscal Characteristics

Tables D-1, D-2a and D-3 in Appendix D are drawn from the annual report by the Office of the New York State Comptroller entitled Special Report on Municipal Affairs. Table D-2b is drawn from information provided by the Town of Marlborough. The tables

offer a summary of the town's indebtedness, expenditures by service rendered (function), and the sources of the town's revenue.

Table D-1 compares the estimated market value (equalized value) of all real property in Marlborough with that of neighboring municipalities in southern Ulster County. As shown on Table D-3 taxes levied on real property provide 60 percent of Marlborough's annual revenue in 1998. Table D-1 relates total debt outstanding at the end of the fiscal year, in this case 1998, to the municipality's borrowing capacity as established by its constitutional debt limit. Not all outstanding debt, i.e., bonds, bond anticipation notes and other notes, affects a municipality's borrowing capacity. For Marlborough in fiscal year 1998, only $509,000 of its $1,874,000 outstanding debt was subject to its constitutional debt limit at that time. Technicalities aside, the relationship between outstanding debt and constitutional debt limit offers a measure of a municipality's capacity to undertake major improvements if necessary.

Table D-2a shows that home and community services accounted for 30.5 percent of Marlborough's expenditures during fiscal year 1998. Another 63.3 percent of the Town's expenditures were divided fairly equally among transportation, police and general government operations. Costs for culture and recreation, which includes parks, recreation programs and libraries, accounted for less than 3 percent of the Town's expenditures.

Expenditures by object classify expenditures by function in terms of current operations costs, essentially personnel and contractual costs, and the costs of major equipment and facilities, also known as capital costs. These two categories equal expenditures by function. Expenditures by object, however, also include debt service, i.e., payments of principal and interest on borrowing via bonds and notes. Compared against the average distribution for New York State town's expenditures by object, Marlborough's expenditures were fairly typical.

In its summary of the percentage of revenue drawn from different sources, Table D-3 shows a slightly higher than NYS average drawn from real property with lower than average percentage drawn from non-property taxes.

The financial picture for the Town of Marlborough has seen a turnaround in recent years.

According to annual reports issues by the State Comptroller's office, Marlborough was on the verge of financial collapse during the mid- '90's. Capital Reserve Fund balances were used to offset regular expenses and reserves were depleted. Regular maintenance was at a low and equipment was not replaced and was rapidly falling into a deteriorated condition. Cash deficits occurred, projects conducted under grants were not reimbursed and accumulated surpluses were non-existent.

In 1998, a Comptroller's auditor spent 9 months in the Town of Marlborough trying to unravel the picture. The resulting reports described unsound practices and a general lack of grasp of finances.

Beginning in 1998, steps were initiated to provide for a substantial overhaul of finances and fiscal operations.

Revenue projections were based on realistic estimates, expenditures were monitored to make sure each department operated within their allotted budget, funds were dedicated to reviving capital expenditure balances and months of effort were dedicated to retrieving un-reimbursed grant monies.

In addition, the Milton Sewer Project was on the verge of being cancelled due to lack of follow-up on the pending award of H.U.D. monies appropriated during previous years. The situation was fixed by dedicated efforts to work with H.U.D. to reclaim the funds dedicated to the project and insure an accurate and appropriate implementation of this necessary project.

While Town general tax rates were maintained within the inflation index, the Highway budget saw significant increases to account for the purchase of new equipment and accomplish additional works. A budget was developed to replace old or worn-out highway equipment over a period of years without incurring debt to finance the transactions.

The Town Board also instituted an outside audit system whereby an accounting firm was contracted to provide annual audits of all departments and the Town's finances as a check and balance system and to insure additional accuracy in the monitoring of expenses and general accounting practices of the Town.

Currently, all recommendations of the State Comptroller and the independent auditors have been implemented resulting in substantially increased protocols and procedures for the conduct of municipal finances.

Tax rates for the Town of Marlborough are either on par with or below surrounding towns and the Town operates in a fiscally prudent manner. Debt is low and current revenues are in slight excess of current expenditures resulting in the regeneration of capital reserve balances to account for major projects on the horizon.

The town budget is broken down into various parts as follows:

General Fund: This fund provides for most departments including police, building, assessor, courts, recreation, town clerk, supervisor and town board, town attorney, elections, central garage, communications, data processing, control of dogs, highway lighting, highway superintendent (but not highway department), general street lighting at intersections throughout the town, social services, youth programs, Milton Library, Town of Marlborough Volunteer Ambulance Corps (TOMVAC), zoning and planning, cemeteries, and all other expenses not included in specific other budgetary lines.

Highway: This includes all highway expenditures (other than the Superintendent's salary and administrative support), including personnel, equipment and repairs.

Sewer Districts: There are two sewer districts in the Town of Marlborough. Each area has it's own assessment related to the costs of operating sewer facilities for the benefit of residents of that area. There are separate districts for the Hamlets of Marlboro and Milton. In addition, there was a expansion of the Marlboro sewer district along Jackson Avenue and the budget includes a special assessment to repay the bond issued to construct this extension.

Marlborough and Milton Fire Departments: These two line items include all revenue and expenses for the Marlborough and Milton Volunteer Fire Departments. The revenue for these departments are collected through the Town of Marlborough and turned over to the respective Fire Departments. Budgets for these departments are not approved by the Town Board but are generated by the respective Board of Fire Commissioners and the Town, under state law, simply serves as a vehicle for the collection of these funds.

Lighting Districts: There are three lighting districts in the Town of Marlborough. These are special assessments that cover the additional expenses of providing street lighting. General intersection lighting in more rural parts of the town are not included in these assessments. The three districts are for the Hamlets of Marlboro and Milton and an additional lighting district for McLaughlin Drive. Only residents of these areas are assessed these expenses.

Revenues are received through a number of methods. Special district assessments are designed to meet the expenses for each special district. In addition, the Town receives significant revenue through various state tax distribution systems, mortgage tax,

franchise tax, zoning and planning fees, transfer station fees and other fees. An encompassing list of revenue sources may be found in the Town Budget.

Highway taxes are assessed separately. The Town Board sets the amount of the highway budget, based on recommendations from the Highway Superintendent, and the Highway Superintendent controls actual expenditures within the limits of the budget.

Finances should remain stable in the Town of Marlborough. With the revitalization of reserve funds, increase in Hamlet redevelopment, particularly in Milton, a prudent fiscal approach and continuous monitoring of expenditures, tax rates should remain in a moderate range.

The total town budget for 2001 is $4,290,393. (See Appendix D, Table D-2b)

There have been significant changes in the Town General Fund and Highway Department Fund since 1998.

The amount budgeted in 1998 for the Town General Fund was $1,808,803. This amount increased to $2,107,888 in 2001. New items in the budget since 1998 are the addition of independent auditors at a cost of $16,000 and GIS Systems and Services at a cost of $11,850. There were increases in Milton Library support (via public referendum) to $40,000 per year, substantial increases in town park and youth programs totaling approximately $31,000, and substantial increases in employee benefits (insurance, social security, workers comp, etc.) totaling approximately $50,000.

These changes account for approx. $123,000 of about $170,000 increases or a total of 9% over three years.

The amount budgeted in 1998 for the Highway Department was $ 677,694. This amount increased to $ 950,893 in 2001. Significant changes in the budget included an increase in general repairs (non-personnel) amounting to $81,500, an increase in

equipment purchases amounting to $104,000, and an increase in snow removal costs to $25,000.

Overall Highway department increases have been approximately $272,000, or about 40% in the last three years, with the items listed above accounting for about $210,500 of that increase.

D. Land Use

The predominant land use in the Town of Marlborough remains agriculture although it is not as preeminent as it once was. A large proportion of the Town's land area is included in a State-designated agricultural district (see map in Appendix M). The results of Land Use surveys conducted in 1969, 1990 and 2001 are contained in Table E-1 in Appendix E. In 1969, agriculture occupied 10,536 acres, or 64% of the total land area in Marlborough, in 1990, it occupied 42.1%, and in 2001 it occupied 40.6% of the total land area. Approximately 93% of the 6,835 acres in agriculture in 1990 was devoted to orchard crops (see Appendix E, Table E-2). The decline in agricultural land was matched by an increase in land devoted to residential uses on almost an acre per acre basis between 1969 and 1990. In this period, agricultural land declined by 3,521 acres from 10,356 to 6,835 acres, whereas residential land increased by 3,583 acres from 867.7 to 4,450.8 acres. However, land assessment records from 2001 indicate a slight decrease in residential land since 1990, possibly due in part to conversion of residential land to commercial or industrial use.

As agricultural activity has diminished since 1969, farm labor housing and cold storage buildings have been converted to other uses. However, there is visual and statistical evidence that agriculture is still a major presence in Marlborough. The fact that

the acreage of land used for agricultural has declined by less than 2% between 1990 and 2001 indicates that the conversion of agricultural to other uses may be slowing.

Marlborough was not alone among Ulster County municipalities in its loss of farmland. Table E-3 compares the loss of agricultural acreage in Marlborough with nine other Ulster County towns in the 31 years between 1959 and 1990. Fifth in total agricultural acreage in 1959, in 1990 Marlborough ranked second with 6,835 acres to Shawangunk's 10,014. In percentage of agricultural land lost during those thirty-one years, Marlborough's 40.5 percent drop is second lowest. Only the Town of Lloyd, whose agricultural acreage in 1959 was less than all but one of the ten towns identified, lost a lower percentage of its agricultural land than Marlborough in the 31 year interval, 35.4 percent.

Residential growth since 1969 has occupied previously agricultural or vacant land between Route 9W and Lattintown Road as well as along road frontages further west. Much of the new residential development is substantial in value. According to the Ulster County Board of Realtors the median sale price of a single-family residence in Marlborough in 2000 was $165,000.

Commercial development, some of it in relatively large scale industrial parks or shopping centers, has increased along Route 9W since 1969. A number of deteriorating commercial buildings have been rehabilitated or replaced. The amount of land devoted to commercial development increased threefold between 1969 and 1990 from 1.2% of the land area to 3.6% of the land area. In 2001 commercial use accounted for 4.5% of the total land area. Industrial growth was less substantial, increasing from 1.0% to 1.6% of the land area between 1969 and 1990. The percentage of land in industrial use in 2001 was virtually unchanged since 1990.

E. Historical Background

The following historical narrative, dating from the 1930's by an anonymous author, is taken from the archives of the Town Historian:

> A trip around the Town of Marlborough, the southeastern corner of Ulster County, covers old Indian trails, passing flats where corn and pumpkins were grown, meat and other produce were brought to the docks in Milton for shipment and grains to the numerous mills for grinding. The roads, now macadam, (Marlborough has a large percentage of hard-surfaced roads) pass houses some of which ante-date the Revolution and many of which were built before 1830.
>
> The fruit growing region was settled for the most part by English people from Long Island and Westchester Counties. Many of the family names in the town now are the names of the early inhabitants of Revolutionary days – for example, Carpenter, DuBois, Mackey, Woolsey, Terpening, Frazer, Wygant, Purdy, Berrian, Quick, Perkins, Valentine, Caverly, Plumstead, St. John, Bloomer, Lockwood, Polhemus, Kent, Pembroke, Young, Baker, Harcourt, Tuthill, Quimby, Hallock, Fowler, Canniff, Conklin, Warren. From the time of the earliest known settler, Dennis Relyea, who came to live on Capt. John Evans' patent, 1694, at Old Man's Kill, on what is now Marlboro Mills, and of Captain Bond who settled on the grant given him in 1710, an increasing number of settlers came to this section particularly from 1750-1830. The population has remained almost constant. In the period 1913-1923 a large number of Italian people, attracted by the terraced hills of grapes reminiscent of their native Italy and by favorable prices for fruit, bought property here.
>
> Persons whose activities are known beyond the Town confines are Frederick Gowdy, famous designer of type, who lives on Jew's Creek;

James Scott, artist, and his wife Kirsten Scott, pianist; Grace Taber Hallock, author of books for children; Mrs. Edward Young Sr., former president of the New York State Home Bureau Federation; Walter Clarke, former president of the New York State Horticultural Society; Tony Canzoneri, former lightweight champion. Several citizens in years passed have served as assemblymen and other posts of honor, among them Edward Young, Sr. A distinguished citizen was C. Meech Woolsey to whom the town owes a debt for a carefully compiled "History of the Town of Marlborough."

The general farming of the early days has been replaced by the more specialized fruit growing. Apple seedlings had been planted on the Old Hall place as early as 1760. Tourists have always been attracted to this section by the beautiful views of the Hudson and the hills. Wulfers Roost, Elm Grove, and Shady Brook have been known to city people for years. Today the Italian boarders as well greatly increase the town's summer population. The First National Bank of Marlboro and The First National Bank of Milton, The Hudson River Fruit Exchange, the Italian-Cooperative as well as others, the Hudson Valley Press, the Shell Corporation, the Marlborough Manufacturing and Supply Company furnish the necessities for carrying on the main businesses of this section, fruit-growing and inn-keeping.

The Marlborough Presbyterian Church, the first of the town's eleven churches dates from 1764. This was followed by the Milton Methodist and the Lattintown Baptist Churches. The Quaker meeting from an early date, the Catholic Churches Missions in 1865, the Episcopal Churches and Amity Chapel have all had part in the community.

The two new school buildings, the Marlboro Central High School and the Milton Grade School, built as a result of centralization are modern in

every way, offering opportunity to all the children of all the people. These schools and the Lattintown School are the descendants of the two early schools, the Lattintown and the Turnpike schools, built before 1795. Several other schools both public and private have paved the way for a modern school system of which the town may well be proud.

Marlborough named after the Duke of Marlborough, was once part of the territory bought from the Indians by Governor Dongan in 1684. This land was granted by patent (afterwards annulled) to Capt. John Evans, September 12, 1694. Marlborough, Plattekill, Newburgh, and New Windsor formed the Highland precinct of Ulster County in 1743, but in 1772 the New Marlborough precinct was formed from the Marlborough and Plattekill portion and was first called "Town" in 1788. Lewis DuBois, whose home was the house on 9-W north of Marlboro where John Rusk, Sr., now lives was a high-commissioner of this Highland precinct as well as (later) of the New Marlborough precinct, chosen at a meeting held at the home of Henry Deyo in Lattintown, April 7, 1772. In 1800 the boundaries of the Town of Marlborough were defined as at present. The territory of the Town of Marlborough had been granted in patents to John Barbarie (1709); to Captain William Bond (1710) who settled south of Milton, and built the stone house on 9-W south of Indian Road; to Griggs and Graham (1712); to Lewis Morris (1714) also Augustus Graham, Lyman Clarke, Henry Wileman, William Bond, Henry Rainier, Alexander Griggs; to Archibald Kennedy (1715); to George Harrison (1750). These original lands were divided and sold to settlers, many of whose homes may still be seen on your trip. The Elizah Lewis house on 9-W at the Indian Road and the Anning Smith house on the Milton Road north of Milton, the mill house at Jew's Creek south of Marlboro are pre-Revolutionary houses as well as those previously mentioned.

F. Public Participation

The Town of Marlborough Greenway Committee conducted a survey of 374 residents in 2000 to ascertain what Town residents perceived as the strengths and weaknesses of Marlborough (see Appendix G). Approximately 45 percent of residents surveyed cited the rural nature of the Town as the reason for choosing to live in Marlborough. According to the survey, the other top reasons for living in Marlborough were having been born and raised there (approximately 48 percent), the quality of life (about 45 percent), the schools (about 43 percent), and the presence of the Hudson River (about 40 percent).

Over 65 percent of the residents surveyed identified taxes as one of the most important problems facing Marlborough. Other potential problems identified were the diminishing open space in Town, the lack of access to the Hudson River, water quality, recreational opportunities, economic development, and the diminishing presence of agriculture.

IV. Goals and Objectives Overview

The Town of Marlborough's plans to direct future development in the Town include the following goals:

- To absorb future growth in ways to preserve the Town's rural character
- To encourage the means to preserve agricultural lands and practices
- To support the development of the hamlets as attractive, efficient modes for future development
- To anticipate and mitigate negative impacts from future development

- To relate development to appropriate transportation access
- To encourage commercial development in appropriate areas
- To develop a plan to protect water resources
- To develop a plan to protect historic resources
- To establish a plan for the conservation of community and natural resources

The means to achieve these goals are varied and discussed in detail throughout the remainder of this document. Some specific techniques identified to achieve each of the above goals are as follows:

Absorb future growth in ways to preserve the Town's rural character

This general goal would be achieved through the use of creative residential subdivision design, including the cluster subdivision provisions already contained in the Town code, as well as through careful review of new commercial site plans. New residential growth would be directed to the hamlets. Any new residential developments outside the hamlets would be designed in ways that would retain the character of the rural roads, and retain scenic views from the roads to the greatest extent possible. New commercial developments would be designed so as to avoid excessive dependence on the automobile, and would make use of landscaping and creative site planning to preserve important natural features and create an attractive streetscape.

Encourage the means to preserve agricultural lands and practices

The use of farm conservation and development plans is identified as a means to provide for the conservation of farmland for the long-term continuation of farm operations. In addition, the Town may explore the use of transfer of development rights (TDR) to direct development away from agricultural land to more populated centers. The Town should facilitate coordination between farm owners and organizations that purchase development rights of farmland and/or conservation easements as a way to retain the economic viability of farming. The Town may also consider the adoption of a

local right-to-farm law that would supplement existing state laws pertaining to land in designated agricultural districts.

Support the development of the hamlets as attractive, efficient modes for future development

Emphasis will be placed on improving both vehicular and pedestrian circulation systems in the hamlets. The development of architectural guidelines to be used in the review of new development is proposed, as well as the identification of historic resources and development of a plan for their protection. The provision of additional public recreational facilities is also proposed. The use of transfer of development rights will be explored as a means to encourage new growth in the hamlets.

Anticipate and mitigate negative impacts from future development

The means to achieve this general goal include the careful review of projects, taking into consideration identified natural resources such as wetlands, steep slopes or ridgelines. The Town should also consider undertaking a hydrological study that will identify important aquifer protection areas and sources of potential contamination. A carrying capacity analysis would determine the residential density that could be accommodated in certain areas of Town without negative impacts to groundwater quantity or quality.

Relate development to appropriate transportation access

The Planning Board's review of both residential and commercial development will need to take into consideration the existing road and transportation systems. Creation of multiple residential driveway intersections with rural roads should be avoided. Development along Route 9W will need to be designed to avoid creating traffic congestion, perhaps through the use of service roads. Special emphasis will be placed on providing appropriate pedestrian access to new development.

Encourage commercial development in appropriate areas

The expansion of needed infrastructure, including underground utilities, are identified as an important component of encouraging commercial development. Water, sewer and gas service should be extended along the Route 9W corridor. New development should occur on larger, clustered sites rather than in strip commercial zones. Existing commercial areas in the hamlets should be redeveloped as necessary.

Develop a plan to protect water resources

In addition to recognizing and complying with state and federal laws pertaining to wetlands and water bodies, the Town will consider incorporating setback requirements from wetlands, streams and other water bodies in the local zoning ordinance.

Develop a plan to protect historic resources

The Town will identify local historic resources and create guidelines for the review of new developments affecting such resources. The Town may achieve protection through the mechanism of Planning Board review of site plans.

Establish a plan for the conservation of community and natural resources

The Town should identify important natural and cultural resources in the Town, including scenic viewsheds and roadsides. The Town should seek to designate local greenways that would connect areas of the Town and provide connections to the Hudson River, and wherever possible, obtain easements to protect the greenways. The Town should also consider the use of a conservation overlay zone in certain areas of the Town with identified scenic or environmentally sensitive resources.

V. Land Use Plan

A. Basis for Plan

The development of a land use plan must take into account a number of factors. The key physical factors to be considered, in addition to the stated objectives for the future of the community, are as follows:

- Environmental Constraints/Physical Limitations
- Existing Land Use Patterns
- Scenic Resources
- Transportation Facilities
- Available Infrastructure
- Regional Considerations

1. Environmental Constraints/Physical Limitations

Environmental constraints to development must be carefully evaluated in the development of a land use plan. Environmental constraints (steep slopes, depth to bedrock, wetlands) can make development costly and at the same time development can adversely impact the sensitive nature of these features resulting in environmental degradation (soil erosion, siltation, degraded water quality). Limitations on residential development due to poor soils, steep slopes, shallow depth to bedrock and seasonal high water tables were identified by detailed U.S. Soil Conservation Service field surveys commissioned for the 1970 Master Plan. The major environmental constraints and/or important environmental resources in Marlborough are as follows:

- Areas of steep slopes
- Floodplains
- Wetlands

- Unsuitable soils for development

A discussion of the significance of each of these constraints follows.

Areas of Steep Slopes

The slope of land affects many types of land use. Slight (0-3%) or moderate (3-8%) slopes usually do not present significant negative environmental or economic impacts when developed for housing, roads and businesses. Steep slopes of 9-14% present varying difficulties for development. Development or soil disturbance of any kind on severe slopes (15% and over) however, presents the potential for negative environmental impacts. Slopes in excess of 15% make the construction of dwellings, septic systems, sewer and water lines, and roads extremely difficult. Soils on such slopes are usually thin and easily eroded when natural vegetation is disturbed. The eroded soil in turn clogs ditches and storm sewers and eventually finds its way to streams and other water bodies resulting in adverse impacts on aesthetics and aquatic life.

Steep slopes in Marlborough occur primarily between Route 9W and the Hudson River, in the Marlborough Mountains in the western portion of the Town and in various areas in the north central and south central portion of the Town.

Floodplains

Floodplains are areas adjacent to streams, brooks and rivers that are flooded on a frequent basis. Floodplains serve a natural function by: (1) storing flood waters thereby reducing the

inundation of adjacent lands, (2) absorbing and dissipating the energy of flood waters, and (3) acting as a sediment trap for silt and debris-laden flood waters. Floodplains are divided into three areas: the stream channel, the floodway, and the flood fringe. The floodway is an area of rapidly moving water in which the majority of the flood flow is carried. The flood fringe is an area of slower moving water. The channel, the floodway and the flood fringe comprise what is commonly known as the flood hazard area.

In Marlborough, floodplains lie adjacent to the major streams including the lower elevations immediately adjacent to the Hudson River (see map identifying wetlands and floodplains in Appendix M).

Wetlands

Wetlands are transitional areas between well drained, rarely flooded uplands and the permanently flooded deep waters of lakes, rivers and streams. Wetlands typically are found in upland depressions or along waterways where they are subject to periodic flooding. However, they are sometimes located on slope areas where they are fed by groundwater seepage.

Wetlands are defined by Section 404 of the Clean Water Act as follows: "Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (EPA, 40 CFR 230.3 and CE, 33 CFR 328.3.) Wetland areas must have a sufficient exposure to water to produce saturated soil conditions (i.e. hydric soils) and to support a predominance of wetland plant species (i.e. hydrophytic vegetation). Some wetlands, such as marshes, are obvious, but others such as forested wetlands are less distinct.

New York State Department of Environmental Conservation (NYDEC) freshwater wetlands in Marlborough are found in association with stream courses and in other low lying areas. Particularly notable are large areas of wetlands in the northern, central and western portions of the Town (see map identifying wetlands and floodplains in Appendix M).

Unsuitable Soils for Development

The characteristics of certain soils which occur in Marlborough make them unsuitable for development to varying degrees. The U.S. Department of Agriculture's Soil Conservation Service has compiled a detailed inventory and mapping of the soils (see soils map in Appendix M). In addition to the inventory of soil types and mapping of their locations, the Soil Conservation Service has identified limitations for development associated with various soils. The limitations are rated as slight, moderate or severe. These terms are defined as follows:

Slight - Soils that are relatively free of limitations affecting the intended use, or with limitations that are easy to overcome by use of normal equipment and/or methods.

Moderate - Soils with moderate limitations resulting from the effects of slope, wetness, soil texture, soil depth, stones, etc. Normally these limitations can be overcome by careful planning, design, and good management, at somewhat greater cost.

Severe - Soils with severe limitations resulting from the effects of steep slopes, high water table, stream flooding, unfavorable soil texture, acidity, large numbers of stones, rocks, etc. The limitations are such that they can be overcome only by exceptional, costly, or complex measures.

The Soil Conservation Service tempers the general information it provides by stating that its mapping and interpretations should not be the sole basis for the determination of conditions or boundaries. It recommends that in addition to the soil

survey, detailed on-site investigations and tests be performed to identify site specific soil conditions.

Two important limitations for development associated with soils in Marlborough are limitations for seasonal high water table and depth to bedrock. Soil characteristics play an important role in the proper functioning of septic systems. If the soil contains too much clay so that water does not easily transmit through it, the septic effluent will rise to the surface presenting health hazards. If the soil is too porous, allowing the septic effluent to percolate rapidly down into the groundwater without sufficient time for treatment, then groundwater contamination is a potential hazard.

A moderate to high water table is normally an indication of clay-like soils, hard pan, an adjacent body of surface water or a combination of these factors. It is important to know where areas of moderate to high water table are when considering the location of roads, parking lots, septic systems and homes with basements. Fluctuation of water tables and the freezing and thawing associated with them will damage roads, parking lots and foundations. High water tables also hinder the performance of septic systems. Seasonal high water table presents moderate to severe limitations to development adjacent to many of the Town's stream courses, as well as in low lying areas at the base of steep slopes.

Depth to bedrock is an important factor in the location of roads and utility lines. However, it is critical in the proper operation of septic systems. Shallow bedrock does not have sufficient soil above it to filter contaminants out of the septic effluent. Contaminated water can then run along the soil/rock interface and either enter the surface water or an underground fracture, thus contaminating the groundwater. In Marlborough, contamination of groundwater is a critical concern due to the widespread use of private wells for potable water.

2. Existing Land Use Patterns

Proposed land uses should take into consideration established land use patterns to the extent possible. Proposed land uses should be compatible with adjoining pre-existing land uses. Wherever possible non-compatible land uses should be separated one from another. Residential
uses either should not be immediately adjacent to commercial, agricultural and industrial uses or where adjacent the uses should be separated by suitable buffer areas. The existing low residential densities of rural areas of the Town should be maintained.

3. Scenic Resources

The natural scenic features of the Town are also an important natural resource. These features include wooded hillsides, agricultural land, stream corridors and the Hudson River. The significance of these features and the contribution they make to the character of Marlborough should be taken into consideration in developing the proposed land use plan.

4. Transportation Facilities

The location, distribution and capacity of State highways, local roadways and other transportation facilities are important considerations in the distribution and intensity of land uses. Area transportation arteries and nodes include the New York State Thruway (Interstate 87) to the west, Interstate 84 located to the south, Stewart Airport located to the southwest of the I84 – I87 interchange outside of Newburgh, the Newburgh-Beacon Bridge to the south, and the 9W-I84 interchange in Newburgh (see Map in Appendix M). The local roadway network is the skeletal framework providing access to adjacent land uses. The most significant transportation artery in Marlborough is State Route 9W which runs south to north through the Town parallel to the Hudson River and approximately ¼ mile from its banks. Other roads of importance are Lattintown Road which runs south to north through the center of Town, Plattekill Road, and Milton Turnpike which run east to

west, and U.S. Route 44/55 which crosses the extreme northwest corner of the Town. There are no significant mass transit facilities in the Town although regional bus routes serve the area. There is a public bus route from Newburgh to the Beacon train station. Passenger rail service is available in Beacon.

Ferry and light rail connections between Newburgh and Beacon have been discussed but are not programmed for study in the State transportation plan.

5. Available Infrastructure

Future land use development should be planned taking into consideration the existing and proposed capacities of available infrastructure including water supply systems, sanitary sewer lines and wastewater treatment systems. Within the Town of Marlborough, the hamlet of Marlboro, has both a public water supply and sanitary sewers. The hamlet of Milton has had a public water district for some time but sewers have only recently been installed. Expansion of the sewer and water districts to the area along Route 9W, as well as underground cables for utilities and telecommunications, is needed to enhance commercial growth. The establishment of the proper infrastructure will result in an increase in "shovel-ready" land, allowing growth in the hamlets to occur more readily.

Currently, the Town of Marlborough obtains potable water from the Delaware aqueduct which is part of New York City's water supply system. The Town purchases water from the City of New York in accordance with the 1905 Water Supply Act. This source is not reliable over the long term and expansion may be limited due to restrictions imposed by New York City. Portions of the town of Marlborough overlie aquifers which are tapped by private water supply purveyors. This source of potential water supply should be investigated to address the future needs of the Town.

6. Regional Considerations

Regional considerations related to the economy and population growth need also to be evaluated to gauge the need for additional housing and services. Regional economic influences

of the Mid-Hudson region play a major role in the presence or absence of growth pressures in Marlborough.

Since portions of the Town of Marlborough are part of an Agricultural District established pursuant to the New York State Agriculture and Markets Law, the Ulster County Agricultural and Farmland Protection Plan needs to be considered by the Town when making land use decisions. The county's "Plan Summary" which is a statement of the goals, objectives and implementation strategies of the Agricultural and Farmland Protection Plan, is contained in the appendix of this document. The county's articulated goals are:

- To promote options for preserving farmland without harming a farmer's ability to obtain financing or benefit financially from the sale of his/her property.
- To provide an atmosphere in Ulster County that ensures successful farming now and in the future.
- To provide educational opportunities for Ulster County residents that will increase their understanding of and appreciation of agriculture and its practices. Promote the farmer as an effective steward of the land.

B. Land Use Plan Recommendations

The Land Use Plan element establishes long-range goals for land use in terms of types of land uses and densities throughout the Town. The Land Use Plan also serves as the foundation and basis for the zoning ordinance. The Land Use Plan has been developed to implement the objectives listed elsewhere in this document while taking cognizance of the unique environmental, social and cultural attributes of Marlboro. The other elements in this document build on the proposals contained in the Land Use Plan element.

1. Agriculture

Agriculture has played an important role in the economy of the Town of Marlborough and its presence has contributed to the amenities of its rural landscape. In recent times, increasing land values and lower profit margins have contributed to a decline in the number of farms and other agricultural businesses operating in the community as well as a reduction in the amount of acreage kept in production. Too often, the best agricultural lands which present scenic vistas to the community are being converted by developers to home sites.

The Town of Marlborough believes that farmland preservation is vital to maintaining the character of the community. Encouragement needs to be provided to the agricultural community to support the preservation of agricultural land resources. The Town currently encourages direct retail sale of farm products through farm produce stands and markets. The Town can assist in maintaining the viability of agriculture by encouraging the conservation of areas with prime agricultural soils, requiring appropriate buffers between established agricultural and proposed non-farm uses, protecting agricultural operations from disruptions by adjacent non-agricultural development, including the adoption of a local "Right to Farm" law; investigating transfer of development rights (TDR) and purchase of development rights (PDR) programs. The adoption of a local "Right to Farm" law to supplement the New York State law may give

farmers better protection from nuisance laws by including specific provisions or providing new property owners with a disclosure notice. The Ulster County Agricultural and Farmland Protection Plan provides an example of a local "Right to Farm" law in its appendices.

Further research is needed to determine additional ways of keeping agricultural land profitable. The County Agricultural and Farmland Protection Plan lists land trust organizations that could be a funding source for the purchase of development rights and easements. These include the Rondout –Esopus Land Conservancy, the Shawangunk Conservancy, Wallkill Valley Land Trust, Woodstock Land Conservancy, American Farmland Trust, Scenic Hudson and Catskill Center for Conservation and Development. Section 261-a of the New York State Town Law provides for the transfer of development rights. In order for a Town to establish a transfer of development rights program it must first establish "sending districts" and "receiving districts." Receiving districts are established after the Town has determined that they are appropriate for increased density based upon a study of the effects of increased density in such areas.

Another tool to promote the viability of agricultural uses is the creation of farm conservation and development plans that allow future home sites to co-exist with active farmland. Many farmers rely on the occasional sale of a house lot to supplement farm income. A farm conservation plan allows landowners to subdivide their property into home sites as needed over time according to a pre-approved plan based on cluster subdivision design principles. The farm conservation plan is designed to provide for the conservation of productive farmland for the long-term continuation of farm operations.

Each farm conservation plan would be designed to fit the unique characteristics of the particular property. The appropriate location of future home sites would depend on the natural features of the landscape and on the residential density that the farm owner considers most compatible with the long-term operation of the farm. Such plans may also identify potential locations for a farm-related business.

Flexibility in the application of subdivision standards also provides an incentive for landowners to prepare such conservation plans. For example, road frontage requirements and road standards could be waived to permit access via common driveways or reduced-width local roads. Also, any time limits and fees for incremental subdivision could be waived. Landowners could be assured of fast-track approval for future subdivisions based on a pre-approved conservation plan, and could maintain their agricultural assessment on their property until the subdivision actually occurred.

To promote a comprehensive rather than piecemeal approach to farmland conservation throughout the Town, a Town-wide "Farm Conservation Map" could be created, on which individual approved farm conservation plans would be mapped. This would insure coordination of the placement of access roads, protected open space and house sites among various farmland parcels, throughout the Town.

Benefits to the farm owner of farm conservation planning include capital for re-investment or expansion, a broader range of density options, more flexibility in locating home sites, control over the pace of subdivision, incremental extension of shared access roads, and reduced costs when planned lots are actually subdivided. Benefits to Town residents include the prevention of repeated, uncoordinated subdivision, the retention of farmland on its tax rolls, protection of important farm soils, support of the agricultural economy, and preservation of the rural character of the Town.

2. Residential

Residential growth should occur primarily in and around the hamlets of Marlboro and Milton in areas serviced by the public water and sewer districts. Smaller lot sizes may be warranted to encourage such growth. As much of the remaining demand as possible should be directed toward available buildable land east of Lattintown Road and

outside of viable agricultural districts. A carrying capacity analysis should be performed to determine appropriate

densities that would not degrade the environment. The key determinents in a carrying capacity analysis are an analysis of the availability of groundwater for wells and the ability of soils to cleanse wastewater from septic fields.

Significant residential development should be discouraged in predominantly agricultural areas. New residential uses along the ridgelines of the Marlborough Mountains and other notable ridges should be discouraged. The isolation of farms by surrounding residential development should be avoided. Buffer zones between new residential growth and existing agricultural uses should be implemented as appropriate.

Residential Cluster Subdivision

Ideally, most new construction will be encouraged around the hamlets of Milton and Marlboro, but development in the rural areas of the Town, albeit at a lower density, will still continue. In addition to establishing lower density zoning in these areas by requiring larger minimum lot sizes, an important tool to effect preservation of both farmland and natural open space is mandatory cluster subdivision design. Cluster subdivision design, which is provided for in Section 278 of New York State Town Law, allows for the creation of smaller lots than are permitted under the town's zoning district standards, with the remaining land being preserved in perpetuity. The illustration in Appendix H illustrates the outcome of a conventional development versus that of a cluster development. The same number of house lots are provided in the cluster subdivision as in the conventional subdivision, while the prime farmland and natural features are preserved. It is noted that cluster subdivision design is one of the recommended strategies identified by the Ulster County Agricultural and Farmland Protection Plan to preserve farmland without harming a farmer's ability to obtain financing or benefit financially from the sale of his/her property.

Cluster subdivisions, also known as conservation subdivisions, provide advantages to the developer, the residents of the subdivision, as well as the residents of the Town at large. Benefits

to the developer include less expensive construction costs, and retention of special site features and open space that add value to the lots in the development. Residents of the subdivision benefit from having views of open fields, and direct access to natural preserves with the potential for trail systems. The Town at large benefits since rural views from the road are maintained, natural features, including water bodies, have greater protection and large farm fields are preserved.

Although Section 155-29 of the Marlborough Town Zoning Law currently provides for residential cluster development, it only permits it in the R-1 District and requires that the project be served by municipal water and sewer. In addition, the decision of whether to propose a cluster development rather than a conventional subdivision is left to the discretion of the developer. The Town should consider revising this section of the Town Zoning Law so that the Planning Board is given the discretion to require a developer to submit a cluster subdivision plan for consideration by the Board. In addition, consideration should be given to permitting residential cluster subdivision in the R-Ag-1 District and eliminating the requirement for public water and sewer, since the land in this district would benefit the most from this form of residential development. Each proposed lot would still need to demonstrate adequate area for an on-site well and septic, according to county health department requirements. A community well and septic fields on common open space within the development may also be an option.

The Dutchess County publication, "Greenway Connections," provides guidance on the development of cluster subdivisions. It recommends that the Planning Board insure that developers blend new development into the landscape by requiring that the open space system be identified prior to submitting any plan for subdivision. Components of an open space system include agricultural lands, wetlands and floodplains, steep slopes, aquifer recharge areas, significant plant and wildlife habitats, mature tree stands,

scenic views from the public road, as well as cultural features such as stone walls, barns and historic buildings. Once site characteristics are fully understood, then suitable areas for development and preservation are

delineated. Within these areas, building envelopes and roads are located, with the lot lines being the last feature to be drawn.

The standards for cluster subdivision design contained in the Town's subdivision regulations can be expanded to include specific rural development guidelines, which should include the following:

- Minimize the clearing of vegetation and preserve important natural features.
- Retain stone walls, hedgerows, individual trees, and other rural landscape elements.
- Place buildings and access roads in treelines, on mildly sloping ground, or along the edges of fields; avoid construction in open fields or on ridgelines.
- Locate structures and septic systems 100 feet or more from streams or ponds to protect water quality.
- Re-use farm roads or country lanes whenever possible, rather than constructing new wide roads.
- Maintain or enhance scenic views.

Creative development patterns

A development pattern to be avoided is "strip subdivisions." This term is defined in the Dutchess County publication, "Greenway Connections," as a form of development where small subdivisions, usually less than ten lots at a time, line rural roads with individual lots, each with a separate driveway spaced about 100 feet apart. As a result, views of fields, forests and open land are hidden by a line of dwellings. Just a few new dwellings along an existing public road, subdividing just a small percentage of the

surrounding land, can block views of a majority of the open landscape. Not only do strip subdivisions block scenic views, they create multiple conflict points for the flow of traffic along the public road. This piecemeal pattern of development destroys the scenic character of the road system and makes the roads less safe due to more driveway intersections.

The Town should encourage creative alternative patterns for minor subdivisions that gradually create a connected interior street system, or at the very least promote common driveways with provisions for possible future connections. In addition to preserving the visual character of rural country roads, such alternative development patterns create scenic dwelling sites facing farmland or natural areas, rather than a busy road, and provide a protected street and front yards for children.

3. Commercial

The spread of strip commercial zones should be stopped and instead new commercial uses should be contained in sub-centers with shared driveways and parking, higher quality landscaping and architecture and a mix of adjacent uses. Some of the defining features of strip development is the dependence on cars for every movement, traffic conflicts due to an excess of traffic signals and driveways, dominance of asphalt due to oversized parking lots, unattractive architecture, lack of coordinated landscaping, and an excess of signage. Emphasis on new commercial and service uses development should be on planned relatively large clustered sites along Route 9W. The length of commercial districts along roadways should be limited and any necessary commercial expansion should occur in depth. Such clustered development is preferable to long, narrow strip zones because it concentrates commercial uses and encourages shared parking and walking between stores. Commercial districts look and function best when larger stores and parking lots are placed to the rear with smaller storefronts set closer to the road. This screens the parking areas and provides a more traditional and walkable street frontage.

A clear delineation between commercial clusters and residential clusters along Route 9W should be established. Acceleration and deceleration lanes or service roads to minimize interference with Route 9W's major function as a regional arterial should be provided. Most importantly, water, sewer and gas service should be extended to the Route 9W corridor.

As recommended in the aforementioned publication, "Greenways Connections," a long-term redesign program should be developed that gradually transforms existing strip commercial development into mixed-use subcenters with each successive site plan application. Some methods of achieving this transformation are as follows:

1. Restrict further development of outlying highway frontage and limit existing commercial districts to under a half-mile in length
2. Consolidate entrances along the road to a few main driveways with internal service streets based on a block system to connect businesses in between
3. Help unify the streetscape with continuous street trees, high quality landscaping, and, where possible, planted medians to prevent unlimited left hand turns
4. Build sidewalks and crosswalks throughout the area to create connections to shared parking, public transportation, walking between stores and to nearby housing
5. Fill in the fronts of large parking lots with small, closely spaced or attached storefronts to build a street frontage with courtyard parking behind
6. Attractive architecture, wall signs and sidewalks can be featured along the frontage, rather than parking lots and pylon signs
7. Encourage a mix of housing and other uses adjacent to the shopping to begin to build a walkable neighborhood rather than a strictly commercial driving district.

Existing commercial areas outside of the Route 9W corridor such as in the hamlets, along Milton Turnpike and in the Bailey's Gap Area should remain and be redeveloped as necessary.

As the area develops, architectural and other aesthetic controls should be implemented. Every site plan should be viewed as an opportunity to upgrade the landscaping with street trees and coordinate access along the public frontage. The landscape on every site plan should be made part of the larger open space system, incorporating natural features on the site, using native plants whenever possible, and connecting to the greenway patterns on adjacent parcels.

"Greenway Connections" also provides guidance on landscaping. It suggests that, rather than consider landscaping as decoration for the leftover edges of the site after building and parking lots are designed, plantings should be designed to enhance the architecture and reintegrate the developed property into its surrounding natural system. Since the term "landscape" cannot be described within the property lines of a single parcel, site plans need to establish connections to the street and surrounding area. Whether the surroundings are existing commercial centers or undeveloped rural areas, the plantings on the site need to respond to the surrounding landscape patterns and soil conditions.

The benefits of landscaping, beside appearance, include the absorption of dust and air pollution, reduction of wind velocities, dampening of noise levels, moderation of temperatures (10-15 degrees cooler in wooded areas), reduction of soil erosion and storm water runoff, filtration of water supplies, provision of bird and wildlife habitat, and an increase in property values.

Some general landscaping principals suggested in the "Greenway Connections" publication include the following:

- Establish an open space system for each site, connected to surrounding natural features and/or landscaping patterns
- Shape the site plan to take full advantage of existing natural features, such as mature trees, rock outcrops, slopes, stone walls, or streams.
- Set minimum area guidelines for landscaping/permeable surfaces
- Use low maintenance native plants when possible to reinforce the character of the region
- Stress plantings along the public frontage, especially street trees and continuous landscaping to reinforce the flow of the street and bridge gaps between buildings
- Encourage a diversity of plant species and combine trees with low plantings to provide contrasting forms
- Use landscaping to frame views of architecture or open vistas
- Generously landscape parking lot edges and dividing islands with shade trees and low plantings
- Include enforceable maintenance requirements in permit approvals.

Signage is another visual aspect of site plans that often form the first and lasting impression of a place. Effective and attractive signs are especially important in areas where the economy benefits from outside visitors. Overly complex signs, cluttered groupings or large garish signs are a distraction to drivers and result in an unattractive streetscape. Building signs should be accessory elements to high-quality architecture and freestanding signs should be integrated into the overall landscaping of a site. Building signs, including wall and window signs, projecting signs and awnings, should be subordinate features to interesting architectural design. They should not overwhelm the structure and obscure architectural details. Freestanding signs are only needed when buildings are set back too far from the street for the building wall signs to be seen; otherwise they should be avoided. Low, monument-style freestanding signs are recommended over taller pole or pylon signs because ground-based signs can be better integrated with landscaping. At 4 to 7 feet high they can also be seen from the eye level of drivers and are less likely to obstruct views of neighboring properties or the sky.

Current signage standards should be reviewed and updated as needed. Advertising standards should be developed and implemented by the Planning Board. Standards can define appropriate ranges for the size, location, construction material, design, luminosity, reflectivity, color, number of words and number of signs on a property, in the interests of traffic safety and community appearance.

Parking lots should be treated as a strictly accessory use and placed to the side and rear of buildings rather than the front. Parking areas can actually complement a site if designed correctly. Features of good parking lot design include a significant number of shade trees, low hedges, stone walls or attractive fencing, and pavers, or textured crosswalks to break up the blacktop. Grass block overflow areas can be used to reduce storm water runoff. Studies have shown that well designed and landscaped sites will yield greater long-term value than the original investment, increasing financial returns for developers.

More flexible and/or reduced parking standards can help to emphasize architecture and landscaping rather than asphalt. Less parking surface results in less storm water runoff and results in cost savings which in turn can be made available for higher quality landscaping and site improvements. Shared parking between adjacent uses should be encouraged, and consideration should be given to allowing the Planning Board more flexibility in approving parking requirements. In some cases, a certain percentage of the parking requirement could be modified or replaced with a parking reservation area for a trial period, rather than require a developer to build more spaces than are actually needed. Regulations should also be developed which would specify particular landscaping requirements in parking areas and parking reservation areas.

Lighting in commercial areas should be attractive and human-scale. Attractive site lighting makes public areas feel more secure and promotes evening entertainment activities. Overly high poles that broadcast much of the light on neighboring properties or into the night sky should be avoided. Some guidelines for good lighting provided in the aforementioned publication, “Greenway Connections,” include the following:

- Provide adequate lighting for the intended task
- Include full shielding that eliminates glare, especially off-site
- Avoid mercury vapor and low pressure sodium fixtures, as well as laser lighting or searchlights used for advertising purposes
- Encourage lighting that accents distinctive architectural features, but discourage exterior neon or illuminated banding that is primarily for advertising purposes
- High pressure sodium is most efficient for highway lighting; metal halide is preferred for pedestrian areas to give better color quality; incandescent bulbs can be used for low wattage accent lights

- Main street and pedestrian area lighting should be human scale
- Outdoor signs should be lit from the top; if internally lit signs are allowed, dark backgrounds and light lettering produce less glare and are easier to read
- Space between fixtures should be approximately four times the height
- Exceptions may need to be considered for stadium lighting and other specialty activities and short term events

4. Industrial

Major industrial properties at the present time include the Tilcon Minerals mining operation, Chelsea Homes, the wineries and Copart auto salvage. Light industrial type uses and limited manufacturing should be encouraged. Prior to a decision being made on the suitability of any property for industrial development, the environmental features of the property will need to be examined.

VI. Resource Protection and Open Space

The natural resources of Marlborough are the Town's most important asset and should be protected. Natural resources provide the foundation to support life including the provision of drinking water, soils for crop production, and vegetation for clean air and climate modification. Natural resources are significant for the local economy. The unique combination of natural conditions that occur locally (soils, climate, slopes) are ideal for the production of orchard crops and are the reason why the apple industry became established in Marlborough. In addition to being important to the local economy, the natural resources of Marlborough provide an aesthetic landscape which is an asset to the community. The resources that should be protected and means to protect them are discussed on the following pages. One method of protection is the use of overlay zones. Overlay zones apply additional standards or restrictions to development beyond the requirements of the underlying zoning district, and are tailored to protect particular features within the designated area. Such overlay zones may cut across several different underlying zoning districts. A conservation overlay zone may be designed to, among other things, impose clearing limits on property, require architectural review of construction, or require that development not obstruct views or otherwise conflict with identified scenic resources.

Ridgelines

There are a series of ridgelines throughout Marlborough, most notably in the Marlborough Mountains area in the western portion of the Town. The tops of ridges form the horizon where the ground appears to meet the sky. Natural ridgelines are the most pleasing to the eye. When development occurs on ridgelines, an unnatural element is introduced which interrupts the horizon and is unaesthetic. When trees on a ridgeline are removed to make way for homes or other structures, the impact on the natural landscape is even more dramatic. It is recommended that a conservation overlay district be implemented in appropriate areas in order to better protect ridgelines and viewsheds in

the Town. Any new construction on hillsides should occur below the tops of ridges such that structures do not appear on the horizon.

Steep Slopes

As discussed earlier in this document, construction on steep slopes is difficult and leads to environmental degradation due to increased stormwater runoff and erosion. Steep slopes in Marlborough occur primarily between Route 9W and the Hudson River, in the Marlborough Mountains in the western portion of the Town and in various areas in the north central and south central portion of the Town. Specific requirements for typical development scenarios should be investigated and ordinance standards developed to respect the hazards of constructing on steep slopes.

Wetlands

Freshwater wetlands are areas commonly called marshes, swamps, bogs and flats supporting aquatic or semi-aquatic vegetation. These areas are valuable resources that provide flood control, wildlife habitat, open space and water resources. Freshwater wetlands also provide opportunities for recreation and aesthetic appreciation. Freshwater wetlands are unique hydrological and biological systems that serve a variety of important ecological functions including:

- natural purification of surface and groundwaters;
- protection of surrounding downstream areas from flood and storm damage;
- habitat for fish and wildlife including migratory birds, endangered species, and commercially and recreationally important wildlife;
- maintenance of critical baseflow to surface waters by gradually releasing stored flood waters and groundwater, particularly during drought periods.

The New York State Department of Environmental Conservation (DEC) is responsible for the administration of the State Freshwater Wetlands Act. In general, to be protected under the Freshwater Wetlands Act, a wetland must be 12.4 acres or larger. The area within 100 feet of the boundary State-designated wetland is known as the wetland "adjacent area," and is subject to regulation by the DEC. Wetlands smaller than this may be protected if the DEC Commissioner has determined that they have unusual local importance.

The Army Corps of Engineers also regulates wetlands under Section 404 of Federal Clean Water Act, including those less than 12.4 acres in size. However, the Army Corps does not regulate areas adjacent to wetlands, and certain discharges and modifications to wetlands are exempt from review under these regulations. Other dredging and filling activities in wetlands that are below certain thresholds are permitted without further review under the Nationwide Permit Program administered by the Army Corps of Engineers.

Stream Corridors

The land directly adjacent to natural water bodies has a water table close to the surface and sometimes becomes subject to floods. These streamside borders often contain the highest diversity of wildlife. The vegetation adjacent to streams are crucial for protection of water quality. The clearing of natural vegetation from stream corridors due to development or agricultural practices has led to increased pollution, loss of wildlife habitat and flooding downstream. Since most streams flow through private property, corrective measures are dependent upon the participation of property owners.

The benefits of streamside protection include improved percolation and groundwater recharge, reduced sedimentation, filtration of excess nutrients and chemical pollutants, reduction of stream bank erosion, moderation of flooding, lowering of water

temperatures and addition of woody and leaf debris to improve aquatic habitat, provision of safe corridors for animals, and the provision of more visual diversity and beauty.

The Town can protect stream corridors through a minimum stream setback in the zoning ordinance, as well as a requirement to subtract sensitive lands from lot yield calculations. A local wetlands ordinance, as mentioned in the section above, could be designed to also provide protection to stream corridors. Stream corridors can also be protected from new residential development through the use of cluster subdivision design. Guidelines for the protection of streams could be codified in Town regulations. Such guidelines could include the provision of a vegetative filter along the stream corridor, which would increase in width in areas where soils are gravelly, sandy and well drained or have low phosphorus absorption capacity, where slopes are steep, where the stream is adjacent to wetlands, or where vegetation lacks forest species or a grassy strip; and the use of a wide variety of native trees, shrubs and plant species, including species tolerant of flooding.

Certain classifications of streams are afforded protection by the New York State DEC's Protection of Waters Program. Permits are required from the DEC for any disturbance to the banks or beds of streams classified as "C(t)" or higher. Discharge of dredged or fill material into streams is also regulated by the Army Corps of Engineers under Section 404 of Federal Clean Water Act.

Groundwater Resources

The Town of Marlborough currently obtains potable water from the New York City public water supply system. Due to conservation programs, it appears that the New York City system cannot be relied upon to expand the Town of Marlborough system. In times of drought, there may also be serious cutbacks in the amount of water available. The Town, therefore, should assume that future water supplies will need to rely on local

sources of water. Because there are a number of local water purveyors who withdraw groundwater, it is assumed that there is an ample supply of groundwater. However, there is apparently no data to support this assumption. Records of well tests and groundwater pumping data are not readily available. It is, therefore, recommended that the Town commission a hydrological study to investigate the availability and quantity of groundwater resources that are available to accommodate future growth in the Town. Based on the results of such a study, wellhead and aquifer protection areas in the Town can be delineated and the Town can adopt protection measures against potential sources of contamination to ensure long-term sources of clean drinking water.

It is noted that the cleanup of a contaminated groundwater source is much more costly than preventing it in the first place, and some contaminants are virtually impossible to remove. Contaminants that have made their way into the underlying aquifer through the soil and fractures in rock can be drawn into wells by the pumping action of larger public wells. Unsealed or abandoned wells can act as direct conduits for contamination of groundwater, as can carbonate geology with its solution channels and sinkholes.

Potential contamination sources should be identified and mapped. Potential sources of contamination to groundwater include residential uses such as septic systems and yard chemicals; agricultural uses such as feedlots, manure storage and improper pesticide application; commercial uses such as gas stations, dry cleaners, junkyards and car washes; industrial uses such as chemical manufacturing, storage tanks, pipelines and mining; and institutional uses such as landfills, de-icing operations, sewage treatment plants and cemeteries.

Tools that can be used for wellhead and aquifer protection include septic system maintenance programs, wellhead protection signs, land acquisition or protective easements, monitoring and remediation of contaminated sites, and zoning restrictions such as setbacks, buffers and overlay districts. Any wellhead and aquifer protection plan should be coordinated with neighboring municipalities.

Developers should be required, at the time of subdivision review, to identify viable locations for wells and septic systems on each proposed lot that would meet with the County Health Department guidelines. The subdivision regulations should be revised, if necessary, to allow the Planning Board to require information regarding the water quality from proposed on-site wells.

Carrying Capacity

Carrying capacity refers to the amount of human development that can be accommodated on a given land area without degrading the environment. Carrying capacity analysis usually is applied to residential development that relies on private individual groundwater wells and individual septic disposal systems. The carrying capacity is normally defined in terms of dwelling units per acre. The two primary components of carrying capacity for which models have been developed are drinking water supply and quality of septic effluent.

Drinking water supply is analyzed in terms of safe yield which is the maximum amount of groundwater that will be available during a dry period without adversely affecting groundwater levels. Information on geologic formations and their groundwater yield in terms of gallons of water per square mile per day are used to calculate safe yields and the number of dwellings that can be supported for a given area.

Carrying capacity related to septic systems has to do with the protection of water quality from the influences of septic effluent. Regulatory programs frequently use nitrate concentrations in groundwater as an indicator of overall water quality since nitrate (NO3) is highly mobile and stable and easily monitored. Nitrogen compounds introduced into the ground in septic waste are attenuated over time and distance by chemical renovation through interaction with soil particles and bacteria and by physical dilution by infiltrating rainwater. Variables that affect nitrate concentrations in septic effluent are housing density, the number of persons in each household and the septic effluent produced by

each person. Mathematical models known as nitrate dilution models have been developed that take the above variables into consideration.

Several water quality standards for nitrate have been set by various regulatory agencies. The current drinking water standard, specified by the Federal Safe Drinking Water Act regulations (40 CFR 141), is 10 mg/l. However, some studies suggest that the standard for groundwater should be set at a lower level to ensure that the drinking water standard is not violated frequently. Another factor to consider is that nitrate rarely occurs naturally in groundwater in concentrations greater than 3 mg/l.

Because a large area of the Town relies on private wells and septic systems and also because the Town public water supply will in the future likely come from local groundwater sources, it is recommended that a carrying capacity analysis be used as a basis for establishing residential densities in non-sewered areas of the Town. The results of such an analysis may point to the need for a reduction in the number of permitted residential lots, with the result that the Town may determine to increase the minimum lot size in these areas.

Greenways

Greenways are green corridors established for preservation of natural resources or recreational travelways or both. The term "Greenways" was adopted nationwide as the result of the 1986 conference of the President's Commission on Americans Outdoors.

In his book "Greenways for America," Charles Little describes a greenway as:

> "a linear open space established along either a natural corridor, such as a riverfront, stream valley, or ridge line, or overland along a railroad right-of-way converted to recreational use, a canal,

> scenic road, or other route. It is any natural or landscaped course for pedestrian or bicycle passage. An open-space connector linking parks, nature reserves, cultural features, or historic sites with each other and with populated areas."

The concept of greenways is not a new idea although the interest in greenways has grown significantly in the last decade. Greenways fall into many different categories ranging from urban pathways offering the opportunity for active recreation for the human species to ecologically important natural corridors for wildlife. There are five general types of greenways:

1. Urban riverside (or other waterbody) greenways, usually created as part of (or instead of) a redevelopment program along neglected, often run-down city waterfronts.

2. Recreational greenways, featuring paths and trails of various kinds, often of relatively long distance, based on natural corridors as well as canals, abandoned railbeds, and public rights-of-way.

3. Ecologically significant natural corridors, usually along rivers and streams and less often ridgelines, to provide for wildlife migration and species interchange, nature study, and hiking.

4. Scenic and historic routes, usually along a road, highway or waterway, the most representative of them making an effort to provide pedestrian access along the route or at least places to alight from the car.

5. Comprehensive greenway systems or networks, usually based on natural landforms such as valleys and ridges but sometimes simply an opportunistic assemblage of greenways and open space of various kinds to create an alternative municipal or regional green infrastructure.

The Town of Marlborough is part of the Hudson River Valley Greenway which is a greenway on a grand scale. The Hudson River Valley Greenway extends from the Mohawk River north of Albany to Battery Park in New York City. Within the Greenway there are two designated areas; a Riverside area encompassing the eighty-two units of local government directly along the shoreline of the River, and a Countryside area encompassing the remainder of the land of the twelve-county area within the overall Greenway designation. Marlborough is within the Riverside area.

Roads and streets should be considered part of the public open space system and is the most visible opportunity to create a network of scenic greenways. The view from the road makes an important first impression on visitors and is the most common way residents visualize their community. Preserving the rural qualities of the Town requires the prevention of roadsides from being lined with new houses or strip commercial districts, which block views and cause traffic congestion. As previously discussed in the sections on residential and commercial development, most new development should be clustered in and around the hamlets. Important rural features, such as farm fields, stone walls, barns and roadside trees, should be retained. In the hamlets, the most significant design feature that will create a more unified streetscape is a row of street trees between the sidewalk and curb. Other features which contribute to the scenic qualities of hamlet streets include narrow lanes for slow speeds, planted medians where possible, frequent and highly visible crosswalks, on-street parking, continuous storefronts along the

sidewalks with parking lots placed to the rear, and pedestrian-scale signs and lighting. The Town's long-term goal should be the creation of an interconnected greenway system of scenic roads, sidewalks, bike routes, open space corridors, and waterways throughout the Town and linked to a regional system.

In addition to being part of the Hudson River Valley Greenway, Marlborough should seek to designate local greenways that would connect areas of the Town and provide connections to the Hudson River. Local greenways can be established along

stream courses to help protect water quality, preserve wildlife habitat, serve as wildlife corridors, preserve the landscape and offer passive recreation opportunities.

Streamside greenways or buffer zones have been shown to be effective in reducing the pollutants that enter water via non-point source pollution. "Nonpoint" source pollution is pollution carried by overland stormwater runoff as opposed to "point" sources of pollution usually associated with discharges from pipes. Development increases nonpoint source pollution by increasing both the amount of runoff and the amount and types of pollutants found in the runoff. Nonpoint source pollutants include sediments from erosion, nutrients from fertilizers, bacterial contamination, road salt, motor oils and litter.

Sediment produced by erosion is a major nonpoint source pollutant. In addition to soil particles, nutrients and other contaminants that adhere to the soil particles are also transported as part of the sedimentation process. Sediment fills in holes and covers gravel in stream beds smothering fish eggs and bottom dwelling organisms. Sedimentation also reduces oxygen in streams and clogs the gills of fish.

Nutrients in the form of phosphorus and nitrogen from lawn and agricultural fertilizers lead to the nutrient enrichment of streams and other water bodies. Malfunctioning septic systems and livestock in and adjacent to streams are other sources of nutrient enrichment. Symptoms of nutrient enrichment include algal blooms and excessive weed growth that reduce oxygen in the

water harming aquatic life and eventually causing eutrophication of waterbodies. Other nonpoint pollutants of concern are disease-causing bacteria found in human and animal waste, pesticides, herbicides, and heavy metals.

Whenever possible the Town should obtain conservation easements to protect the greenways. Conservation easements allow private land owners to retain title to the property. The area within the easement is restricted in its use so that development or

other forms of disturbance are prohibited. Normally the area within the easement would be left in its natural state. If the easements are donated they can be considered as gifts by the IRS. Also, because the use of the land is restricted, property taxes may be reduced. Sources of funding for outright purchase of greenways are available but they are limited and grants are highly competitive. Greenways should be left in their natural state with only minor improvements in some cases such as hiking trails.

River Access

The most significant natural resource in the Town of Marlborough and adjacent communities is the Hudson River. The Hudson River provides a unique environmental habitat for flora and fauna, is a transportation artery, offers unlimited recreational possibilities, and enriches our lives with a wealth of historical narrative. Considering how vital the Hudson River was to the Town's early history, it is amazing that there is no public access to the River within the Town of Marlborough. One of the most important recommendations of this Master Plan is that point(s) of public access to the River be established. Ideally, a point of access would involve an interpretive center at which environmental education could take place, to increase the community's interest and involvement in being good stewards of the River and good neighbors within the Hudson River Greenway Community.

VII. Circulation and Transportation

A discussion of vehicular circulation and transportation in Marlborough essentially begins and ends with Route 9W. Route 9W is the most important traffic artery in the Town and the only one with significant traffic congestion. The biggest problem is the "bottleneck" at the intersection of Western Avenue in the hamlet of Marlboro. Due to the closeness of buildings to the right-of-way on either side of Route 9W and the presence of on-street parking in the northbound direction vehicles become stacked behind left turning vehicles. The continuous traffic flow in both directions does not leave sufficient gaps for left turning vehicles to execute their movement. The Town should work with the New York State Department of Transportation (NYSDOT) on any improvements to Route 9W.

As traffic volumes increase, left turns onto Route 9W will increase in difficulty. Centralizing left turns at signalized intersections should be considered. The Town of Marlborough should support the NYSDOT arterial management strategies.

Along the remainder of Route 9W, the Town should require shared access points for adjacent businesses or the construction of service roads to reduce the conflicts of driveway movements with the through traffic flow. Another approach to avoiding increased traffic congestion is to mix land uses closer together to encourage alternatives to the automobile.

The Planning Board should take the opportunity of the site plan review process to limit new access drives, to close excess entrances and reduce the width of overly wide driveways, since overly wide driveways allow unpredictable turning movements. In addition, the Planning Board should require, where appropriate, the provision of temporary stub drives to connect to adjacent parcels when they are developed, and the location of structures and parking lots to facilitate secondary streets based on a block system. An interconnected secondary street system would aid in relieving traffic congestion.

Other roadways in the Town do not have congestion problems but a number have inadequate horizontal and vertical alignment. These design inadequacies should be rectified on a case-by-case basis in association with the development of adjacent land parcels.

Pedestrian Circulation

A safe and attractive network of sidewalks and crosswalks is important to the social and economic vitality of the hamlets. A convenient sidewalk system insures a proper balance between walking and vehicles, and helps restore the street as a social space. Slower vehicular speeds are essential in centers to insure pedestrian safety.

It is recommended that a Town committee be established to study and oversee circulation and transportation issues in the hamlets of Milton and Marlboro, and to determine the "walkability" of the hamlets. The committee should prepare an inventory of sidewalks, crosswalks, benches, bus stops, bike racks and high pedestrian generators, such as post office, schools and public parking lots, as well as obstacles to walking. Such obstacles include speed limits of 30 miles per hour or greater, overly wide roads, lack of sidewalks and/or crosswalks, no buffer from traffic, gaps between storefronts, or parking lots placed in front of stores. The committee should determine whether the existing sidewalk provides for adequate circulation from nearby residential areas into the commercial centers, and if there are sufficient pedestrian accessories.

The committee should develop standards for sidewalks, street lighting, curbing, and parking and make recommendations regarding sidewalk extensions, new crosswalks, and bicycle circulation. The standards and recommendations developed by the committee would be used by the Planning Board when reviewing site plans.

Some sample pedestrian-friendly guidelines provided in the aforementioned publication, "Greenway Connections," include the following:

- 5-foot minimum width for sidewalks, with an 8 to 15-foot width in commercial areas
- 7-foot minimum height clearance
- Construction with attractive, durable materials such as brick or concrete pavers
- Provision of a buffer of at least 4 feet between the curb and sidewalk to separate walkers from traffic and allow room for street trees and snow storage
    - Compliance of sidewalk and crosswalk design with the Americans with Disabilities Act (ADA) requirements
    - Sidewalks to be provided along both sides of the street on central circulation streets, in commercial districts, near schools and in higher density residential areas
    - Sidewalks or a wide shoulder to be provided on one side of the road in lower density residential areas
- Crosswalks to be as short as possible with small corner radii and a width of about 10 feet
    - Crosswalks to be well-lit, boldly marked with bar stripes or a textured surface and located at every major intersection and at selected high volume mid-block crossings
- Traffic speeds slowed to 30 mph, preferably under 20 mph in high pedestrian areas
    - Pedestrian signals to be provided and “right turn on red” eliminated at major crossing locations

VIII. Economic Development

Economic development is a goal of the Town of Marlborough as well as other southern Ulster County communities. Marlborough is a member of the Southern Ulster Alliance whose mission statement includes economic development as a key tenet. At the 1999 Countryside Exchange, it was noted that it is important for participating communities to develop a unified economic development strategy for the region. The recommendations of the Countryside Exchange include:

- develop an economic development strategy through consensus participation;
- improve and access data, including participating in the development of a GIS;
- network to provide links to other business groups across the Hudson Region and identify other communities to visit and absorb best practice;
- explore the techniques and planning policies that would support the economic development strategy and work with others to help put these into practice;
- recognize that open space is part of the infrastructure and requires investment
- small business development in all sectors, helping to maintain the character of the towns and villages (including Main Street) and to capture the opportunities for economic development from resources such as art and heritage.

Important in the consideration of economic development is the significance of agriculture and tourism to the local economy. The area has high visitations due to the rural attractiveness of the area and easy access to the New York metropolitan area. There are a number of themes around which tourism could be developed including agriculture. Farms and wineries selling directly to visitors is an important component of tourism.

Aside from tourism and agriculture, the Land Use Plan makes recommendations for encouraging new commercial uses along Route 9W. Important here is the extension of water,

gas and sanitary sewer service along the highway in areas outside the hamlets. The Land Use Plan also proposes that an area outside of Milton along Route 9W which can be serviced by public water and sewer be considered for light industrial and manufacturing uses.

IX. Community Facilities and Utilities

The major community facilities are the municipal building complex and the 42 acre Town Park on Route 9W in the Milton area. The Town Park was recently expanded but there is a lack of recreation facilities in the Town, particularly for 8 to 13 year olds. The hamlet of Marlboro is removed from the Town Park and consideration should be given to acquiring land for a park adjacent to the hamlet. The Town should also consider acquiring additional land for recreation in Milton. A recommendation of this Master Plan is to conduct an in-depth recreation needs analysis. Recreation needs are directly proportional to population levels.

A variety of standards have been developed over the years throughout the country to gauge the need for recreation and open space. Over time, a figure of 10 acres per 1,000 residents has come to be a commonly accepted standard used by a majority of communities. The population ratio method is best known and most used for determining park and recreation space standards. It is simple to use and easily updated. It should not be used as an absolute guideline but as a flexible planning tool used in concert with identified local needs for specific facilities. Based on the population ratio method, it appears Marlborough currently is well below recommended standards.

The National Recreation, Park and Open Space Standards and Guidelines for facility needs are an additional method in determining the general recreational needs of a community. These standards are based on the required number of facilities (ballfields, tennis courts, etc.) for a given population. The National Recreation and Park Association Standards for specific facilities has been widely accepted and are used as guidelines for recreation development (see Appendix I).

With regard to utilities, both the hamlets of Marlboro and Milton have public water supply and sanitary sewer systems. Plans should be made for the eventual

expansion of these systems to adjacent areas, particularly along Route 9W. In addition, the extension of the gas pipeline and fiber optics cable up Route 9W is needed.

Consideration has been given to the building of a new Town Hall.

The school district in the Town has indicated a need to expand the elementary school facilities. The school district's needs and Town planning efforts should be better coordinated.

X. Hamlet Development

Background

The Town of Marlborough contains two hamlets that are developed at a much higher density than the remainder of the Town. They are Marlboro along Route 9W at the south end of the Town and Milton between Route 9W and the Hudson River at the north end of Town. Based on the 1990 census, the two hamlets combined contained approximately 46% of the housing units in the Town and 50% of the population.

Although detailed information on population and housing characteristics is not yet available for 2000, preliminary data from the 2000 census shows that the percentage of the total town population that resides in the hamlets has dropped slightly to 43%.

The two hamlets are defined and enumerated by the U.S. Bureau of the Census as CDPs or "census designated place." As defined by the Census Bureau, a census designated place is "a closely settled population center without corporate boundaries." Table J-1 (see Appendix J) has been developed from available 1990 CDP data on Marlboro and Milton to determine what differences, if any, exist between the population and housing characteristics of the two hamlets and those of the Town.

Table J-1 in Appendix J reveals no significant differences in population and housing characteristics between the hamlets and the Town at large. Percentages of the school age (17 and under) population are quite similar as are those for married couple and non-family households. The senior population is approximately 15 to 20% higher in the hamlets than in the Town as a whole. Marlboro is somewhat lower than the others in its percentage of home owners and correspondingly higher in its percentage of renters. The median value of owner occupied housing in Milton is four percent lower than in Marlboro and eight percent lower than for the Town as a whole. Median monthly rents in Milton, however, are higher. Single family homes are a larger proportion of all housing units in the Town than in the hamlets but are the predominant form of housing in all

three. Because of its sewer district, Marlboro has approximately half of all the Town's two family and multiple (3 or more units per structure) dwellings.

In contrast to their similarities, hamlet differences in density and circulation are notable. The hamlet of Marlboro has water and sewer districts but few large lots and little vacant land. Route 9W with its unsignalized intersections, two-lane width and attendant traffic congestion has a major impact on Marlboro's businesses and residents. Parking is minimal and movement, whether as a pedestrian or motorist, is difficult. Further retail commercial development within the hamlet is unlikely due to lack of space.

Milton's major obstacle to growth had been its lack of a sewage collection and treatment system that was only recently rectified. It is distant enough from Route 9W to be relatively unaffected by its traffic and now has a signalized intersection at Milton Turnpike for safe ingress and egress. Unlike Marlboro, its main roadway system, a north/south spine, provides a less busy internal circulation route that complements local retail activity and buffers adjacent residential areas. The lack of a sewer district made it difficult for Milton to maintain a commercial area for the kind of retail services needed by a functioning hamlet. The improved infrastructure should lead to increased retail activity for an expanding population as well as for future creative adaptive reuse of vacant industrial properties such as those of the former Hudson Valley Apple Company and Kedem Winery (now owned by the Town).

Milton has the open space to allow for a variety of new housing in a variety of settings.

Milton's buffer from Route 9W, its central circulation, general openness and proximity to the Hudson are assets to development that could be particularly enhanced should community access to the riverfront be provided. Provision of public recreation in that area would make such access even more attractive. Interest in the hamlet and a sense of community is evident in the quality of new housing and the extent of maintenance and improvements to existing structures.

Milton has an impressive collection of attractive nineteenth century housing on large lots as well as a full complement of community facilities which include a fire company, library, school and churches.

Any plan for the future of the Town of Marlborough must include the direction of new growth away from the rural agricultural areas and into the two hamlets of Marlboro and Milton. Building close to existing population centers makes communities more walkable and efficiently takes advantage of infrastructure already in place, such as streets, water and sewer systems, parks and schools. As these centers grow and fill in, they can support a wider range of activities for their residents. Dispersed development wastes both rural land and residents' tax dollars, extending expensive services to outlying areas. Both hamlets now have the infrastructure of water and sewer districts that can accommodate higher density development. Consideration should be given to reducing minimum lot sizes in both hamlets. At the same time that growth is encouraged in the hamlets, new development must be sensitive to what currently exists and historic character. Historic resources should be identified and guidelines for their protection should be developed. The scale and architecture of new development should be visually compatible with the existing character of adjoining properties and the neighborhood. Architectural design that is harmonious with the character of existing development and which enhances the character of the surrounding neighborhood avoids adversely effecting the value of nearby properties. Harmony can be achieved by requiring a coordinated relationship among design features, such as height and mass, building proportions, roof lines, building projections and ornamental features. Also, large unbroken building masses should be avoided and exterior walls should use attractive and quality building materials. Non-reflective building materials such as wood and stone should be encouraged for exteriors. Exterior colors should be attractive and harmonious with façade and roof materials. Signage on commercial properties should be of proper scale and the design and colors used in signage should not detract from the appearance of buildings. The Planning Board should develop architectural review standards and implement them in the review of new development, with the highest priority given to the hamlets and the 9W corridor.

Street trees are a beneficial addition to the streetscape of the hamlets. Their benefits include cleaning the air by absorbing polluting gases, providing shade in the summer, visually unifying the varied architecture and setbacks along the street, providing a sense of protection from traffic for pedestrians and increasing adjacent property values. Trees should be spaced 30 to 50 feet apart (depending on tree size) in centers with low speed limits and farther apart and slightly back from the road in areas with higher speeds. A shift in street trees close to the road is an excellent way to mark the entrance to a hamlet or school zone and help reinforce slower speed limits.

In order to encourage new growth in the hamlets, the use of Transfer of Development Rights (TDR) should be explored. TDR involves transferring the right to develop from one zone to another. In the case of Marlborough, the Rural Agricultural District could be established as a sending district with the right to develop transferred from that district to the R Residential District in the hamlets which would become a receiving district. A development bank would be established to receive (buy) and transfer (sell) credits. Prior to establishing a receiving district, a generic environmental impact statement would need to be prepared, as required by Section 261-a of New York State Town Law, to determine that the district contains adequate resources to absorb the increased development.

To fill specific gaps in the streetscape of the hamlets, the Town could prepare an inventory of potential redevelopment sites and a set of strategies to attract infill interests. Vacant properties, existing buildings that can be substantially expanded on the site or structures that are incompatible with historic areas should be identified. Publicly owned properties or larger redevelopment sites can be advertised through a Request for Proposal (RFP) process to solicit competitive ideas for redevelopment.

Specific planning recommendations for each hamlet follows:

Marlboro

The hamlet of Marlboro has grown little in recent years with most new growth in the Town of Marlborough occurring in more rural areas. As noted earlier, there is little vacant land remaining within the hamlet of Marlboro. The Town will need to study whether expansion of the hamlet will require upgraded water and sewer infrastructure.

Perhaps the most critical issue in Marlboro is the traffic associated with Route 9W. The intersection of Route 9W with Western Avenue is a particular problem as discussed in the Circulation and Transportation element. An associated issue is the very limited on-street as well as off-street parking in the commercial area centered on Route 9W and Western Avenue. A resolution to the traffic and parking issues is needed and once that is resolved, enhancements to the commercial area should be considered including streetscape and sidewalk improvements with new lighting, landscaping and street furniture.

The lack of park and recreation facilities is also a major concern in Marlboro. Additional recreation facilities should be provided in the hamlet to meet the needs of all age groups in the community. A large park similar to the town park outside of Milton should be provided. Within the hamlet proper a sense of center should be created with a small passive park that could also be used for cultural events and performances.

Milton

The provision of sewers in Milton has opened the hamlet up to new development. New development in Milton should be especially sensitive to the existing neighborhood fabric. The historic structures and street system of Milton are more conducive to tourism than Marlboro and development that caters to tourism such as antique stores should be encouraged.

A plan should be developed to encourage the rehabilitation and/or conservation of the remaining buildings along Main Street. Improvements to lighting and sidewalks and other streetscape enhancements as well as the provision of parking should be implemented to renew the development of a central retail area.

Funding, including grant monies, should be sought to rehabilitate the railroad station and other structures on the Kedem Winery property. Means should be sought to create waterfront access and recreational amenities in the Milton area either on the Kedem Winery property or elsewhere.

Within the hamlet of Milton there are several incompatible land uses such as an industrial use with heavy truck traffic in a residential area. Such incompatible land uses should be encouraged to locate where there is ease of access such as adjacent to Route 9W. A recommendation in the land use plan element was to locate a light industrial park in the vicinity of the Route 9W intersection with Milton Turnpike.