

# **Town of Pine Plains**

## **Updated Comprehensive Plan**

### **Volume 2: Appendices**

**April 2004**

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# Appendix 1            COMMUNITY VALUES

## SURVEY METHOD AND ANALYSIS

A written survey was developed by the Special Board and was based upon the resident survey originally conducted in 1987. It was updated and expanded upon and was mailed to 2,040 residents and landowners (see Appendix 1). There were 268 surveys received. Answers from the surveys were compiled in an Excel database and summarized as described below.

## SURVEY RESULTS

### Questions 1-12

Most of the community services were considered to have good to excellent quality. Fire and emergency services were rated the highest (average rating of 4.5, on a scale of 1 to 5). Police, outdoor recreation facilities, the town hall facility and location, and schools were also rated high (averages from 3.3 to 3.7). Programs and facilities for teens, recreation programs for young children, and the library were rated the lowest (ranging from 2.3 to 2.8). Regarding the Town Hall, 32% said that its location is poor, but 42% said it was good to excellent, and the remaining 24% rated its location in the middle. Almost 47% of respondents felt that the Town Hall facility itself was good to excellent. Four persons felt that the Town Hall should be located in the town center.

Participants indicated that the library needs more space to offer services (17 people said this). While police services were rated quite high, 12 persons felt that local police are not needed.

### Questions 13-25

Almost half of the participants indicated that they had no opinion on the adequacy of site plan and subdivision review processes in Pine Plains, the lighting district, or the Town water service. This answer most likely represents those people who have not participated in any planning board review process or that do not receive lighting or water services from the Town. However, 20% of all respondents said the site plan review process is poor with 11% indicating that it is good to excellent: 22% rated it in the middle. A similar pattern is seen for rankings of the subdivision review process. 47% responded that the lighting district is good to excellent, with 18% rating this service in the middle. Location of public parking in Town and maintenance of roads received very high ratings (average ranking over 4) with 73% of participants liking location of public parking. About 67% thought the parking quantity was good to excellent.

Both Town and County roads were considered to be good to excellent although county roads received fewer “excellent” ratings than did Town roads. Although many respondents had no opinion about the water system, those that did rated this service good to excellent. Sidewalk availability had mixed rankings: 23% said it was poor, 29% said it was moderate, and 43% said it was good to excellent. Most participants however, rated sidewalk conditions as moderate to poor. A majority of the written comments to this question related to poor sidewalk quality along Main, Pine, and Maple Streets. Some other frequent comments relating to government services were that public parking lights are too bright, the Hamlet needs better lighting, and town tree removal is too vigorous.

Responsiveness of the Town Board also received somewhat mixed rankings: 19% said it was poor, 36% ranked it moderate, and 30% said it was good to excellent.

#### Questions 26-40

The majority of participants felt that public access to hiking on Stissing Mountain was the most important recreational opportunity in Pine Plains. Other very important opportunities desired were a hiking trail system with guide maps, public access to open land, and bike paths. Those recreational services that were considered moderately important (average rankings around “3”) included cultural facilities, public access to streams, a teen center, a senior citizen center, and cross-country ski facilities. Swimming pool, horseback riding trails, and ice-skating facilities had mixed results with an equal number of people indicating these were important as those who said they were not important. 44% of participants indicated that a supervised adult recreation program was not important although 20% said this was of moderate importance and 24% said it was important. The majority of survey respondents did not consider snowmobile trails or skateboard facilities important.

#### Question 41

The survey asked people to identify which businesses they would like to see encouraged in Pine Plains. The most desired type of businesses was small, retail stores (<5000 square feet). Seventy-five percent of respondents wanted to encourage this type of business. A large majority of respondents wanted to encourage agricultural operations. Seventy-two percent desired agricultural operations, while 66% wanted to encourage bed and breakfasts, 62% wanted to encourage other service businesses and professional services. Fifty-nine percent of people said that home occupations should be encouraged. Less than 40% of the participants felt that restaurants, light industry, motel/inns, campgrounds, and 24-hour convenience stores should be encouraged. Large retail operations and heavy industry were businesses that were favored by fewer participants (16% and 7%, respectively).

#### Question 42

There were three very clear and high-ranking responses by people when asked what the three best things about Pine Plains were: the people (95 responses); small rural town (94 responses) and the scenery (89 responses). Other positive features of the Town included Stissing Mountain (45); the lakes (Thompson, Stissing) (43) and the quiet and safe atmosphere of the area (37). Others include the Town’s atmosphere (27); Town (24); community spirit (21); farmland (18); open space (16); and facilities (15); teachers/ school (14); local business (13); fire/ rescue (12); location (11); roads/ highway (11); isolation (11); restaurants (10); churches (10); and the lack of any large business (10).

#### Question 43

When asked what the negative features of the Town were, lack of zoning in Pine Plains was the top response (60 responses). Other very important negative features include unkempt properties and lack of retail, entertainment and professional opportunities (45 responses each). Lack of recreation & activities for youth, teens and seniors received 39 responses each. Thirty-two persons listed presence of slum landlords as a negative. Twenty-two respondents noted lack of enforcement of local laws as a negative. There were a variety of comments related to the school district (20 responses). Other common responses included lack of refuse/ recycling services offered; the negative influence of “weekenders” or outsiders (20 responses each); Town hall is in a poor location (17 votes); inadequate library (13); barking dogs and dogs running loose (12); and no defined town center (10).

#### Question 44

The three most important issues or threats to Pine Plains over the next 10 years included uncontrolled development, (noted by 62 respondents), no zoning (58 responses) and disappearing open spaces (39 responses). Overcrowding, (37) loss of agriculture (27), lack of small business opportunity (23), unkempt property (21) and the health of the Town center (20) were all felt to be significant threats by participants. Some other topics considered a threat by 10 to 20 persons were: health of the lake; crime; maintenance of good schools; environmental quality; new people; high taxes; lack of jobs for youth; fear of industrial growth; building of strip malls; need for a new library; un-enforced local regulations; and the Town's water and sewer quality. Lack of services and programs for the elderly and lack of affordable homes both were listed by ten persons as being threats facing the Town in the next ten years.

#### Question 45

Participants of the survey offered 133 different opportunities that could be taken advantage of in Pine Plains. The most common responses were to encourage small businesses and provide incentives (44); preserve the rural, small town character (32), initiate controlled (planned) development (30); establish zoning regulations (26); preserve and provide access to open space (19); develop cultural and educational facilities (18); invite tourism (17); and protect view sheds (17). Some other opportunities were to improve the Town center (16); expand & improve library (15); provide more recreation activities (15); and improve the school (14). Stissing Lake and Mountain area were considered to be opportunities for the Town as well as historic preservation and restoration.

#### Questions 46-48

The visual character of Town was rated as good to excellent by 48% of participants. Thirty percent rated it moderately with 20% saying it was poor. There was no consensus when asked about the current level of protection given in Town regulations to the environment: 27% said visual character was given poor protection, 31% said it had moderate protection, and 25% said it had good to excellent protection. Slightly more (32%) felt that historic resources were protected than those who said this was poor (19%). 27% ranked current protection to historic resources as moderate.

#### Questions 49-55

These questions explored what role the Town of Pine Plains should have in the future. Participants clearly desire to see their town as a farming, residential and historical area. Many people (about 48%) also desired cultural and tourist roles for the Town. There was less desire to see a significant role for business (49% said not desirable). Finally, over 70% of participants indicated that they did not desire to see the Town as a government center.

#### Question 56

The most common response to the question "How well are local land use regulations working to guide commercial development," was "no comment" or "no answer" (177 people). Comments such as "Not very well" or "poor" were the response of 74 participants. Twenty-five persons indicated that they were unsure. Nineteen persons mentioned the "car wash fiasco" as indicative of problems and 11 responded, "no planning (no zoning)." Another seven responded "no land use regulations and "no enforcement of existing laws"

### Question 57

The most common response to the question “How well are local land use regulations working to guide residential development was “not working” by 68 persons. The reasons given as to why the regulations are not working included lack of local enforcement, lack of zoning, no guidelines for development, people have abused local power, and slum and absentee landlords. Eleven felt that the Town is doing just fine without zoning. Twenty-four persons indicated that they were not familiar or aware of the regulations.

### Questions 58-65

A large majority of participants were in favor of regulations or programs to guide development in Pine Plains. About 85% of participants said they favored regulation of mobile homes, setting density of residential development, and setting standards to guide aesthetics of new commercial development. 79% favored protecting open space in every major subdivision, and 72% favored controlling home based businesses for neighborhood compatibility. Most participants were not in favor of developing a central sewer system or providing more multi-family housing.

Written comments related to these questions concentrated on the need to get rid of Section 8 housing and slumlords in Town, and to fix rentals that are already in existence (9 responses). Others felt that zoning was needed to protect what is already in Pine Plains (7 responses), and that multi-family houses need to be regulated (7). There were others who were not in favor of zoning (5), and didn't want to see too much regulation (3).

### Questions 66-69

It was very important to participants that open spaces are protected and recycling be sponsored in Pine Plains (average ranking of 4.5 and 4.4, respectively). It was also important to sponsor solid waste collection as well (average ranking of 3.9). Just over half of participants (54%) did not feel it was very important to have a web site.

### Questions 70-73

67% of participants have lived in Pine Plains for over 15 years. 21% have been here 6-15 years, and about 8% have been here less than 5 years. 91% were full time residents and almost all were homeowners. The majority of participants represented those people aged 25-64 years old. Very few had elderly persons in their family. Overall, the survey under-represents those people who rent, are part-time residents and are newcomers to the Town. It is fairly representative of the age structure of Pine Plains.

### Questions 74-76

The listing of Important Places summarizes the responses to where participants identified scenic locations, special or important locations, and places appropriate for new commercial development. This map can be summarized as follows:

The most frequently cited “places of the heart” or other special locations were the Fire Tower, Stissing Lake, Thompson Pond, Stissing Mountain State Forest (Miller Pond and gorge), Lafayetteville State Forest (the Hamm Brook and Wood Street area), Halcyon Lake and wetlands, the intersection of Routes 199, 82 and North Main Street and Twin Island Lake.

The most scenic locations were very similar to those “places of the heart” and were identified to be (in order of frequency of responses) Stissing Mountain State Forest, Stissing Lake, the Fire tower,

Thompson Pond, Twin Island Lake, Halcyon Lake and wetlands to the southwest, Skunks Misery Road, Bethel Cross Road, Stissing Mountain Road, Schultz Hill Road - south of Johnny Cake Hollow, Johnny Cake Hollow Road, Stissing Lake Road, Route 83 south of Bethel, Silvernails/ Hoffman Roads (stream), Bean River area, Route 199 at Winchell Mountain Road (Mtn.), Shekomeko stream, north of Route 199, Stissing Mountain Drive, and east of Bethel.

Locations desired for new commercial development were far ranging, but concentrated in the center of Pine Plains hamlet. Other favored locations were at the intersection of Routes 199 & 82 & North Main Street; behind the intersections of Routes 82 & 83 off of Myrtle Ave; and along Route 199 from Bowman to Birch. The map does show that there were many other locations identified for new commercial growth but the majority of responses were in or near the Hamlet.

## COMPARISON OF 2001 SURVEY RESULTS TO 1986 RESULTS

In preparation for the 1987 Comprehensive Plan, the Town of Pine Plains surveyed its residents to learn their opinions regarding the town's needs and opportunities. The survey, conducted in the summer of 1986, received a high response rate (50% of the town's residents). The 2001 survey received a lower response rate (13%). While the questions and format of the 1986 and 2001 surveys are somewhat distinct, several comparisons and trends are evident.

In both surveys, respondents cited the town's beauty and rural character as its most important assets, and considered recreation facilities and opportunities (excluding activities for teens), emergency services, and roads (town and county) as adequate.

Both surveys showed the desire for small-scale commercial development that does not destroy the town's rural character. These could include small retail shops, bed and breakfasts, home or other professional businesses, and agricultural operations. Neither survey showed support for larger commercial entities or heavy industries.

Respondents to the 1986 survey felt that development was not sufficiently controlled by regulations, especially in regards to protection of water quality, agricultural land, wildlife, wetlands, slopes, and historic structures and areas. Respondents to the 2001 survey specifically cited the loss of agricultural land, due to the absence of zoning, as a threat to the community. Furthermore, both indicated that the town should weigh the benefits of development against the preservation of Pine Plains' rural, small town character, and the provision and access to open space.

Both surveys noted the need for affordable housing as well as the need to control the development and siting of mobile homes. A large number of the respondents in the most recent survey felt that this could be accomplished through zoning or other land use regulations. They also did not feel that existing land development regulations were performing to guide residential development in an appropriate manner.

In terms of vision for the future, respondents to the 1986 survey did not want development to bring an influx of new residents or tourists, and they wanted new construction and development to be compatible with existing town character. Respondents to the 2001 survey stressed a very similar sentiment. They envisioned the town's future to be a historical, residential area with strong agriculture, cultural opportunities and some tourism.

Two of the most significant issues posed in the 1986 survey, disposal of solid waste and the water system, were not as important to respondents to the 2001 survey. According to the 1986 survey, solid waste was the most frequently cited issue. Fifty-seven percent of the respondents felt the town needed a local transfer station to solve the inadequacy of the existing system. With regard to community services, only 29 percent of the respondents felt the water system was adequate. In 2001, almost half of the respondents had no opinion about the water system, and those that did, rated the service good to excellent. Related to the disposal of solid waste, many respondents felt it was important for the town to sponsor solid waste collection. However, they did not consider the inadequacy of the system a major threat to the lifestyle or quality of life in the community.

## PLANNING WORKSHOP

In September 2001, a planning and visioning workshop was held in Pine Plains. The objective of this workshop was to involve residents and landowners in identifying strengths, weaknesses, threats, and opportunities facing Pine Plains. Additionally, a primary objective was to establish consensus on a vision for the future of the Town.

Participants worked in small groups to develop a vision statement for the Town and they identified the following desired elements or characteristics for Pine Plains future:

### Matrix of Visioning Elements

<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>	<b>Group 4</b>	<b>Group 5</b>	<b>Group 6</b>
Strong Town Center		Town Center	Town Center		Hamlet center
Town Services	Municipal services		Good Government		Town services
Maintain Farming		Preserve open space and agriculture			
Maintain visual beauty and environmental integrity					Environmental preservation
Rural character	Scenic beauty and rural setting			Location and beautiful surroundings	
Strong Sense of Community	Pride of Ownership	Sense of Community		Civic pride and spirit	Community Involvement
	Small town atmosphere			Small town development	
	Small Hamlet look				
	Community support for retail and business				

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6
		Establish and enforce land use regulations		Good land use planning	Zoning and Open Space
			Open space		
			Highways		Good Transportation
			Cultural Activities		
		Stewardship of public property and recreational opportunities			Recreation
			Schools		

Each group worked to develop a vision statement for their table. The Special Board later compiled these statements into one unified statement. The vision statements developed at the workshop were:

**First group:**

“The town center is attractive, prosperous with small businesses that are supported by community. Farming has developed and evolved into self-sufficiency supplying market needs and is central to identity of town. Open land exists for recreation and preservation of natural beauty and is protected. Zoning exists to help facilitate preservation of open space, small neighborhoods and centralized business areas. The town services, including good schools, police, fire dept., garbage collection and clean water & air, meet needs of residents. There is strong community spirit - citizens are proud of their town & committed to preserving its best qualities. The community contains a variety of income levels. An outstanding library serves all residents. The town has attractive, affordable housing for both low income and senior citizens.”

**Second group:**

“Pine Plains has maintained its character & improved its appearance as a defined walking scale community center. Open space & agricultural uses have been preserved. Land use regulation which advance community goals have been established & enforced. We educate, encourage & facilitate preservation, restoration & adaptive reuse of historic resources. We encourage a sense of community belonging & ownership - government, services, activities, and education. We actively develop recreation opportunities including a trail system.”

**Third group:**

“Preserve open space & encourage agricultural use. Establish & enforce land use regulations to advance community goals. Educate, encourage & facilitate preservation & restoration and adaptive reuse of historic architecture. Maintain character & improve appearance & function of defined hamlet/ walking center. There is belonging and ownership accountability, a sense of community (services) and quality education. Stewardship of public property/ recreation - actively develop public access & opportunities.”

**Fourth group:**

“The Town Board must be responsive to the will of the people. Maintain the rural character by preserving open space and agriculture. The town center should be diverse, attractive, maintained, pedestrian friendly and fill the needs of the residents. The community supports the local schools. The town should offer community and cultural events. The town should work to keep the two state highways in line with the community character.”

**Fifth group:**

“We have won the National Award for a “Perfect Town” because we have maintained our country location and small town atmosphere with no large commercial establishments. This has been accomplished through good land use planning. Our civic pride and spirit is very apparent.”

**Sixth group:**

“Implementation of land use regulations, to enforce the plan, protect open space, ensure compatible business enterprise and provide adequate rental housing. Encourage community involvement in education, town governance and community activities. Provide more recreational opportunities and infrastructure for all ages; but especially for the students and the elderly. Maintain and improve an intimate, rural, compatible town center with appropriate business enterprises. Improve library facilities and provide computer access for the community. Improve in town transportation for the young, the elderly and the physically impaired. Preserve our beautiful natural setting with planning for open space, lakes, wetlands, farm lands and vista protection (views & roads).”

In addition to developing a vision for Pine Plains, participants worked to identify positive and negative features about the Town. These were:

**Most Positive Attributes of Pine Plains**

Rural atmosphere, open space and agriculture  
Scenic vistas  
Small town atmosphere  
Sense of community

**Most Negative Attributes of Pine Plains**

Lack of land use regulations and zoning  
Poorly kept buildings in the business district  
Slum landlords and old houses turned into multi-family dwellings  
Absence of overall vision and mechanism to implement it  
Lack of garbage pick-up, recycling, transfer station

## Appendix 2 Business Survey

The Special Board developed a survey specifically to determine how business owners and managers feel about the Town and its economic climate. There were 49 participants in the business survey. A copy of the business survey can be found in Appendix 1.

### **About the Businesses:**

The reasons given for locating business in Pine Plains were:

- The business was already located here (Most of the businesses indicated this reason)
- There was inexpensive rent (4)
- They moved here (3)
- There was a need and minimal competition (3)
- They wanted to be in a rural setting
- Few regulatory restrictions

### Number of Employees

- 146 full time employees
- 63 Part time employees
- 27 Seasonal employees
- 236 Total Employees**

Median year businesses were established: 1989

- 63% own their place of business; 37% rent
- 32% are home-based businesses; 67% are not
- 70% indicated that their employees are typically Pine Plains residents; 25% said they are not; 5% said both
- 28% indicated that their customers primarily come from within Pine Plains; 53% do not; 18% said both
- 61% see seasonal or weekend increases in their business; 38% said they do not
- 72% said that weekend residents are an important part of their business; 28% said they are not important
- 65% of business owners live in Pine Plains; 35% said they do not live in Pine Plains

### **23 different town services were identified as desirable:**

- Garbage pickup (6)
- Better library (5)
- Recycling services (4)
- A community center (3)
- Youth services (3)
- Leaf pickup (3)
- Sidewalks (2)
- Stricter enforcement of multi-family uses and businesses (2)

One person each listed the following desired services:

- |                     |                  |                              |
|---------------------|------------------|------------------------------|
| Dog census          | More landscaping | Zoning                       |
| Competitive banking | Parking          | Non-sport teenage activities |

Garbage baskets in town      Chamber of commerce      Legal services  
 Move Town Hall      A pool      Junk vehicle removal  
 Expand water district, but do not keep it as a separately administered program in Town

Services in Town that Business Have An Issue With...

Police Department (11)  
 It is wasted money and not needed due to State Police and Sheriff already here (7)  
 Police discourage out of town visitors by over-concentrating on catching speeders (4)  
 Lack of zoning is a problem

**Regarding Locations for New Commercial Development:**

87% of businesses surveyed indicated that there are enough locations for commercial development or expansion in the Town; 13% said there are not enough locations

89% of businesses indicated that there are enough locations for commercial development or expansion in the Hamlet; 11% said there are not enough locations

Physical conditions of existing buildings for commercial use in the Hamlet were considered

Excellent	1 person
Good	5 people
Fair	26 people
Poor	7 people
Don't Know	4 people

**Benefits of having their business in Pine Plains were:**

It is a central location and easily accessible (8)  
 A short commute (3)  
 There is no competition for my business (3)  
 Character is great (ambience, beauty, scenic views, rural character (5)  
 It is good to deal with local people (2)

One person each listed the following benefits:

Convenience	Less regulation here	Word of mouth advertising is good
Affordable property	It is a growing area	There is regional demand
Good schools	Some client base	Lifestyle is great
Summer visitors	People from outside love the atmosphere of Pine Plains	
Can offer personalized services		There is a good land base

**Drawbacks of having a business in Pine Plains were:**

There are not enough customers due to limited residential density and low through-traffic (17)  
 Limited or difficult shipping options (2)  
 There is a lack of sensitivity for the rural setting  
 Not enough healthy vegetarian food options  
 Not enough copy shop/office supply services  
 Far from urban area  
 Limited opportunities for young people  
 Local clientele rather unsophisticated  
 Lack of market

**Public events that benefit businesses:**

- None (10)
- Any (5)
- Dog Show (3)

- Tri-arts productions
- Annual Carnival
- Dutchess County Fair
- Ag Day
- Health Fair
- Parades

**Ideas for business-friendly events:**

- Discover Pine Plains Day, street fair, sidewalk sale to feature local businesses, etc. (4)
- Reintroduction of Community Day (2)
- Farmers Market (2)
- Flea Market
- Revive Business Association
- Parades
- Tours

**Additional businesses that were desired:**

- Bakery (8)
- Mom and Pop, small oriented retail (8)
- General store (5)
- Movie theater (4)
- Dry cleaner (4)
- Light manufacturing (3)
- Assisted living facility (3)
- Restaurant (2)
- Another grocery store (2)
- Lumber yard (2)
- Outdoor sports supplies (2)

One person each listed the following desired businesses:

- |                   |                                    |                |
|-------------------|------------------------------------|----------------|
| Boutique          | Bank                               | Walmart        |
| Gift shops        | Paint store                        | Farmers market |
| Architect         | Home-based or office professionals |                |
| Copy shop         | Health food store                  | Art gallery    |
| Cultural center   | Book store                         | Gym/fitness    |
| Department store  | Meat or fish market                | Office supply  |
| Ethnic restaurant | Car wash                           | Taxi service   |

**Businesses that were not desired in Pine Plains:**

- Fast food (10)
- Big Industry (10)
- Chain or franchised stores (9)

- More restaurants and coffee shops (7)
- Anything that would have a negative impact on the environment (6)
- Landfill or waste dump of any kind (4)
- Strip malls (2)
- Shooting clubs (2)
- Mines (2)
- Convenience store
- Another bookstore
- Auto repair
- Gas stations
- Adult businesses
- Waste recycling business
- High density residential

**Opportunities for additional commercial development included:**

- Old buildings that can be converted to new uses (3)
- Anything on a small scale (2)
- Laundromat building has lots of potential (2)
- Lack of zoning (2)
- Vacant buildings available
- Organic farming
- There is a need for a business plan and sound zoning
- There are many...need an organized way to promote the town
- Assisted living
- Childcare
- Don't want to see any
- Will need to decrease prices first
- There is land available in town center
- Excellent for small manufacturing
- Lots, but it depends on the amount of money made available

**Threats to additional commercial development in Town included:**

- Lack of zoning (4)
- Loss of rural character (2)
- Anything that spoils historic character
- Tougher codes
- Too strict a planning board
- Low population level
- Chain stores
- Poor traffic planning
- Zoning
- Over-development
- Lack of environmental protection
- Disruption of small town climate
- Business attitudes, which do not respect others
- No plan for business development
- Zoning has positive and negative points
- That we won't allow it

Ninety-two percent indicated that the Town is business friendly; 8% said it is not business friendly. Four comments were made and included: business owners and post office are unfriendly and lack support; you can't get by the planning board, building inspector or assessor; needs to be more attractive so people will stop and walk around; difficult for new businesses to start up.

Eighty-one percent said that current regulations (i.e., building codes) meet their business needs; 19% said they do not meet their needs. Six comments were made as to why the regulations do not meet their needs and included: we need zoning (2); better and more codes would actually promote business expansion; code enforcement is non-existent; we could be stricter on land development to protect land and property; need regulations to protect residential areas; current regulations are too relaxed and lenient.

**A variety of other comments were received and included:**

- Downtown is in major need of repair, clean up, renovation, beautification (6).
- We need zoning to maintain rural atmosphere, and is more important than business growth.
- Need carefully planned business growth.
- Need zoning.
- Encourages the establishment of codes to require aesthetic responsibility (paint and general maintenance).
- Retail will diminish as Pine Plains heads for increased residential growth.
- Too many buildings are badly maintained.
- Too many new buildings are out of scale and ugly.
- Need to encourage more small and home-based businesses, but need standards for visual, aesthetic, sound, maintenance, etc. within reason.
- Buildings need to be built to scale of Pine Plains.
- Keep businesses in town center please.
- Disappointed with the movement of Town Hall and Post Office outside of town center.
- There is a lack of appreciation for aesthetics and historic qualities.
- Control development to maintain our rural character and sustain the environment.
- Weekenders and seasonal people are not good for year round retail.
- Hamlet needs lawn, landscaping and curbing work.
- Need to take a hard look at assessment rolls.
- Preserve rural and bucolic atmosphere.
- Lakes and mountain and natural beauty are greatest asset of Pine Plains – protect above anything else.
- It is a problem that people assume that local prices are high and then automatically go to large shopping areas...truth is that some of the best buys are local.

## Appendix 3 NATURAL RESOURCES

### GEOLOGY

The geological features of the town influence drainage patterns, topography, groundwater availability, and soil types. Each of these natural characteristics in turn, shapes the patterns of land use in the Town.

#### Bedrock

Bedrock types have distinct characteristics that affect land development, particularly in terms of water supply and soil types. Water is obtained from fissures and cavities in bedrock, and the quantity of water yielded depends on how much rock is fractured and how well the fractures and cavities interconnect. Variations in bedrock type also affect the permeability, porosity, and chemical makeup of the soils above, which, in turn, affect the type and density of development that is most appropriate in a given area.

The pattern of bedrock types in Pine Plains is unique, due to the existence of an outcrop of Proterozoic gneiss (more than 1,100 million years old) and Poughquag quartzite found on Stissing Mountain (See Pine Plains Bedrock Geology Map). This bedrock is comprised of granite and other rocks which have been metamorphosed by heat, pressure, or chemically active solutions and that have been uplifted, forming mountains and hills that are extremely resistant to weathering. The Hudson Highlands are another example of this formation. Wells drilled into this kind of rock typically yield only a small amount of water – an average of 10 gallons per minute (gpm).

To the west and north of Stissing Mountain, the bedrock type is pelitic, or mostly shales and schists. These rocks have low porosity and low permeability, with an average well yield of 16 gpm of soft water.

Large expanses of limestone carbonate rocks, known as the Wappinger group, is found in the lowlands in the central and eastern parts of town. This area is broken by narrow bands of pelitic rock in the Schultz Hill area and the highlands along the border with Northeast. The carbonate rocks include various types of limestone and dolostone. This rock is an excellent water source because it dissolves easily, and caverns and channels develop within it, holding large quantities of water. Wells in these areas typically yield an average of 22 gpm of hard water. Unfortunately, however, the prevalence of large caverns and cracks in carbonate rock means that water supplies contained within are extremely vulnerable to contamination. This is because there is often a direct connection between land use activities and ground water.

#### Surficial Deposits

Surficial deposits in Pine Plains are mostly unconsolidated materials deposited by glaciers and glacial melt waters (See Pine Plains Surficial Geology Map). This type covers most of the bedrock in the town, as well as the county and fall into three categories, two of which are abundant in Pine Plains. Each has distinct features that affect land development.

- Lacustrine deposits consist of fine-particled silt and clay laid down by glacial lakes. These deposits have very low permeability and porosity, which makes them unsuitable sites for septic systems and poor sources of groundwater. However, there are no measurable deposits of lacustrine materials in Pine Plains.

- Till consists of a mixture of materials of a wide range of sizes ranging from microscopic silt to boulders, and therefore its permeability and porosity can vary widely. Most of the till deposits in Dutchess County have a high clay content which limits their usefulness as groundwater reservoirs and requires that septic systems be carefully designed and separated. Reported yields from till wells range from 1 to 180 gpm with an average of 22 gpm.
- Sand and gravel consists of larger particles deposited in lowlands and river valleys. These deposits are the county's most productive groundwater sources, with reported yields of 2 to 1,400 gpm and an average of 136 gpm. These deposits also provide important building and road construction materials.

Glacial till covers most of the western and eastern thirds of the town. These deposits tend to be thicker in the lowlands than in the highlands, where they are more vulnerable to erosion.

Sand and gravel deposits are found in the lowlands in the central part of town and elsewhere along stream valleys. Sand and gravel often yields enough water to support high development densities and industrial uses. However, sand and gravel layers are so porous that pollution from overcrowded septic systems, salt, waste disposal sites, chemical spills, or other sources spreads through them easily, making them highly vulnerable to contamination. This combination of productivity as water supply and susceptibility to contamination makes it doubly important that land uses above sand and gravel deposits be carefully managed.

### Aquifers

Aquifers are natural groundwater reservoirs stored in surficial or bedrock deposits. Areas where sand and gravel overlie limestone are the most productive for water production, and at the same time, are also the most vulnerable aquifers in the county. In Pine Plains, such areas occur in the town center, south of the town center along the west side of route 82, north of the center from Route North Main St. to Route 82 north, and small areas east of Pulvers Corners, south of Bethel and along Bean River. (See Pine Plains Aquifer Map).

### TOPOGRAPHY

Relief and slope are two topographic features that significantly affect land use. Relief refers to the pattern of elevations or irregularities on the land surface. The slope of land is its degree of steepness.

These features represent varying degrees of constraints on development. For instance, topographic location affects groundwater yields from bedrock wells. Generally, the yield is highest in the valleys and lowest on the hills. This relationship stems partly from the fact that the water table is generally closer to the land surface in valleys than on hills; therefore, wells of the same depth penetrate a greater thickness of saturated material in valleys than on hills. The degree of slope also affects development constraints. Land which slopes at a degree greater than 15 percent, for example, is steep enough to present difficulties for development. Development on steep slopes tends to create difficulties in grading and road layouts, and it causes more erosion, more flooding, and a greater impact on off-site properties than would ordinarily occur.

### Relief

Pine Plains has a wide range of elevations, varying from 390 feet at the lowest point of the Shekomeko Creek at the Columbia County border to 1403 feet at the highest part of Stissing Mountain. The pattern of relief is directly related to the geology of the region, with a northeast-southwest orientation of hills and valleys.

The central part of Town lies in a valley that extends from the foot of Stissing Mountain to the beginning of the hills east of Route 82. The highest elevations other than Stissing Mountain are found in the eastern part of town, where several hills reach 1250 feet.

## Slope

Steep slopes, defined as areas with more than a 15 percent grade, cover one-third of Pine Plains. These areas provide a scenic backdrop to the valley floors and support much of the wildlife and vegetation in the Town. Steep slopes have remained largely undeveloped because costs for erosion control, proper septic system installation, road construction, and provision of services increase as slope increases. Slopes between 15 and 25 percent are generally restricted to uses such as very low-density residential, limited recreation, conservation, pasture, and wildlife preserves in many locations in New York. The costs of building on slopes greater than 25 percent are so high and the natural values and fragility of such areas so great, that severely sloping land should be left in its natural state. Often development pressures are strong enough that even high costs do not prevent development on steep slopes. Protection measures are needed so that this will not occur.

Steep slopes are infrequently found in the lowlands but are common throughout the remainder of the town (See Pine Plains Steep Slope Map). In particular, steep slopes dominate Stissing Mountain and the lands to the north and west (the entire western third of the town). In the east, steep slopes are especially prevalent between Route 83, Schultz Hill Road, and Route 199 as well as just east of Tripp McGhee Road and up to the northeastern corner of the town.

## SOILS

### Soil Depth and Permeability

Permeability and depth to bedrock are two features of soils that directly influence their suitability for development, crops, and other land uses. Permeability rates are measures of the ease with which water flows downward through soil layers. Septic fields and other uses requiring good internal drainage may not function properly in soils with low permeability rates. This condition can make it necessary to place severe restrictions on development densities in areas without central water and sewer systems. Shallow soils also limit the placement of septic systems, foundations and wells. Because they are often associated with steep slopes, shallow soils can be highly vulnerable to erosion and can transmit pollutants quickly.

The Natural Resources Conservation Services (NRCS) (formerly known as the Soil Conservation Service) of the U.S. Department of Agriculture uses a standard permeability rate of 0.63 inches per hour in rating soils; a lower rate is considered a severe limitation on the ability of septic systems to function properly. Approximately 14% of Pine Plains is covered by soils with permeability rates below 0.63 inches per hour. These soils are scattered throughout the town but are more common in the eastern half.

Shallow soils (those with a depth to bedrock of three feet or less) cover about 45 percent of Pine Plains, generally in the upland areas. Soils are deeper and more permeable in the central lowland area and in valleys throughout the town, where deposits of sand and gravel have accumulated over long periods of time.

### Prime Agricultural Soils

Prime Agricultural Soils are the best and potentially the most productive soils in the town. They tend to be level or gently sloping, fertile, stable and deep. As classified by the U.S. NRCS, prime soils are best suited to a wide variety of farm crops with relatively few limitations.

In Pine Plains, these soils cover approximately one-fifth of the town, mostly east of Stissing Mountain. Prime agricultural soils represent an irreplaceable resource. The farming operations they support provide the town with large expanses of open space. In addition, farming operations conducted on these soils are more productive and can produce food more efficiently and cost-effective than other types of soils. Unfortunately, they are also some of the most easily developed soils, and are vulnerable to permanent loss.

## WATER RESOURCES

### Drainage

Portions of three major drainage basins lie in the town of Pine Plains. Most of the western portion of town comprises the headwaters of the Wappinger Creek (See Pine Plains Watersheds Map). Twin Island Lake, Stissing Lake, Thompson Pond, and the lakes and streams west of Stissing Mountain are all part of this basin and drain south into Stanford. Most of the remainder of Pine Plains is part of the Roeliff-Jansen Kill basin, which drains north into Columbia County. This includes Bean River, Shekomeko Creek, Punch Brook, Ham Brook, and all the tributaries to these streams.

The drainage divide, or watershed boundary, between these basins runs along hilltops east west from Milan to the northern part of Stissing Mountain, north south along the western side of the three lakes, and northwest southeast from Ryan Road to Stanford, along the hills between Route 82 and Shekomeko Creek. The location of this drainage divide is an important consideration in planning central sewage facility service areas, as gravity flow is a major design consideration. East of Skunks Misery Road, a very small area drains eastward into the Ten Mile River basin.

### Surface Waters

Surface waters, including wetlands, streams, and floodplains are detailed on the Pine Plains Water Features Map. The largest stream in Pine Plains is the Jansen Kill, which runs through a small portion of town at Mount Ross. The Shekomeko Creek is the longest of the streams, originating in Stanford and Northeast and flowing north through the farmlands around Bethel, past Hammertown, through Patchins Mill, and into Columbia County.

Lakes and wetlands dominate the area of Pine Plains south and south west of the town center. It is one of the largest complexes of its kind in Dutchess County. Twin Island Lake (62 acres), Stissing Lake (78 acres), and Thompson Pond (68 acres) are interconnected with one another and with other small ponds

as well as a large network of wetlands. This complex serves vital functions as a storage area for floodwaters, a recharge area for a major aquifer, a wildlife habitat, and a recreation area. Other surface waters in Pine Plains include Miller Pond (20 acres), Lake Carvel (a 40 acre man-made lake off of Woodward Hill Road), and numerous smaller ponds scattered throughout the town.

## Floodplains

Floodplains are low-lying areas that are inundated in times of heavy rain or snowmelt. They act as shock absorbers in a drainage system by providing space for excess runoff. They can also serve as recharge areas for groundwater supplies.

One hundred year floodplains are those areas that have a one percent chance of being completely inundated at any time, with an average occurrence of once every one hundred years. These areas have been mapped throughout Dutchess County as a part of the national Flood Insurance Program. These maps show extensive flood prone areas in the lake and wetland complex southwest of the hamlet of Pine Plains. Other floodplains are located along the Shekomeko Creek from Willowvale Road to Columbia County and along the Jansen Kill. Together, the flood prone areas in Pine Plains total 785 acres, or 4 percent of the town.

## Wetlands

Wetlands play an important role in regulating and purifying groundwater supplies and surface waters. They slow floodwaters and often act as natural retention basins. Wetlands also provide valuable wildlife habitats and open space and combine with stream channels and ponds to form natural green space corridors through the town.

Freshwater wetlands occur where the water table is at or near the land surface for most of the year. Wetlands cover approximately 10 percent of Pine Plains. Under the New York State Freshwater Wetlands Act of 1975, the State Department of Environmental Conservation (DEC) maps and regulates those wetlands covering at least 12.4 acres and smaller wetlands judged to be of unusual local importance. The law requires permits for all non-agricultural activities that could change the quality of a wetland. The federal government, through the Clean Water Act and the Army Corps of Engineers, regulates all other wetlands. The NYS DEC and the Army Corps of Engineers have a joint review program for those wetlands that are 12.4 acres and larger. Many activities that may impact smaller wetlands are covered under a General Permit by the Army Corps.

State-regulated wetlands cover approximately 1,207 acres in Pine Plains (See Water Features Map). Another 326 acres contain smaller wetlands. The largest area of State-regulated wetlands is that associated with the headwaters of the Wappinger Creek, southwest of the town center. This complex is one of the most sensitive environmental areas in the town in terms of wildlife, water supply, recreation, and scenic value. It covers approximately 1,300 acres and stretches from the town border to the town center between Stissing Mountain and Route 82. Another large wetland area is found along Bean River Road and Punch Brook to the north. Smaller wetlands are scattered throughout the town, often associated with streams or lakes.

The streams, lakes, floodplains, and wetlands of Pine Plains are integral parts of the same hydrologic system. Within a drainage basin, any change in one part of the system affects all the other parts. Land use regulations for the town should reflect the interconnected nature of its water resources.

### NYSDEC Regulated Wetlands

The NYSDEC Division of Fish, Wildlife and Marine Sources has identified 18 regulated wetlands in the Town. These wetlands are classified based on function and benefits to the environment. Wetland PP-8 is a Class I wetland. This class is designated as providing the most critical of the State's wetland benefits, reduction of which is acceptable only in the most unusual circumstances. A permit application is required to alter any classified wetland and compensatory mitigation is often required for significant impact to wetlands. However, certain activities are specifically exempt from regulation and do not require a permit:

- Normal agricultural practices (except filling and clear cutting);
- Recreational activities;
- Routine maintenance of existing structures, existing lawns and similar facilities; and
- Selectively cutting trees and harvesting fuel wood.

Other activities are regulated; these are outlined in the Freshwater Wetlands Permit Regulations, 6 NYCRR Part 663.

The remaining regulated wetlands in the Town are either Class II or Class III wetlands. Regulations for these classes are also found in Part 663.

Functions and benefits of freshwater wetlands include flood and stormwater control, groundwater discharge or recharge sites, erosion control, pollution treatment and nutrient cycling, fish and wildlife habitat and public enjoyment.

Because wetlands, steep slopes and shallow soils are so abundant in Pine Plains, and because there are many smaller areas of impermeable soils and floodplains, only about one-fourth of the town is free of substantial limitations on development (See Environmental Features Map). These areas include: the town center, the Ryan/Jackson subdivision, Mr. Ross, Briarcliff Lane and much of the Briarcliff farm, Bethel as far east as Route 83, the Willowvale Road area, Hammertown, land along Route 82 (north), Pulvers Corners, and the Finkle Road area. Most of these areas have already been developed, because of the ease and lower cost of building on the land.

Although there are areas that are relatively free of natural limitations, there are also locations that have multiple constraints on development. Generally, this occurs where shallow soils cover steep slopes and where wetlands and lakes fill the intervening valleys and hollows. Some of these areas include: the vicinity of Woodward Hill Road and Stissing Mountain Road, the Stissing Mountain area, and the lands west of Route 83 north of Bethel, along and north of Johnny Cake Hollow Road, along Bean River Road, and east of Pulvers Corners.

However, it should be noted that there are certain features that present concerns on even the most suitable lands. Two of the most important of these are the presence of aquifers and prime agricultural soils. By their nature, such features are often characteristic of easily developable lands. Agricultural soils are level or gently sloping, deep and relatively permeable. Soils overlying sand and gravel and/or

limestone aquifers are generally highly permeable, and wells yield large quantities of water. Yet these are important resources that are extremely vulnerable to pollution or permanent loss. Although aquifers and prime agricultural soils are not natural limitations on development, the town should consider placing protective measures on these features so as to allow appropriate development without negative impacts.

#### RARE SPECIES AND ECOLOGICAL COMMUNITIES

According to the New York Natural Heritage Program (New York State Department of Environmental Conservation, Division of Fish, Wildlife & Marine Resources), there are several threatened, rare, endangered, and protected plants and animals in the Town of Pine Plains. The Heritage Program data is considered “sensitive” and is unable to be released, distributed or incorporated into this public document.

## Appendix 4 DEMOGRAPHY

### POPULATION GROWTH TRENDS

Table 3.1 shows the growth trends in population from 1900 to 2000. Historically, the Town of Pine Plains increased in population during the first decade of the twentieth century, while the following twenty years showed a population decline. From 1930 to 1950, the population grew slowly and then increased more rapidly during the period 1950 to 1980. During the 1980s the town grew slightly, increasing by 4 % and adding only 88 persons to the overall population. However, during the last decade the town's population grew by 12.3 %, adding 282 persons to its population base. A 12.3% rate of population increase is quite high in relation to other rural New York communities.

Table 3.1  
POPULATION BY DECADE, 1900 – 2000

Year	<u>Pine Plains</u>		<u>Dutchess County</u>	
	Number	Percent Change	Number	Percent Change
1900	1,263	–	81,670	-
1910	1,430	12.4	87,661	7.3
1920	1,252	-11.8	91,747	4.7
1930	1,209	-3.4	105,462	14.9
1940	1,301	7.6	120,542	14.3
1950	1,360	4.5	136,781	13.5
1960	1,608	18.2	176,008	28.7
1970	1,792	11.4	222,295	26.3
1980	2,199	22.7	245,055	10.2
1990	2,287	4.0	259,462	5.9
2000	2,569	12.3	280,150	7.9

Source: US Bureau of the Census

Dutchess County, when compared to Pine Plains, has seen more stable growth patterns during the twentieth century. The county's population increased each decade over the past 10 censuses with the most substantial percentage increases occurring during the 1950s and 1960s. The rate of growth slowed significantly after 1970, with a 7.9 percent increase during the 1990s during which time Pine Plains grew at a faster rate.

During most of the 20<sup>th</sup> century, Pine Plains grew at a slower rate compared to other Towns in Dutchess County. However, during the past decade Pine Plains has added population at a faster rate than most of the other towns in the county.

Table 3.2

## POPULATION CHANGE, PINE PLAINS AND NEIGHBORING TOWNS, 1930 – 2000

<b>Municipality</b>	<b>1930</b>	<b>1940</b>	<b>1950</b>	<b>1960</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
Pine Plains	1,209	1,301	1,360	1,608	1,792	2,199	2,287	2,569
Milan	622	695	806	944	1,322	1,668	1,895	2,239
Northeast	2,119	2,201	2,308	2,489	2,730	2,877	2,918	3,002
Stanford	1,269	1,386	1,473	1,614	2,479	3,319	3,495	3,544
Rhinebeck	2,968	3,264	3,746	4,612	5,658	7,062	7,558	7,762

Table 3.3

## POPULATION RATE OF CHANGE, PINE PLAINS AND NEIGHBORING TOWNS, 1930 – 2000

<b>Municipality</b>	<b>1920-1930</b>	<b>1930-1940</b>	<b>1940-1950</b>	<b>1950-1960</b>	<b>1960-1970</b>	<b>1970-1980</b>	<b>1980-1990</b>	<b>1990-2000</b>
Pine Plains	-3.4	7.6	4.5	18.2	11.4	22.7	4.0	12.3
Milan	-11.6	11.7	16.0	17.1	40.0	26.2	13.6	18.0
Northeast	10.2	3.9	4.9	7.8	9.7	5.4	1.4	2.9
Stanford	-7.2	9.2	6.3	9.6	53.6	33.9	5.3	1.4
Rhinebeck	7.1	10.0	14.8	23.1	22.7	24.8	7.0	2.7
Dutchess County	14.9	14.3	13.5	28.7	26.3	10.2	5.9	7.9

Household Size

In the time since the town's 1987 Master Plan was completed, there has been a continuation of the trend towards smaller household sizes. As table 3.4 shows, this trend is mirrored at the county level and is not unique to Pine Plains. In fact, the same trend can be seen nationwide as smaller households and family sizes are becoming the norm. In 1990, the total number of single-occupant households was 180 or about 21.4 percent of all households in the town, up from 163 in 1980. In Dutchess County, 22.1 percent of the households consisted of a single-occupant, compared to 21 percent in 1980.

Table 3.4

## AVERAGE HOUSEHOLD SIZE, 1960 – 2000

<b>Year</b>	<b>Pine Plains</b>	<b>Dutchess County</b>
1960	3.24	3.23
1970	3.18	3.21
1980	2.76	2.84
1990	2.71	2.89
2000	2.6	2.63

## Population Composition – Age Distribution

Table 3.5 show the distribution of the population among the major age groups in Pine Plains and compares this to that of Dutchess County. While there have been continual reductions in the numbers of school age children, this age group still makes up a substantial portion of the town’s overall population (23.3% in 2000). As of 2000, the “reproductive age group” (those between the ages of 20 and 44) was the largest group, accounting for 31.3 percent of the population. Since 1960 there have been steady increases in the population of 20 to 44 year olds until the 1990s when there was a reduction of 61 persons.

Pine Plains has a somewhat older population than Dutchess County overall. In 2000, the Town’s median age was 39.9, compared to 36.7 for the county. In 2000, those persons over 45 years of age in Pine Plains accounted for 15 percent of the town’s population, up from 14.1 percent in 1990. The increasing number of retirement and elderly persons will have planning implications in terms of housing and the provision of community services and health care. In addition, schools will likely not see substantial increases in the numbers of students as younger residents make up less of a portion of the town’s overall population.

Table 3.5  
POPULATION COMPOSITION, TOWN OF PINE PLAINS, 1960 – 1990

Age Group	1960		1970	
	Number	Percent	Number	Percent
Pre-school (0 - 4)	155	9.6	169	6.3
School Age (5 - 19)	419	26.1	500	22.8
Reproductive Age (20 - 44)	441	27.4	513	33.5
Middle Age (45 - 64)	354	22.0	363	19.9
Retirement Age (65 - 74)	143	8.9	153	10.7
Elderly (75+)	96	6.0	94	6.8
Total	1,608	100.0	1,792	100.0
Age Group	1980		1990	
	Number	Percent	Number	Percent
Pre-school (0 - 4)	139	6.3	157	6.9
School Age (5 - 19)	502	22.8	506	22.1
Reproductive Age (20 - 44)	736	33.5	865	37.8
Middle Age (45 - 64)	428	19.9	436	19.0
Retirement Age (65 - 74)	235	10.7	172	7.5
Elderly (75+)	149	6.8	151	6.6
Total	2,197	100.00	2,287	100.0
Age Group	2000		2000	Dutchess Co.
	Number	Percent	Number	Percent
Pre-school (0 - 4)	124	4.6	17,463	6.2
School Age (5 - 19)	599	23.3	61,867	22.1
Reproductive Age (20 - 44)	804	31.3	102,132	36.4
Middle Age (45 - 64)	658	25.6	64,998	23.2
Retirement Age (65 - 74)	213	8.3	18,327	6.5
Elderly (75+)	171	6.7	15,363	12.9

Total	2,569		280,150	
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## FACTORS AFFECTING POPULATION CHANGE

### Natural Change and Migration

Population change in a community is the result of two factors, migration and natural change. Migration is the movement of people into or out of a community. Natural change is the difference between births and deaths. During the period 1930 – 1939, deaths significantly out-numbered births, but the level of in-migration was sufficient to increase the population. During 1940 – 1949 the opposite occurred, with more out-migration than in-migration and more births than deaths.

In the 1950s births and in-migration were both very high, resulting in an increase in population of 18.2 percent. In-migration declined in the 1960s, causing a drop in the growth rate, but was nearly six times higher in the 1970s, bringing the growth rate to an unprecedented high. During the past sixty years, natural increase has remained relatively steady while net migration has fluctuated widely. More recently, natural change accounted for an increase of 91 persons in the 1990s, while net migration resulted in 323 additional persons

### Residential Mobility

Table 3.6 shows statistics regarding residential mobility. Pine Plains, while still relatively stable, is slightly less so than in previous decades. In 1990, 60% of the town's population lived in the same house for at least five years (down from 71.5 percent in 1980) and in 2000, 66% lived in the same house for at least five years. Meanwhile, according to the 1990 census, 11.3 percent of the town's population came to Pine Plains from outside Dutchess County, compared to 22.2 percent for the county overall. IN 2000, 7.9% of the population came to Pine Plains from outside the County. These figures demonstrate that newcomers to the county are less likely to settle in Pine Plains than in other areas of the county. Those who moved to a residence in Pine Plains from within Dutchess County between 1995 and 2000 was 25.5 percent, up substantially from 17.6 percent reported in the 1980 US Census. This indicates that Pine Plains is attracting more people from within the county.

Table 3.6  
RESIDENTIAL MOBILITY, TOWN OF PINE PLAINS AND DUTCHESS COUNTY, 1975 – 1980  
(residents age 5 and over)

Place of Residence in 1975  
as compared to 1980

	Pine Plains		Dutchess County	
	Number	Percent	Number	Percent
Same house	1,454	71.5	135,383	58.9
Different house/ same county	359	17.6	49,132	21.4
Different county/ same state	140	6.9	29,685	12.9
Different state	74	3.6	13,075	5.7
Different country	8	.4	2,412	1.1
Total	2,035	100.0	229,687	100

Place of Residence in 1985  
as compared to 1990

	Pine Plains		Dutchess County	
	Number	Percent	Number	Percent
Same house	1,288	60.5	137,822	57.3
Different house/ same county	601	28.2	49,203	20.5
Different county/ same state	198	9.3	33,389	13.9
Different state	43	2.0	17,181	7.1
Different country	0		2,877	1.2
Total	2,130	100.0	240,472	100.0

Place of Residence in 1995  
as compared to 2000

	Pine Plains		Dutchess County	
	Number	Percent	Number	Percent
Same house	1,611	66.0	156,409	59.5
Different house/ same county	623	25.5	54,322	20.7
Different county/ same state	150	6.1	32,202	12.2
Different state	43	1.8	15,121	5.7
Different country	13	0.5	4,983	1.9
Total	2440	100.0	263,037	100.0

## POPULATION PROJECTIONS

Projecting population growth is a useful step in planning for a community's needs. In this section, information concerning historical and current trends is analyzed for clues to future changes in population. However, population projections should be interpreted with caution, as there are many unforeseen circumstances that may make these projections unreliable. The figures are to be used merely as guidelines because factors such as migration, new economic circumstances, and technology may alter anticipated patterns of growth.

### Previous Projections

The 1987 Master Plan presented three population projections through 2010, using alternate methods (Table 3.7). The most accurate projection for 2000 came from the New York State Department of Environmental Conservation, which estimated a population of 2,450 persons while the actual figure was 2,569 (a difference of only 119 persons). The other projections were much less conservative and showed much higher population gains through 2000 and 2010. The highest projection presented a scenario where the Town would continue its growth rate of the 1970s of 22.7 percent. However, during the 1980s and 1990s the Town grew at 4 percent and 12.3 percent respectively, significantly slower than the 1970s. Consequently, using such a high rate of growth dramatically overestimated the population figures and it seems unlikely that the town will see growth over 20% at any time in the near future. The projection provided by the Dutchess County MPO, using growth rates of 16.9 percent and 14.2 percent

during the 1980s and 1990s respectively, also significantly overestimated the population increase in Pine Plains through 2000.

Another projection, from the 1969 Master Plan for Pine Plains, estimated that the Town’s population in 1975 and 1980 would be 2,100 and 2,250 respectively. However, both of these estimates exceeded the actual populations. In fact, the population in 1990 was only 2,287, just slightly ahead of the figure estimated for ten years earlier.

Table 3.7  
POPULATION PROJECTIONS, TOWN OF PINE PLAINS, 1990 – 2010 (from 1987 Comprehensive Plan)

<b>Source/Method</b>	<b>1990</b>	<b>2000</b>	<b>2010</b>
New York State Department of Environmental Conservation Projection	2,300	2,450	2,550
Constant percent of county base (0.9%) Dutchess County Metropolitan Planning Organization	2,570	2,934	3,298
Continuation of 1970 - 1980 growth rate (22.7% per decade)	2,698	3,310	4,061

Source: New York State Department of Environmental Conservation and Dutchess County Department of Planning

Projections through 2020

Data in Table 3.8 show population projections from Dutchess County based on and continuing those made in the 1969 Comprehensive Plan. The table projects that the town’s population will grow slowly through 2020 to a population of 2,793, an increase of only 224 persons from 2000.

Table 3.8  
POPULATION PROJECTIONS, TOWN OF PINE PLAINS, 1965 – 2020\*

	<b>Projected Population</b>	<b>Actual Population</b>
1965	1749	--
1975	2100	1792
1980	2250	2199
1985	2450	--
1990	--	2287
2000	--	2569
2005	2419	
2010	2451	
2015	2602	
2020	2793	

\*Updated projections made by Dutchess County

Estimated share of county growth to 2020

Pine Plains’ share of the county’s population growth is expected to be 0.78 percent of the total with 16 people added per year between 1995 and 2020. This rate of growth is much lower than other adjacent towns in Dutchess County.

Share of county growth, 1995 to 2020

Pine Plains	0.78%
Milan	0.96%
Northeast	2.43%
Rhinebeck	3.69%
Stanford	0.97%

Source: Dutchess County Planning and Development Department and Poughkeepsie-Dutchess County Transportation Council

Population Projection Using the Migration Pattern Method

	<b>Net Change</b>	<b>Natural Change</b>	<b>Net Migration</b>
1970-1979	407	79	328 (81% migration)
1990-1999	282	91	191 (68% migration)

Using the migration trends from 1990 – 1999 the population is projected to be:

2010 2885 people 215 migration and 101 births

2020 3240 people 241 migration and 114 births

Thus in 20 years, there would be 456 people migrating in. At current number of people per dwelling of 2.55 people per household, this would translate into the need for 176 new homes.

Comparison to:

1960-1969	30.4% migration
1950-1959	53% migration
1940-1949	59% migration
1930-1939	143% migration

# Appendix 5            ECONOMY

## HISTORY

Agriculture provided the base of Dutchess County's early development. As wheat farmers settled in the area, the agricultural economy grew and prospered. However, the opening of the Erie Canal in 1825 introduced competition from upstate and beyond, and many Dutchess farmers were forced to switch production to dairy. The region's economy flourished once again as the coming of the railroads made the New York City market accessible to Dutchess County's dairy products. At the peak, eighteen daily trains passed through four Pine Plains stations, many of them transporting products from the town's dairy farms.

Non-farm industrial development paralleled the growth of the dairy industry. Textile mills were located along creeks and streams in most settlements in the county. In the early 19<sup>th</sup> century, Pine Plains was the location of several industries: a tannery, a scythe works, and a mill. But after the civil war, textile production moved to the southern states, and factories in Dutchess shut down, causing migration out of the county. Then, during the Second World War, manufacturing industries developed again in southwestern Dutchess. Although the railroads were discontinued, improved highway transportation to all parts of the county spread out the population as well as the economic benefits. In particular, the Taconic Parkway brought commuters and seasonal residents to Pine Plains.

Manufacturing activities have not expanded into northern Dutchess, and agriculture has remained a major economic activity there. However, the nature of agricultural production has changed. As the means of production are mechanized, smaller farmers have been unable to compete effectively, and many have chosen to sell their land to larger farmers or to developers. The remaining farms have been consolidated.

Today, Pine Plains is a rural residential community. The agricultural base has changed and there are fewer commercial dairies and family farms. However the rural character remains. Horse farms have become more prevalent in the town and Pine Plains is attracting new residents, willing to commute long distances to work, those able to work in Pine Plains due to the Internet, and tourists and seasonal residents. Pine Plains may anticipate a number of changes brought on by these trends.

## EMPLOYMENT

Pine Plains has continually had one of the lowest unemployment rates in New York State. In 1980, there were 43 unemployed persons in the Town (an unemployment rate of 4.5%). According to the US Census, the town's unemployment rate was 3.7 percent in 1990, lower than the county's figure of 4.2%. It was about the same in 2000 (4.1%). The low unemployment rate in both the town and county (3.6% in 2000) indicate a strong employment base in the area.

Table 4.1 1980 - 2000 Employment Rates

<b>EMPLOYMENT RATES</b>					
<b>Year</b>	<b>Total Labor Force</b>		<b>Employed</b>		<b>Unemployed</b>
<b>1980</b>	964		921		43 (4.5%)
<b>1990</b>	1,187		1,143		44 (3.7%)
<b>2000</b>	1,307		1,248		53 (4.1%)

\*Persons 16 and over who are employed or seeking employment

When compared to 1980, a greater number of residents were participating in the labor force. In 1980, only 57.5 percent of the adult population (those persons 16 and over) was considered to be in the labor force. By 1990, almost 68 percent of the adult population was in the labor force, higher than several other towns in the area and the county average overall. In 2000, that figure was about the same (64.8%). The increase between 1980 and 1990 was most likely a result of the large “reproductive age” (20 – 44 years of age) sector, representing 57% of the labor force. There have been continued increases in the total labor force, as well as those employed. The unemployment rate has been relatively stable and low for the past 30 years.

In previous decades, the town’s participation in the labor force was significantly lower than the county average and most other towns in the area. However, by 1990 Pine Plains’ workforce had expanded to such a degree that the proportion had surpassed the county average as well as many other local municipalities.

## OCCUPATION

### Current Distribution

There have been significant changes in the occupation patterns in Pine Plains since 1980. Table 4.2 shows employment by occupation in 1980 - 1990. The largest changes occurred in this decade. Comparison of the current employment structure with earlier years is difficult because of changes in methods of gathering and categorizing the data and the change in the age cut-off for inclusion in the labor force. Through 1980, the percentage of workers holding support positions (including technical, sales, and clerical) increased significantly in Pine Plains. During the 1980s this trends seems to have leveled off as both the town and county saw slight percentage reductions in this category. In 1990, technical, sales, and administrative support positions accounted for 24.9 percent of all employment in Pine Plains, down from 26.7 percent in 1980, and 27.6 percent in Dutchess County overall, down from 30.0 percent in 1980.

While the number of labor and equipment operation positions has been on the decline for decades in Dutchess County, Pine Plains had been generally shielded from these loses. However, by 1990, these occupations accounted for only 13.5 percent of the town’s employment base, down from 18.8 percent in 1980. Conversely, Pine Plains had not seen gains in management/professional positions as had occurred

in the county since 1960. However, by 1990 this occupational category accounted for over 23 percent of the town's employment base, up from 18.5 percent in 1980 and closer to the county's 1990 average of 28.7 percent.

In 1990, after a loss of three farm-related jobs in Pine Plains, farming accounted for only 5.2% of the town's employment (down from 6.8 percent). (The technical category for this occupation is farming, forestry and fishing.) In Dutchess County overall, approximately 1.3 percent of the employment base consists of farm-related occupations.

Analysis of these data characterizes Pine Plains as changing from agriculture and labor-oriented workforce in the 1950s and 1960s to a more service-oriented workforce in 1990. It has become more similar to the rest of the county, which underwent the same transition earlier and more rapidly.

In 2000, management, professional, and related occupations accounted for about 31% of occupations in Pine Plains. This was followed by sales and office occupations (24.4%) and service occupations (16.4%). Farming, forestry and fishing occupations had 2.1% of the employed population in those occupations (down from 5.3% in 1990). Occupation patterns between Pine Plains and Dutchess County are similar, except for a higher percentage of people employed in farming in Pine Plains than elsewhere.

Table 4.2  
EMPLOYMENT BY OCCUPATION, PERCENT, 1980 and 1990

<b>1980</b>	<b>Pine Plains</b>						<b>Dutchess</b>
<b>Occupation</b>	<b>#</b>	<b>%</b>	<b>Milan</b>	<b>Northeast</b>	<b>Stanford</b>	<b>Rhinebeck</b>	<b>County</b>
Technical, Sales,							
Admin. Support	246	26.7	25.0%	20.1%	24.8%	24.9%	30.0%
Management,							
Professional	170	18.5	23.9	17.6	28.1		31.8
Service (inc.							
Fire & police)	162	17.6	17.4	28.5	12.0	14.7	15.5
Labor, Equipment							
Operation	173	18.8	12.9	15.2	13.2	13.1	13.0
Crafts, Repair	107	11.6	15.1	11.4	13.8	11.0	11.5
Farming,							
Forestry &	63	6.8	5.7	7.2	8.1	4.5	1.7
Fishing							
<b>1990</b>							
	<b>Pine Plains</b>		<b>Milan</b>	<b>Northeast</b>	<b>Stanford</b>	<b>Rhinebeck</b>	<b>Dutchess</b>
<b>Occupation</b>	<b>#</b>	<b>%</b>					<b>County</b>
Technical, Sales,	285	24.9	27.8	23.4	25.5	28.6	27.6
Admin. Support							
Management,	264	23.1	31.2	24.4	33.9	42.2	28.7
Professional							
Service (inc.	216	18.9	14.4	20.0	14.8	10.4	24.4
Fire & police)							
Labor, Equipment	154	13.5	7.9	13.6	8.1	7.5	8.7
Operation							
Crafts, Repair	164	14.3	15.7	15.3	11.2	9.4	9.3
Farming,	60	5.2	2.9	3.2	6.5	1.8	1.3
Forestry &							
Fishing							

## INDUSTRY

Table 4.3 Pine Plains Employment Status by Industry, 1990 - 2000

	1990 (#)	1990 (%)	2000 (#)	2000 (%)
Business and Professional Services	487	40.9	102	8.2
Education	NA	NA	365	29.2
Manufacturing	142	11.9	115	9.2
Wholesale and Retail Trade	180	15.1	163	13.0
Transportation, Communication, Utilities	51	4.3	50	4.0
Public Administration	48	4.0	9	0.7
Construction	118	9.9	146	11.7
Finance and Real Estate	51	4.9	53	4.2
Agriculture, Forestry, Fishing, Mining	67	5.6	59	4.7
Personal Services	31	2.5	66	5.3
Entertainment/ Recreation	16	1.3	88	7.1

Although it is not possible to completely compare data from 1990 and 2000 because of differences in Census data, Table 4.3 does show the breakdown of employment by industry in Pine Plains. It indicates that in 1990, over 40 percent of the town's labor force is involved in business and professional services, 16.2 percent in wholesale and retail trade, 11.9 percent in manufacturing and 9.9 percent in construction. The remainder of the labor force is distributed evenly through the other categories. The main difference between Pine Plains and the county figures is that the town has a larger portion of its economy devoted to agriculture. By 2000, the industry that employed the largest number of people in Pine Plains was education (29.2% of those employed). Retail trade and construction were other major employment industries.

Between 1960 and 1980, employment in business and professional services industries increased significantly in both the town and county. During the 1980s, Pine Plains saw continued increases in this industry while Dutchess County saw a slight decline. Between 1980 and 1990, both the town and the county saw percentage reductions in manufacturing, public administration, and agriculture.

This employment data show that business and professional services, wholesale and retail trade and to a lesser degree, construction, are growing while agriculture and manufacturing industries have declined. Patterns in 2000 are very similar between Pine Plains and the County.

## COMMUTING PATTERNS

Table 4.4 shows that the private car is still the primary means of transportation for workers living in Pine Plains. In 1990, more workers were driving alone, 73.7 percent, compared to 64.8 percent in 1980, and fewer are using public transportation, walking or working at home. These trends mirror transportation to work figures for Dutchess County overall. Public transportation usage has increased

slightly between 1990 and 2000, but at the same time, those who drive to work alone increased from 74% of the population to 85%.

Table 4.4

**TRANSPORTATION TO WORK, PERCENT, 1990**

<b>Method of Transportation</b>	<b>Pine Plains</b>	<b>Dutchess County</b>
Drive, alone	73.7	78.0
Drive, carpool	14.0	11.3
Public transportation	1.9	3.2
Walk	6.0	4.5
Work at home	3.3	2.4
Other	1.2	.6

**TRANSPORTATION TO WORK, PERCENT, 2000**

<b>Method of Transportation</b>	<b>Pine Plains</b>	<b>Dutchess County</b>
Drive, alone	70.7	78.5
Drive, carpool	14.5	9.6
Public transportation	3.3	4.2
Walk	6.5	3.9
Work at home	4.3	3.2
Other	.65	0.7

**INCOME**

According to income figures, as shown in Table 4.5, incomes in Pine Plains were lower than in the rest of the county, including neighboring rural towns. The lower income figures relate to the agriculture, labor, and service-oriented nature of the town’s employment structure. However, 1990 per capita incomes in Pine Plains increased 125 percent from 1980, keeping pace with the county increases (130%). Meanwhile, the town’s per capita income outpaced both Rhinebeck and Northeast and surpassed the later in both per capita and family mean incomes. By 2000, the per capita income in Pine Plains rose to \$24,824, and the median family income rose to \$46,875.00. Per Capita Incomes are on par with county levels, but the family median income is substantially lower in Pine Plains than the county as a whole.

Table 4.5

**INCOME INDICATORS, 1980 - 2000**

<b>Year</b>	<b>Per Capita</b>	<b>Family Median</b>
1980	\$6,229	\$15,951
1990	\$14,018	\$38,633
2000	\$24,824 (\$23,940 for Dutchess Co.)	\$46,875 (\$63,254 for Dutchess Co.)

Table 4.6 examines family incomes. In 1980, income distribution was weighted towards the lower income levels. Only two percent of the families earned more than \$50,000, compared to nearly six percent for the county as a whole. The largest income group (22.6% as shown in the Table) earned \$10,000 to \$14,999.

Pine Plains experienced great increases in family incomes during the 1980s. However, when compared to Dutchess County, the figures are less impressive. In 1990, only 26.8% of the town’s families earned over \$50,000 compared to 49.1% for the county overall. Meanwhile, 36 percent of families in Pine Plains earned less than \$25,000, compared to 17.2% for Dutchess County. Overall, the income levels were fairly evenly distributed through each of the income classes shown.

In 2000, the trend is toward higher incomes. While there is still a “bubble” of incomes between \$15,000 and \$19,999, there are significantly more people earning higher incomes in the range of \$60,000 and \$100,000. In fact, there were more families in this income bracket than the other income brackets. This closely follows trends seen elsewhere in Dutchess County.

Table 4.6  
FAMILY INCOME DISTRIBUTION, PERCENT, 1980

<b>Family Income</b>	<b>Pine Plains</b>	<b>Dutchess County</b>
Under \$5,000	5.6	4.5
\$5,000 - \$7,499	5.4	4.3
\$7,500 - \$9,999	12.1	5.0
\$10,000 - \$14,999	22.5	12.1
\$15,000 - \$19,999	19.4	13.8
\$20,000 - \$24,999	13.2	15.9
\$25,000 - \$34,999	12.9	23.5
\$35,000 - \$49,999	6.9	15.1
\$50,000 or more	2.0	5.8

FAMILY INCOME DISTRIBUTION, PERCENT, 1990

<b>Family Income</b>	<b>Pine Plains</b>	<b>Dutchess County</b>
Under \$5,000	1.9	784 (1.2)
\$5,000 - \$9,999	7.6	1,542 (2.4)
\$10,000 - 12,499	5.4	1,249 (1.9)
\$12,500 - \$14,999	4.0	1,156 (1.8)
\$15,000 - \$17,499	3.0	1,357 (2.1)
\$17,500 - 19,999	4.0	1,517 (2.3)

<b>Family Income</b>	<b>Pine Plains</b>	<b>Dutchess County</b>
\$20,000 - 22,499	5.8	1,797 (2.8)
\$22,500 - 24,999	4.3	1,772 (2.7)
\$25,000 - 27,499	5.2	2,084 (3.2)
\$27,500 - \$29,999	3.7	1,780 (2.7)
\$30,000 - \$32,499	4.0	2,433 (3.7)
\$32,500 - \$34,999	3.3	1,735 (2.7)
\$35,000 - \$37,499	3.3	2,619 (4.0)
\$37,500 - \$39,999	4.6	2,076 (3.2)
\$40,000 - \$42,499	3.4	2,748 (4.2)
\$42,500 - \$44,999	4.6	2,100 (3.2)
\$45,000 - \$47,499	2.9	2,435 (3.7)
\$47,500 - \$49,999	2.5	2,057 (3.1)
\$50,000 - \$54,999	8.0	5,134 (7.9)
\$55,000 - \$59,999	4.2	4,130 (6.3)
\$60,000 - \$74,999	7.1	9,803 (15)
\$75,000 - \$99,999	4.9	8,134 (12.4)
\$100,000 - \$124,999	1.4	2,716 (4.2)
\$125,000 - \$149,999	0.36	1,042 (1.6)
\$150,000 or more	0.95	1,138 (1.7)

\*841 total family incomes for Pine Plains

\*65,338 total family incomes for Dutchess County

Family Income in 2000

<b>Family Income</b>	<b>Pine Plains</b>	<b>Dutchess County</b>
Less than \$10,000	.14	3.1
\$10,000 – \$14,999	3.4	2.5
\$15,000 - \$19,999	8.1	6.4 (15 to 24)
\$20,000 - \$24,999	3.5	8.6 (25 – 34)
\$25,000 - \$29,999	5.9	14.7 (35-49)
\$30,000 - \$34,999	9.1	24.9 (50-74)
\$35,000 - \$39,999	4.4	17.7 (75-99)
\$40,000 – \$44,999	9.0	15.2 (100-149)
\$45,000 - \$49,999	9.1	4.1 (150-199)
\$50,000 - \$59,999	6.3	2.6 (200+)
\$60,000 - \$74,999	10.9	
\$75,000 - \$99,999	13.3	
\$100,000 - \$124,999	5.6	
\$125,000 - \$149,999	2.2	
\$150,000 - \$199,999	3.8	
\$200,000 or more	4.3	

# Appendix 6 HOUSING

## HOUSING SUPPLY

Between 1960 and 2000, the number of housing units in Pine Plains increased by 488, or 72.5%. The largest increases in housing units occurred during the 1960s and 1970s. More recently, growth in housing has been at or below 10% (6.4% during the 1980s and 10.6% during the 1990s). In comparison, between 1960 and 2000, Dutchess County’s housing stock grew by almost 98%, an increase of 52,511 units while Pine Plains, added housing units at a slightly slower rate (72.5%). However, during the last decade, the Pine Plains saw a 10.6% increase in housing units compared to 8.7% in the entire county.

Table 5.1  
HOUSING UNITS, 1960 – 2000

	1960		1970		1980		1990		2000	
	# Units	% Change								
Pine Plains	673	38.5	725	7.7	987	36.1	1050	6.4	1161	10.6
Milan	635	25.0	714	12.4	837	17.2	974	16.4	1090	11.9
Northeast	912	11.2	1018	11.6	1159	13.9	1367	17.9	1366	0
Stanford	764	18.8	1058	38.5	1314	24.2	1564	19.0	1712	9.5
Rhinebeck	1787	35.7	2050	14.7	2581	25.9	3047	18.1	3255	6.8
Dutchess Co.	53592	39.8	69126	29.0	86852	25.6	97632	12.4	106103	8.7

## HOUSING CHARACTERISTICS

### Types of Housing

Table 5.2 shows the distribution of housing by type of structure in 1990 and 1980. The dominant housing type in the town is the single family home, accounting for over 72% overall in 1990. Between 1980 and 1990, 15 mobile homes were added to the housing supply, accounting for 8.8% of the total in 1990. According to this data, in 1990 Pine Plains had only 14.1% of its housing in multifamily units, compared to 28.3% for the county overall. Furthermore, mobile homes accounted for 8.8% of the housing in Pine Plains (up from 7.7% in 1980), much higher than the 4.4% for Dutchess County. As in 1980, the uniform nature of the housing supply may indicate a lack of opportunities for smaller families or single-person households who cannot afford or do not desire large single-family homes, especially those requiring substantial upkeep. Mobile homes seem to be providing alternatives to for those who cannot afford or do not desire standard single-family detached housing.

## Type of Occupancy

Table 5.3 shows the distribution of year-round housing by type of occupancy from 1980 to 2000. According to the 2000 census, almost 60% of the Town's housing units were owner-occupied, slightly lower than the 64.7% for Dutchess County overall. Approximately 25 percent were rented while the remaining 14.9 percent were vacant. In 2000, ninety-five of the vacant units in Pine Plains were actually seasonal residences.

Table 5.2 Types of Housing

			<b>1980</b>			
	<b># Housing Units</b>	<b>% Multi-family Units</b>	<b>% Single Family Units</b>	<b>% Detached</b>	<b>% Attached</b>	<b>% Mobile Home</b>
Pine Plains	973	14.3	85.7	44.4	0.4	7.9
Milan	654	9.2	90.8	86.5	1.5	2.8
Northeast	1129	17.4	82.6	75.8	0.1	6.7
Stanford	1253	16.6	83.4	79.4	2.5	1.5
Rhinebeck	2575	25.2	74.8	70.0	1.4	3.4
Dutchess Co.	85445	31.9	68.1	62.6	1.5	4.0
			<b>1990</b>			
Pine Plains	1050	14.1	72.1	71.6	.004	8.8
Milan	974	7.1	88.8	88.0	.008	3.9
Northeast	1367	15.2	71.8	70.9	.009	9.2
Stanford	1564	9.7	82.8	82.6	.002	3.5
Rhinebeck	3047	21.3	35.7	5.7	5.7	3.2
Dutchess Co.	97632	28.3	68.0	62.1	3.5	4.7
			<b>2000</b>			
Pine Plains	1,161	12.2	80.5	79.2	1.3	7.3
Milan	1,090	8.8	86.9	86.9	0	4.4
Northeast	1,366	12.5	79.2	78.4	.8	8.4
Stanford	1,712	12.4	85.5	83.1	2.4	2.1
Rhinebeck	3,255	21.4	74.7	69.2	5.5	4.0
Dutchess Co.	106,103	26.8	69.2	64.8	4.4	4.1

Table 5.3  
Type of Occupancy, 1990 and 2000

1990	Owner		Rented		Vacant	
	Number	Percent	Number	Percent	Number	Percent
Pine Plains	607	57.8	227	21.6	216	20.6
Milan	558	57.3	163	16.7	253	30.0
Northeast	757	55.3	367	26.8	243	17.8
Stanford	943	60.3	319	20.4	302	19.3
Rhinebeck	1916	62.9	883	30.0	248	8.2
Dutchess	61899	63.4	27668	28.3	8065	8.3
<b>2000</b>						
Pine Plains	694	59.7	294	25.3	173	14.9
Milan	697	63.9	185	17.0	208	19.1
Northeast	784	57.4	362	26.5	220	16.1
Stanford	1006	58.8	392	22.9	314	18.3
Rhinebeck	2018	62	983	30.2	254	7.8
Dutchess County	68,636	64.7	30,900	29.1	6,567	6.2

### Household Characteristics

Household characteristics point out a trend towards smaller families, with many people living alone. A single person occupied about 21.4 percent of the households in Pine Plains in 1990 (compared to 20 percent in 1980). The average number of persons per household in 2000 was 2.6, down from 2.76 in 1980. These demographic factors will influence the type of demand for housing. If the need for smaller, more affordable apartments is not met, many of these people may have to look elsewhere, perhaps outside of Dutchess County, for a place to live.

### HOUSING COSTS

Table 5.4 illustrates the rise in both rental costs and values of owner-occupied dwellings. In Pine Plains, gross rent increased 45% between 1990 and 2000. Rates of increase were comparable between Pine Plains and other Dutchess County towns. Housing values remained steady over the past decade: values of owner-occupied dwellings actually decreased slightly in the past decade in Pine Plains. In other locations, values rose slightly to 9% in Rhinebeck.

Table 5.4

## HOUSING COSTS, 1980 - 2000

	Monthly Rental Units Gross Rent, in dollars			Owner-Occupied Units Value, in dollars		
	1980	1990	2000	1980	1990	2000
	Mean	Median	Median	Mean	Median	Median
Pine Plains	188	439	635	44,830	118,300	116,000
Milan	231	481	675	44,531	134,500	138,000
Northeast	206	460	677	42,202	124,400	127,900
Stanford	216	491	691	53,676	154,400	164,900
Rhinebeck	240	542	714	52,783	155,100	168,300

\* 1990 and 2000 rent & value figures are given as median

## BUILDING PERMITS

According to Table 5.5, there has been steady, but light residential development in Pine Plains during the past decade. Between 1990 and 2000, the Town approved an average of thirty-one building permits per year, six for new dwellings, two for commercial structures, and seven for additions to residential structures. Between 1990 and 1998, only five building permits were issued for mobile homes. More recently, there were increases in the number of permits for mobile homes; the Town issued five permits in 1999, two in 2000 and two more in 2001.

There was a fair degree of new home building between 1990 and 1992 when 11, 8 and 10 permits were issued each year, respectively. Between 1993 and 2000, the number of permits decreased to about five or six a year. However, the number of permits issued in 2001 doubled to 12 new dwellings. 2002 saw the greatest level of new home building in the town when 21 permits were issued. This represents a 75% increase in one year.

Table 5.5 TOWN OF PINE PLAINS BUILDING PERMITS, 1990 – 2001

Type	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
New dwelling	11	8	10	5	5	5	4	1	6	6	5	12	21
New commercial	1	2	3	3	4	1	1	0	0	2	4	1	1
Addition to residential	11	10	8	9	10	8	4	6	3	5	4	7	2
Addition to commercial	4	0	1	1	3	0	1	2	0	0	0	1	3
Garage (residential)	7	5	3	4	6	1	5	4	6	4	6	2	2
Residential renovations	22	8	2	0	3	3	0	0	1	0	1	1	4
Mobile homes	0	2	0	1	2	0	0	0	0	5	2	2	0
Farm storage	4	0	1	0	0	2	1	1	0	2	0	2	0
Shed or (residential) storage building	0	0	5	2	2	1	0	1	3	0	4	1	2
Deck	2	4	0	1	5	1	0	2	1	2	3	0	1
In-ground pool	0	3	2	1	0	0	0	2	0	1	2	0	6
Boat house	0	0	0	0	0	0	0	0	0	1	0	0	0
Totals	62	42	35	27	40	22	16	19	20	28	31	29	42

### **Affordable Housing Analysis**

There are several ways to determine if housing is generally affordable in a community. One method is to determine the “rental index”. This index shows the maximum gross rent a given household can afford. Affordable rental housing is generally considered to be no more than 30% of a household’s monthly income. With a Median Household Income of \$43,125, the average household could afford \$1078.00 per month in rent. With a median gross rent of \$635.00, the average household in Pine Plains would find rentals to be affordable.

### Affordability Index

Another method to determine affordability is to look at the ratio between the median value of a single-family house and median household income. Nationally, a ratio of 2 or less is considered to be affordable. The affordability ratio for Pine Plains equals \$116,000 (median value of homes) divided by \$43,125 (median household income) or 2.69. This figure is above the desired ratio of two and indicates that some families would spend more than twice their annual income on a home.

### Purchase Price Multiplier

Finally, the purchase price multiplier also gives an indication of affordability. This looks at the maximum mortgage approval amount likely to be given to potential homebuyers. This is usually about 2.25 times annual income. The calculation below shows this multiplier plus a 10% down payment. This is the amount of money that would be able to be afforded for a mortgage by the median household.

$$2.25 \times \$43,125 = \$97,031.25$$
$$\$97,031.25 + 10\% \text{ down} = \$106,734.25$$

Thus, the median household would be able to afford a \$106,734 dollar house. However, the median value of a house in the area is \$115,000. This would indicate that some households in Pine Plains would have difficulty affording the average house.

There are 39 households in Pine Plains that earn less than \$35,000 (22.6%). These are the households that would have the most difficulty purchasing or affording a home in Pine Plains. It is unlikely that families earning this income would be able to afford to own a home in Pine Plains. There are 21.9 percent of households that earn between \$35,000 and \$49,999 (about where the median income is). Some of these families would also have difficulty affording a home. About 39% of households in Town would not have difficulty affording the average home in Pine Plains.

## Appendix 7 COMMUNITY FACILITIES

### FIRE AND RESCUE OPERATIONS

The Pine Plains Fire District is served by a fire station located at the intersection of Route 82 and Lake Road. The fire district is a member of the Dutchess County Mutual Aid Program whereby, in this case, the towns of Pine Plains and Northeast and the Village of Millerton assist one another. The district also cooperates with fire companies in the towns of Ancram and Gallatin in Columbia County.

The station houses three fire engines, one tanker, a brush truck, and two ambulances. A rescue truck is also housed which is equipped with jaws-of-life, compressor, generator, air masks and quartz lights. The oldest vehicle is the brush truck. There are forty active fire fighters and rescue members in the district and many more official volunteers.

### MEDICAL CARE

There are two Medical Offices in Pine Plains. Pine Plains Family Practice is located on South Main Street and is staffed by one Physician's Assistant, one FNP (nurse practitioner), and one MD. This practice is affiliated with Northern Dutchess Hospital in Rhinebeck, NY. Hudson River Community Health is located on Pilch Drive and is staffed by one MD. This practice is affiliated with Sharon Hospital in Sharon, CT.

Pine Plains Dental Group is on East Church Street. It is staffed by one dentist and opened five days a week and every other Saturday. Pine Plains Pharmacy is on the corner of West Church Street and North Main Street. It is open seven days a week and has three pharmacists.

### POLICE PROTECTION

The Town of Pine Plains provides police protection in the form of a part time police force, with its office in the Town Hall. Six officers, including the Officer in Charge, have an operating budget of \$58,000 and two patrol cars.

The Dutchess County Sheriff's Office keeps one patrol car at the Town Highway Garage, and provides two patrol shifts of coverage per day from this location. Coverage includes but is not limited to the Town of Pine Plains.

The New York State Police operate a small satellite office in the Town Hall, and provide two patrol shifts per day. As with the Sheriff's Deputies, coverage includes but is not limited to the Town of Pine Plains.

### TOWN HALL AND OFFICES

The Town purchased the former Farm Credit branch office and its five acres of land on route 199 east of the hamlet of Pine Plains. This is the first Town-owned office building. It houses offices of the Supervisor, Town Clerk, Planning Board, Building Inspector, Tax Collector and Assessors, as well as a meeting room on the main floor. The Justice Court, State Police, and Town Police are located in the basement.

## HIGHWAY DEPARTMENT

The Town purchased five acres of land adjoining a small parcel it already owned at the west end of the hamlet of Pine Plains on route 199 for use by its Highway Department. An 80' x 112' fully enclosed and heated building provides office space, a repair facility and machine storage. It also houses the Town's police cars while no duty shift is running. A 60' x 80' building specifically designed and constructed for sand and salt storage provides environmentally sound storage for road treatments. Sufficient area is owned at this site to provide ample storage for all materials and supplies the department requires. The department's rolling stock includes three six-wheel dump trucks with combination dump bodies and plows, one six-wheel truck plow, dump body and slide in sander, one three-quarter ton pickup with plow, a compact pickup, wheel loader, two farm-type tractors, one with boom mower, a water truck, roller, chipper and other miscellaneous equipment. The current highway budget runs in excess of \$400,000.

## POST OFFICE

The post office is located on South Main Street. The new structure is more appropriate for mail operations than the previous location due to its ample off-street parking, handicap access, and loading platforms and the site is easily accessible by foot or auto. Some of the major changes and issues related to the post office include increases in mail and parcel volume, new security measures, rate changes and customer confusion regarding 911 addresses.

## LIBRARY

The Pine Plains Free Library is conveniently located on South Main Street, is easily accessible by foot or auto, and has some vehicle parking. It has a staff of three (Library Manager, Library Clerk, and a Cleaner/Treasurer), a \$50,100 budget (\$35,000 comes from the Town of Pine Plains), five computers, three inkjet printers, a copier, fax, microfiche, and a microfilm reader. The library is a member of the Mid-Hudson Library System, which provides for inter-library loans as well as other services. The most pressing concern is the facility's lack of space.

## SCHOOLS

The Pine Plains School District covers 139 square miles of Dutchess and Columbia Counties and serves students from the Towns of Pine Plains, most of Stanford, and parts of Northeast, Clinton, Milan, Clermont, Ancram, and Gallatin. Three Schools – two elementary and one middle/senior high school – provided for a total of 1,485 students in 2000. According to the District superintendent recent additions have expanding classroom, cafeteria, and gymnasium space in the secondary school. The new space should allow for continued small class sizes and a low student to teacher ratio.

A fourth school, the Attlebury School, is located south of Pine Plains is a one-room schoolhouse and is maintained for historical purposes. The school district's bus garage, located behind the Seymour Smith Elementary School in town, maintains a fleet of 17 twenty-passenger buses and 20 seventy-passenger buses.

TABLE 6.1 SCHOOL ENROLLMENT FIGURES

	1998-99	1999-00	2000-01
<b>Cold Spring Elementary</b>			
Total Enrollment	287	265	262
Average Class Size	21	21	21
Annual Attendance Rate	95.5%	96.0%	93.9%
Teachers	NA	NA	21
Other Professional Staff			3
<b>Seymour Smith Elementary</b>			
Total Enrollment	550	542	513
Average Class Size	21	19	21
Annual Attendance Rate	95.5%	96.0%	95.0%
Teachers			36
Other Professional Staff			3
<b>Stissing Mountain Senior High</b>			
Total Enrollment	676	702	716
Average Class Size	19	19	20
Annual Attendance Rate	93.6%	96.0%	96.0%
Teachers			54
Other Professional Staff			5
Graduates Earning Regents Diplomas	49%	47%	57%
Distribution of 2000-02 Graduates	37% to 4-year college; 48% to 2-year college; 9% to military; 3% to employment; 2% to other		

PARKS AND RECREATION

Parks, open space, and recreation facilities are abundant in Pine Plains as shown in table 6.2. A total of about 1,023.8 acres is available for outdoor recreational use. This includes 360 acres of state-owned property in the western part of town, 43.3 acres owned by Friends of Stissing Landmarks (FOSL) and 507 acres owned by the Nature Conservancy property at the Thompson Pond Nature Preserve. The Nature Conservancy is a national, non-profit conservation organization that owns and manages hundreds of preserves across the nation for the purpose of protecting important natural areas and the plants and animals that exist on these lands. Thompson Pond is the headwaters of the Wappinger Creek, includes much of Stissing Mountain, and has been designated as a National Natural Landmark. Preserve lands consist of forest, abandoned fields, and wetlands and are available for hiking, cross-country skiing, and birding.

The Town of Pine Plains owns approximately 28 acres at Stissing Lake (donated by the Lion’s Club), which provide swimming, boating, and picnicking facilities, as well as several baseball diamonds. Basketball courts were recently added, constructed by volunteer labor and materials.

The high school and elementary school also provide recreation facilities; together they offer a playground, playing fields, lighted football field and track, and tennis and basketball courts. The acreage given for the school facilities include buildings and parking lots as well as additional open space surrounding the play areas.

Twenty acres of open space owned by St. Anthony’s Church is located in the center of town and is used for church functions, snowmobiling, dirt biking, dog shows, and visiting circuses.

The town presently enjoys informal access to Stissing Mountain and the fire tower on the mountain. The tower allows hikers to take in a spectacular 360-degree view of the Hudson Valley. Lands in five states are visible from the tower. The tower and 43.3 acres of land adjacent to the Nature Conservancy was recently acquired by FOSL (Friends of Stissing Landmarks), a not-for-profit corporation that also maintains three hiking trails leading up the mountain.

In addition to the recreation facilities within the town, the 600-acre Wilcox Park in Milan is available to Pine Plains residents.

TABLE 6.2  
RECREATION FACILITIES AND OPEN SPACE

<b>Facility</b>	<b>Acreage</b>	<b>Ownership</b>	<b>Description</b>
Stissing Mountain State Multi-Use Area	260	Public	Open space - conservation/recreation
State Forest	100	Public	Open space
Town Beach	28	Public	Swimming, boating facilities, play fields
Stissing Mountain High School	52	Public	Playing fields and courts, open space
Seymour Smith Elementary School	13.5	Public	Playground, playing fields and courts
St. Anthony's Church Property	20	Semi-Public	Open space
Thompson Pond Preserve	507	Semi-Public	Conservation, open space
Friends of Stissing Landmarks (FOSL)	43.3	Semi-public	Open space

Pine Plains appears to have ample open space for recreation such as hiking, cross-country skiing, fishing, birding, and camping and sufficient facilities for organized outdoor sports. The town also has the benefit of a beach and boat launches. However, little is available in the way of bike paths, walking trails, and parkland for more passive recreation and enjoyment. There are also no playground facilities for very young children. The St. Anthony’s Church property in the center of town appears to have potential for such types of recreation, with its primary advantage being its location. The town beach and adjoining property also provide an opportunity to develop alternate recreational facilities to serve a broad range of age groups and uses.

## WATER FACILITIES AND WATER NEEDS ASSESSMENT

### **Description of Existing Water Systems**

Two public water supply (PWS) systems exist in the Town of Pine Plains (Town). The Pine Plains Water Improvement Area serves approximately 860 people within the Hamlet of Pine Plains. The Hamlet of Bethel has one well that serves 12 homes and 2 horse farms. The remaining residents who are not connected with a PWS have individual wells. The US Census estimated the total population for the Town was 2,569 for the year 2000.

According to the Water Protection Plan for Dutchess County, NY, October 1992, (Horsley, Witten Hegemann, Inc.), the well field which serves the Hamlet consists of one bedrock Primary well located west of Route 82 and an auxiliary bedrock well on Myrtle Avenue. Since this report was published, the well on Myrtle Avenue has been abandoned and filled with concrete due to high iron concentrations, according to Town Supervisor, Mr. Gregg Pulver.

Primary and secondary wells are located at the Pine Plains Water Improvement Area facility on Railroad Street. The primary well is an 8-inch diameter, 114 feet deep bedrock well that taps a carbonate bedrock aquifer. Horsley, Witten Hegemann, Inc. reviewed production records for the Pine Plains wells in the early 1990s; the average pumping rate at the Primary well was 100 gallons per minute (gpm) for 15-17 hours per day. Water consumption for the users of the Pine Plains Water Improvement Area averages approximately 80,000 gallons per day. The well yield of the primary well ranges from 90,000 to 102,000 gallons per day for 15 to 17 hours of pumping. The secondary well is a 6-inch well 230' deep. It supplies about 120 GPM and its yield is also limited by pump capacity. It appears that the daily well yield of the primary well is a sufficient supply for the Hamlet's daily water consumption needs.

Pumped water from the well is disinfected in a 10,000-gallon chlorine contact tank and is either pumped directly into the water main system or to a water storage tower. A water storage tower was installed in the late 1990s. This 212,904-gallon tank receives water from the well after being disinfected with chlorine if demand is low. A fire hydrant system was connected to the water main system in the late 1990s.

Testing of chlorine levels is done on a daily basis and records are kept at the Department of Public Works office. Sampling results of analyses required by the County Health Department are kept at the Department of Health (DOH) office in Poughkeepsie, New York.

Mr. Scott Chase, former Town Supervisor and Bethel resident, supplied information concerning the PWS well in the Hamlet of Bethel. One well serves 12 homes and 2 horse farms. This well originally served a 6,000-acre farm in the early 1900s and is connected to a small central water main system. Well depth is 75 feet and the well draws water from sand and gravel deposits; yield capacity is estimated at 35 gpm. The well water is chlorinated and is inspected annually by the County DOH. There is no water district and no formal agreements among the neighbors who utilize the well.

Records Review: New York State Department of Environmental Conservation

The New York State Department of Environmental Conservation (NYSDEC) Region 3 office provided the following lists in response to an information request made by the Town with regards to spills and hazardous waste sites located in the Town.

- Solid Waste (SW)
- Spills
- Petroleum Bulk Storage (PBS)
- Mined Land Reclamation (MLR)
- Hazardous Waste Generators (HWG)
- Hazardous Waste Remediation (HWR)
- S.A.R.A. Title III, Section 313 (SARA)

A review of these lists provided the following information:

- There are no facilities in the Town, which are listed on the Dutchess County Hazardous Waste Generator List (July 2000).
- There are two locations in Pine Plains on the MLR list.
- There are no sites listed in the Town on the NYS Registry of Inactive Hazardous Waste Sites.
- For the Toxic Registry Inventory Facilities (SARA), sites are listed by name and not town. After reviewing a DOH list of regulated establishments, it was determined that none of the listed facilities are located in Pine Plains.
- A total of 34 spills have been filed with the NYSDEC Division of Environmental Remediation between 1986-2001. Information sheets on individual spills are available for review.

### **Dutchess County Department of Health**

The Dutchess County Department of Health (DOH) provided the following information:

- Sample results for water samples from the PWS in Pine Plains for various compounds; dates range from 1991-2001.
- Coliform Sampling for Regulated Establishments from 1/1/95 to 10/12/2001.
- Commercial SDS (Sewage Disposal System), Community Public Water, Solid Waste Facilities, Spills for the Town of Pine Plains. Dates range from 1932 -present.
- Registered Residential Sewage Disposal Systems (1996-2001).
- Complaints relating to Water or Sewer for the Town of Pine Plains.
- Facilities operating under permit.

A review of these documents and lists provided the following information:

- Copper levels from sampling sites range from 0.09 -0.18 mg/L (Drinking Water Standard is 1.3 mg/L) for dates 8/93-8/99.
- Sodium, Iron, Magnesium, and Chlorine levels exceed the Minimum Detection Limit (MDL) for Well 2 (auxiliary) for 11/16/92 sample.
- Lead levels from sampling sites range from 0.003-0.01mg/L (Drinking Water Standard is 15 ug/l or 0.015 mg/L) for dates 8/93-8/99.
- Nitrate level for well range from 0.3 –1.6 mg/L in 9/93 (Drinking Water Standard is 10 mg/L as nitrogen) for samples 9/93-6/01.

- Toluene, MTBE, Xylene-M, P detected in Well 1 for 10/8/98 sample (Drinking Water Standards for Principal Organic Contaminants is 0.005 mg/L).
- Repeat samples detect MTBE in Wells 1 and Well 2 for 11/19/98 sample. Well 1 = 0.0012 mg/L, Well 2 = 0.0007 mg/L.
- For entry point sample taken 3/26/2001, radiological sampling detects Gross Beta radiation level of 4.4 pCi/L (Standard 50 pCi/L).
- E. Coliform count tested positive at Stewart's on 1/20/2000 and 5/27/97.
- There are 73 individual wells listed with the DOH, these are residential, irrigation and farm wells.
- 6 complaints relating to sewer or water are registered with DOH.
- 31 Residential Sewage Disposal Systems are on file with DOH.

### **Well Head Management Areas**

The firm of Horsley Witten Hegemann, Inc. (HWH) prepared a Water Supply Protection Plan for Dutchess County in 1992 for the Dutchess County Water and Wastewater Authority. The Public Water System serving the Hamlet of Pine Plains was included in the study.

The Water Supply Protection Plan depicts the areas that were determined by HWH to be Wellhead Management Areas (WMAs) and Secondary Management Areas (SMA) for the two PWS wells. These areas were determined by mapping recharge areas of the dolostone bedrock aquifer. Recharge in Pine Plains occurs in areas where bedrock is exposed or in areas where permeable sand deposits are in direct contact with the bedrock. The SMA is adjacent to the largest WMA and consists of carbonate bedrock. The bulk of recharge to the aquifer that supports the well comes from the hills east and south of Pine Plains. Because of the fracture patterns in the bedrock, it was determined that precipitation falling in this area could recharge the aquifer tapped by the well in Pine Plains, even though it is in a different watershed. For this reason, the primary wellhead protection area was recommended to include a 300-foot wide zone in the sand plain at the margins of these hilly bedrock areas.

The PPWIA's supply wells tap an aquifer lying below a silt and clay layer more than 80 feet thick. This layer acts as an aquitard, or barrier, to groundwater and contaminant movement. Because of the aquitard, a large protection area immediately around the wellhead area for Well 1 is unnecessary. A 200-foot protective radius Remedial Action Area (RAA) around each well was designated based on the NYSDEC 1990 Wellhead Protection Program guidelines. Due to the geologic conditions of the area, the County Water Supply Protection Plan recommends a Primary Management Area that includes a larger area and buffer at key zones on the eastern side of the valley (see map). No WMAs have been designated for the community well in Bethel.

A shallow sand layer in Pine Plains forms a water table aquifer. The potential yield is limited by its thin saturated thickness. This aquifer is not a viable public drinking water source because of limited yield and its susceptibility to land use contamination.

### **Land Use and Wellhead Management Areas**

An analysis of Land Use categories within the WMA was conducted to help identify compatibility and potential for contamination to the water supply aquifer through recharge pathways. The largest WMA,

located east of Pine Plains (see Attachment 1) consists of Forest Land, Cropland or Cropland Pasture, Wooded Wetlands and Rural Estates with lot sizes greater than 5 acres. The Secondary Management Area, adjacent to the WMA, consists of Forest Land and Cropland or Cropland Pasture. The WMA east of Thompson Pond consists of Forest Land, Wooded Wetland and Cropland or Cropland Pasture. The WMA south of Thompson Lake consists of Wooded Wetland, Natural Water Body and Cropland or Cropland Pasture. The two WMAs located west of Halcyon Lake consist of Wetlands, Forest and Croplands.

The shallow sand layer in Pine Plains forms a water-table aquifer that is highly susceptible to water quality impacts of land uses and practices within the vicinity of a well. In the 1992 County Water Supply Protection Plan, several potential contaminant threats were identified within a one-mile radius of the drinking water supply wells. Of particular concern are septic system discharges, agricultural chemicals, highway deicing salts, industrial chemical discharges, leaking fuel storage tanks, and accidental spills. Geologic conditions in Pine Plains suggest that the most important areas to protect in a wellhead management area are actually outside of the Remedial Action Area. Precipitation falling on the bedrock will produce direct recharge while surface runoff from the highland areas will enter the sands and gravels and move quickly towards the bedrock aquifer. From the Land Use analysis, potential sources for contamination within the WMA are most likely from residential septic systems and agricultural practices. Both potential sources are managed by the individual landowner and are not directly regulated unless a complaint is filed with a State agency or a State agency otherwise detects a violation. Many waste products that are disposed into the septic system and many agricultural practices are exempt from State and local regulations, unless they cause a violation.

In the 1992 County Water Supply Protection Plan, the potential nitrate loading for the Pine Plains water supply was also done. This analysis showed that at full build-out under current conditions (no zoning or other land use control), nitrate concentrations could raise to 12 mg/l, which is more than two times the planning goal of the County and in excess of the drinking water standards.

### **Safe Yield Analysis**

The Water Supply Plan for Dutchess County included a safe yield analysis. Safe yield is the rate at which water can be withdrawn without depleting the supply to such an extent that it is harmful from economic, water quality or ecological perspectives. According to the study, the base flow in streams in Dutchess County supports an important ecological habitat and is significant to the wetlands that border these streams throughout the County. Streams that go dry are indicative of significant ecological and wetland impacts. The Wappinger system experiences reduced streamflow under current and future projections, but it is not at a critical level.

### **General Aquifer Characteristics Outside Wellhead Management Areas**

A thin deltaic sand layer that overlies silt and clay over bedrock overlies the valley floor south of the Hamlet of Pine Plains. This unit is generally not suitable for water supply due to its susceptibility to contamination from land use activities, its general lack of thickness and the limited volume of recharge. A glacial moraine located along the west side of the valley near Stissing Mountain has potential to serve as a public water supply aquifer, according to a study done by Connally and Serkin in 1976. This deposit of sand over sand and gravel has potential for higher groundwater yields, though concern was expressed for the affect on water levels for Thompson, Stissing and Twin Island ponds.

A review of records kept by the Dutchess County Department of Health was done. These records show well depth and well yield for residential and farm and irrigation wells that are registered with the DOH in the Town of Pine Plains. Depths of wells ranged from 30-680 feet, with the most of the wells being over 100 feet deep. It is assumed that the majority of the residential wells tap the limestone bedrock aquifer. Well yields varied greatly, from 0 to 100 gallons per minute.

## **Water Management**

### New York State Department of Health (NYSDOH)

- Source Water Assessment Program (SWAP)

Under 1996 Amendments to the Safe Water Drinking Act (SWDA), States are required to implement a Source Water Assessment Program (SWAP). The purpose of the SWAP is to provide a basis for decision-making associated with source areas and aspects of public water supply management. The availability of future funding for source water protection is conditioned on having an approved assessment program.

The New York State Department of Health Bureau of Public Water Supply Protection is responsible for ensuring that source water assessments are completed for all New York's public water systems. All assessments must be completed by May 2003. More information concerning the SWAP can be viewed at the website: [www.health.state.ny.us/nysdoh/water/swapfct3/htm](http://www.health.state.ny.us/nysdoh/water/swapfct3/htm).

The SWAP for the Public Water Supply System for the Town will most likely be completed by a regional health department or consulting firm. To assist in the assessment, it is recommended that any records the Town keeps with regards to the public water supply system be organized and available for review. Records should be in order and available for review for businesses which utilize toxic and hazardous materials.

### NYSDOH and New York State Environmental Facilities Corp.

- Drinking Water State Revolving Fund (DWSRF)

A DWSRF was created in 1996 as a result of State and Federal legislations and provides financial incentives for public and private water systems to finance needed drinking water infrastructure improvements. This program provides subsidized low interest rate loans for construction of eligible water system projects. As loans are repaid, money is made available for new loans. For communities with demonstrated financial hardship, interest rates can be reduced to zero percent. Information about the fund can be found at [www.health.state.ny.us/nysdoh/water/final/infoshet.htm](http://www.health.state.ny.us/nysdoh/water/final/infoshet.htm).

### Dutchess County Agencies

The Dutchess County Water and Wastewater Authority was created in 1992 by the State Legislature for the purpose of assisting the County and its municipalities in providing adequate supplies of clear, reasonably priced drinking water and the proper treatment of wastewater. The Authority has been involved in water resource studies in the County, including the 1992 Water Protection Plan for Dutchess County.

The Dutchess County Environmental Management Council can provide resources for communities including environmental education, watershed protection, wetland protection, recycling and composting, and land use.

The EMC also maintains a Natural Resource Inventory utilizing the Geographic Information System (GIS). The NRI is available to provide data and mapping services to local governments, businesses and citizens and is a powerful tool to assess and monitor the County's natural resources.

The Dutchess County Intermunicipal Council, of which the Town is a member, was established in 1999. The Council consists of 13 communities in the Wappinger's Creek Watershed area of Dutchess County. Its purpose is to conserve the shared watershed assets.

### Water Needs and Recommendations

The following have been identified as water needs in the Town, based on this review:

- Using the 1992 Water Protection Plan for Dutchess County Guidelines, regulations with regards to development should be adopted and implemented, particularly in the identified Wellhead Management Areas (WMA).
- Procedures for reporting chemical, hazardous waste or gasoline spills, which occur within the WMA, need to be developed and implemented.
- Identify businesses located in WMAs and their types of stored materials.
- Provide public education concerning septic disposal and agricultural practices, particularly those located in WMAs.
- Implement a Wetlands Protection Ordinance utilizing the NYSDEC Part 663 regulations and the Dutchess County EMC Model.
- Prepare for the NYSDOH Source Water Assessment Program by organizing data and reports with regards to the public water system.
- Utilize resources and programs provided by agencies in Dutchess County.
- WMAs should be identified for the Hamlet of Bethel community well and guidelines for protecting these aquifer recharge areas should be implemented.

## SOLID WASTE FACILITIES AND SOLID WASTE NEEDS ASSESSMENT

### Dutchess County Solid Waste Management Plan

The Final Solid Waste Management Plan for Dutchess County was prepared by the Dutchess County Resource Recovery Agency at Sand Dock Road, Poughkeepsie, New York in February 1992. The County was projected to generate about 249,860 tons of solid waste in 1990. At the time of the report, the Town of Pine Plains was operating a landfill and a recycling center, which was located north of the Hamlet of Pine Plains. The recycling center, which has since been discontinued, collected newspaper, magazines, glass, plastic, and bulky waste including scrap metal. Residents and some permitted carriers could use the center on a fee per bag basis.

### 2000 Census and Expected Generation Rates

The 2000 United States Census reported that the population of the Town of Pine Plains is 2,569. Using the statewide average of 4 pounds of residential and commercial waste per person per day (Source: Verbal communication from Mr. Michael McTague, Division of Solid & Hazardous Materials, New York State Department of Environmental Conservation), the Town of Pine Plains is expected to generate about 1,876 tons per year of municipal solid waste. This would be about 36 tons per week of municipal solid waste and recyclables requiring management. Any construction and demolition debris and industrial waste generated within the Town would be above and beyond this estimate.

### **Interviews:**

#### Mr. Greg Pulver, Town Supervisor, Town of Pine Plains

Supervisor Pulver stated that the Town's landfill has been closed with a final cover for about three to four years. Principally, private haulers serve the solid waste and recycling needs of the Town's residents. Town residents may take some materials to collection and transfer stations in surrounding towns.

The Town collects white metals (appliances) for Town residents.

#### Mr. Lee Reif, Region 3, New York State Department of Environmental Conservation

The landfill ceased accepting waste in late 1996, and the landfill was certified closed in November of 1997.

#### Ms. Zoie Riel, Recycling Coordinator, Dutchess County

Ms. Riel stated that private haulers collect solid waste from the Town of Pine Plain and brought to the Dutchess County Resource Recovery Facility in Poughkeepsie, New York. Recyclables are either brought by private haulers to the Dutchess County Materials Recycling Facility, also in Poughkeepsie, or are brought to transfer stations in adjacent towns, which also send their recyclables to the Dutchess County Materials Recycling Facility.

Ms. Riel stated that the Town of Pine Plains is one of only two towns that do not have their own transfer station or share in supporting a transfer station. The other town is the Town of North East (Village of Millerton).

Ms. Riel described that the Town of Red Hook operates a transfer station for solid waste and recyclables (including metals) that does not charge for drop-offs.

Ms. Riel stated that the Town of Milan has a transfer station, but there may be a fee to utilize this facility. Apparently, this is the closest transfer station to the Town of Pine Plains within Dutchess County.

There are two transfer stations in the City of Poughkeepsie that could be used by the Town of Pine Plains residents, but obviously these are not conveniently located for residents of the Town of Pine Plains.

Mr. Frank Capone, Royal Carting

Mr. Capone stated that Royal Carting collects solid waste and recyclables from accounts in Pine Plains, primarily commercial, and takes the solid waste to the Dutchess County Resource Recovery Facility in Poughkeepsie, New York, and takes the recyclables to the Dutchess County Materials Recycling Facility.

Mr. Jerry McHugh, Welsh Sanitation

Mr. McHugh stated that Welsh Sanitation collects solid waste and recyclables from accounts in Pine Plains, primarily residential, and takes the solid waste to the Dutchess County Resource Recovery Facility in Poughkeepsie, New York, and takes the recyclables to the Dutchess County Materials Recycling Facility.

Solid Waste Options

**Town Owned Transfer Station:**

**The Town of Pine Plains could build and operate a solid waste and recyclable transfer station for use by Town residents.**

One potential location for such a transfer station might be at the former Town Landfill on Hoffman Road. This location would have the advantage of being centrally located from west to east, although this location is near the northern border of the Town. As the Town is much wider from west to east than it is long from north to south, this location is largely centrally located within the Town.

**Multi-Town Transfer Station:**

**The Town of Pine Plains could join with other adjacent towns to build and operate a solid waste and recyclable transfer station for use by the residents of all participating towns.**

Smaller communities often find that sharing services among adjacent communities can be beneficial to taxpayers. The Town of Pine Plains could approach the Town of Northeast regarding the possible sharing of a transfer station. The Town of Northeast is to the east and southeast of the Town of Pine Plains. The Hamlet of Pine Plains is only 9 miles by road from the Village of Millerton, which is the major population center in the Town of Northeast. The principal disadvantage of sharing this with the Town of Northeast is that some residents would have to travel farther to reach the transfer station.

**Potential Funding Sources**

***Environmental Protection Fund:***

***Municipal Waste Reduction & Recycling Program (MWR&R)*** - Established by the Environmental Protection Act in 1993, the MWR&R program as administered by the New York Department of Environmental Conservation (NYSDEC) had awarded approximately \$10.8 million to 70 projects, as of February 1, 1999, that enhanced municipal recycling infrastructure through purchasing of equipment or construction of facilities. Projects that have received funding have included materials-recycling facilities (MRFs), state-of-the-art composting facilities, the purchase of recycling containers and new recycling vehicles.

***Clean Water/Clean Air Bond Act of 1996 (Bond Act): Municipal Recycling Projects Program*** – The Clean Water/Clean Air Bond Act of 1996, has extended the funds available to the MWR&R program. About \$50 million in 1996 Bond Act authorized State assistance will be provided to local governments to fund eligible recycling capital projects on the MWR&R waiting list. Additional projects are accepted on an ongoing first-come-first-served basis. As of February 1, 1999, the NYSDEC had awarded \$6.9 million to 21 projects.

Both the MWR&R grants and the Bond Act loans can assist the Town in building a transfer station or multiple convenience stations. However, the eligible costs would be limited to those portions of such facilities that are dedicated to recycling.

## SEWER FACILITIES AND WASTEWATER NEEDS ASSESSMENT

### **Current Wastewater Conditions**

Disposal of wastewater in the Town of Pine Plains occurs through individual septic systems for all residences, businesses and farms. There is no wastewater treatment facility located in the Town of Pine Plains (Phone Conversation, Mr. Gregg Pulver, Town Supervisor).

The total estimated volume of wastewater generated on a daily basis for the Town of Pine Plains is estimated to be 256,900 gallons per day. This number was generated by multiplying the population of Pine Plains in the year 2000 (2,569 people) times the average value of 100 gallons per day, as given By Mr. Angus Eaton, NYSDEC Division of Water.

Copies of records from the County Department of Health (DOH) for the Town of Pine Plains include complaint records with regards to water and septic, and lists of residential and commercial sewage disposal systems.

Installation of a new residential SDS (<1,000 gallons) requires an approved application by the County Department of Health (DOH); this requirement has been in effect since the 1970s. Repairs to an existing system must also be approved by the DOH; this requirement has been in effect since 1999. The installation of a new commercial SDS requires a design review by the DOH Engineering Department (Phone Conversation, 10/29/01, Mr. Jim Fousts, Sr. Public Health Sanitarian, Millbrook Office).

Four (4) complaints are listed on the record kept by the DOH. The complaints were all related to residential SDS and were either failure or sewage back up problems. Some of the same records, which are kept at the County DOH office, are also kept on file at the Town Hall, according to Mr. John Schmidt, Town Building Inspector.

## ON-SITE SEPTIC SYSTEMS

### **Influence of Soils on Septic Wastewater Disposal Systems**

The performance of on-site wastewater treatment systems is dependent on the type of soils in which the septic tank absorption fields are located.

## Past Soil Evaluation

The Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service, evaluated the soil types in Dutchess County for a range of purposes, which included the suitability of the soil types for use in septic tank absorption fields.

A typical on-site rural wastewater treatment system consists of a septic tank followed by an absorption or leach field. The septic tank provides primary treatment by equalizing flow and by removal of solids by sedimentation. The absorption or leach field typically consists of a system of perforated pipes imbedded in sand or other natural soils. The wastewater is evenly distributed within the leach field where it seeps into the soil. A bacterial film develops in the soil that absorbs the waste materials and nutrients. The waste materials are converted to energy and bacterial mass. The nutrients are also absorbed into this mass. Oxygen in the pores of the soil helps to aerate the wastewater, and aids in the biological breakdown of the wastewater constituents. In a properly designed and constructed absorption or leach field system, the waste contaminants are removed by the time the wastewater infiltrates below the treatment zone and enters the groundwater.

To ensure that on-site septic systems will operate properly, a range of conditions must be present in the soil where such systems are constructed. If the permeability of the soil is too high, the wastewater will infiltrate too quickly through the soil for the treatment to take place, and will contaminate the groundwater. If the soil permeability is too low, the water will not enter the soil fast enough. The under-treated wastewater could emerge at the ground surface possibly creating an exposure risk to people, or wastewater could contaminate surface water, which is also an exposure risk to people and animals. Also, since all the soil pore zones fill with water, air or oxygen is not available to the bacteria. This typically causes conditions in which oxygen is absent and can cause odor problems.

In soils where the groundwater is characteristically high, the wastewater may enter the groundwater before it is fully treated. Additionally, oxygen may be restricted from reaching the treatment zone so that the consumption of the organic material in the wastewater slows. Also, the wastewater may emerge and flow over the top of the soil and contaminate surface water, which is also an exposure risk to people. Similarly, if the soil layer is thin and the bedrock is shallow below this thin layer, the wastewater may enter the groundwater before it is fully treated.

Knowledgeable of these influences on treatment, the NRCS rated each soil type as to its expected ability to support the proper functioning of a typical septic tank absorption field. However, certain issues must be kept in mind when reviewing these NRCS soil evaluations. The geomorphology (the history of how the geologic layers were formed) of a given study area can vary considerably and this geomorphology has affected the soil characteristics that pertain to the suitability of the soil for septic absorption leach fields.

Mountainous, hilly and glacial areas, such as those that frequently occur within the study area, can have a number of factors that tend to increase the percentage of soils with characteristics that are less desirable for septic absorption systems. Mountainous or hilly areas tend to have a larger percentage of surface areas where the soils exhibit steep slopes, or shallow depth to bedrock. Many glacial areas tend to have pockets of highly permeable gravel or sandy outwash areas. Also, glacial areas may have commingled layers of loose, more permeable soils and consolidated or lacustrine, less permeable soils. The loose, more permeable soils may be too permeable for septic absorption fields and the later soils may be subject to a high water table or to flooding, both undesirable for septic absorption fields.

Certain areas of New York State, such as river valleys with a river plain outside of the river floodway, are rarely subject to flooding, have low slope, have a sufficient depth to bedrock, often have soils that are a mixture of clay, silt and sand that results in a loam soil with desirable percolation characteristics, and usually have enough relatively recent deposits to cover previously formed, over-consolidated and lowly permeable lacustrine deposits. These characteristics mean that such river valleys are more likely to have a greater percentage of surface soils that are desirable for septic absorption fields.

The Pine Plains area has a glacial geologic history and a hilly topography. This soils history has resulted in a low percentage of soils that were expected by NRCS to be suitable for septic absorption fields.

The NRCS warns that the rating of the soil types is not to be used as a substitute for actual testing. The permeability of the soil in a particular location can vary substantially from that expected from the rating.

### **New York State Requirements vs. NRCS Septic Tank Absorption Field Rating**

The New York State Department of Health (NYSDOH) has requirements for the permeability of soils that are to be used in septic tank absorption fields. These are contained in Appendix 75A, Wastewater Treatment Standards – Individual Household Systems, of Part 75 of Chapter 11 of Title 10 of the New York State Department of Health Administrative Rules and Regulations. With regards to soil permeability these regulations allow absorption field systems in soils that meet all other requirements, if these soils have a permeability of between 1 and 60 minutes per inch (min/in). The required length of the absorption trench is adjusted base on the number of bedrooms in the house and the permeability of the soil. This NYSDOH rating system does not exactly correspond to the NRCS system of ratings. The soil ratings by the NYSDOH and the NRCS are compared in Table 6.3.

Permeability (min/in)	NYSDOH Title 10 Part 75 <sup>1</sup>	NRCS <sup>2</sup> Expected Limits:
0	Up to 4 bedrooms, but increasing length of trench (1-30)	Poor Filter (0-10)
10		Slight (10-30)
20		
30		
40	Up to 3 bedrooms, but increasing length of trench (30-60)	Moderate (30-100)
50		
60		
70	Alternative systems may be required (60-120)	
80		
90		
100		
120		
>120	(>120)	Severe (>100)

<sup>1</sup> Appendix 75A, Wastewater Treatment Standards – Individual Household Systems, of Part 75 of the Administrative Rules and Regulations contained in Chapter 11 of Title 10 of the New York State Department of Health

<sup>2</sup> Part 620, Natural Resources Conservation Service, National Soil Survey Handbook, 1993

## Categorization of Soils by Ability to Support On-Site Wastewater Treatment System

As discussed, there are many factors, in addition to the permeability, that can influence the viability of a leach or absorption field, including:

- Slope
- Flooding
- High permeability layers
- Low permeability layers

To assess the soils for all of these factors, STERLING developed the categories that are described in Table 6.4 below.

TABLE 6.4 SOIL GROUPS USED TO RATE SOILS FOR THEIR EXPECTED SOIL SUITABILITY FOR SEPTIC TANK ABSORPTION FIELDS

Group	Description of Group	Leachfield Designs Expected or Appropriate for Soil Group	Soil Map Units Included Within Group
1. “Suitable Soils” Expected	Soils with no or no significant characteristics that interfere with installation of Onsite Wastewater Treatment System (OWTS) effluent. These would include well-drained soils on slopes less than or equal to 15 percent that have no restrictive subsoil characteristics within 48” of soil surface.	Conventional Leachfields or Seepage Pits	DuB, DuC, HsA, HsB, HsC, HuA, KrB
2. Generally Suitable Soils with Design Limitations (“Limited Soils”)	Soils with characteristics that interfere with treatment of OWTS effluent, but which occur at a great enough depth (>24 inches) or of a type (e.g. fast percolating gravels) that support Conventional Shallow Trench leachfields. Selected soils on slopes >15% were included if no restrictive subsoils exist, allowing slope modification of 15 to 20 % slopes. Selected soils having bedrock at a depth of 20” to 40” were also included.	Conventional Shallow Trench Leachfields	CuA, CuB, CuC, CwA, CwB, GsA, GsB, GsC, Ha, HsD, HtA, HtB, Ps, SkB, SkC, SkD
3. “Marginal Soils”	Soils having restrictive subsoil characteristics (e.g. seasonal high water table, fragipan or bedrock) at depths between 12” and 24”, or flooding concerns. Selected soils on slopes >15% were included if no restrictive subsoils exist, allowing slope modification of 15 to 20% slopes.	Alternative Designs (requiring site modification by importation of select fill)	Ca, Cc, CuD, DuD, DwB, DwC, FcB, FcC, Fr, GfB, GfC, HoC, NwB, NwC, Pg, SkE, SmB, SmC, W, We
4. “Unsuitable Soils”	Soils having restrictive subsoil characteristics (e.g. seasonal water table,	Generally not allowed for new	CrE, CtB, CtC, CtD, CuE, DwD,

<b>Group</b>	<b>Description of Group</b>	<b>Leachfield Designs Expected or Appropriate for Soil Group</b>	<b>Soil Map Units Included Within Group</b>
	fragipan or bedrock) at depths between 0 to 12”, flooding problems or slopes >15%.	construction	FcD, FeE, Ff, GfD, HoD, HoE, HoF, HsE, Ln, MnA, MnB, NwD, NxE, Pc, Ra, Su, Ud, Wy

These ratings are compared to the NYSDOH requirements and NRCS ratings in Table 6.5.

**TABLE 6.5 PERMEABILITY VS. SEPTIC TANK ABSORPTION FIELD REQUIREMENT OR RATINGS INCLUDING COMPREHENSIVE PLAN SOIL GROUP RATINGS**

<b>Permeability (min/in)</b>	<b>NYSDOH Title 10 Part 75<sup>1</sup></b>	<b>NRCS<sup>2</sup>: Limits</b>	<b>This Comprehensive Plan</b>
0	Up to 4 bedrooms, but increasing length of trench (1–30)	Poor Filter (0-10)	Suitable Soils Or Limited Soils If gravel occurs below 24 inches and above 40 inches Or Marginal Soils If Unsuitable Layer between 12 and 24 inches  (0-100)
10		Moderate (30-100)	
20			
30			
40	Up to 3 bedrooms, but increasing length of trench (30-60)	Moderate (30-100)	Unsuitable Soils (>100)
50			
60	Alternative systems may qualify (60-120)	Severe (>100)	Unsuitable Soils (>100)
70			
80			
90			
100			
120	(>120)	Severe (>100)	Unsuitable Soils (>100)
>120			

<sup>1</sup> Appendix 75A, Wastewater Treatment Standards – Individual Household Systems, of Part 75 of the Administrative Rules and Regulations contained in Chapter 11 of Title 10 of the New York State Department of Health

<sup>2</sup> Part 620, Natural Resources Conservation Service, National Soil Survey Handbook, 1993

### Results of Categorization of Soils

Using the NRCS map of soil units and accompanying data for the Town of Pine Plains, the various soil units were mapped and shaded to match the soil group according to the method described above, see Table 6.6.

TABLE 6.6 ESTIMATION OF SOILS POTENTIAL USE FOR SEPTIC TANK ABSORPTION FIELD

Soil Group	Acres	Percent of Total Land Area
Suitable Soils Expected	2,475	12
Limited Soils Expected	3,703	19
Marginal Soils Expected	5,969	30
Unsuitable Soils Expected	7,756	39
Total Land Area	19,903	100

The “Suitable Soils Expected” group comprises about 12 percent of the surface area of soils in the Town and the individual areas are primarily located just west of the north-south centerline of the Town. The “Limited Soils Expected” group comprises about 19 percent of the soils in the Town and the individual areas are primarily located in many areas of the Town with the exception of the southwest corner of the Town. The “Marginal Soils Expected” group comprises about 30 percent of the soils in the Town and the individual areas are located in all portions of the Town. The “Unsuitable Soils Expected” group makes up about 39 percent of the soils in the Town and individual areas are located in all portions of the Town with a concentration in the southwest portion of the Town.

With fewer than 31 percent of the soils expected to be either suitable or limited in their use for septic absorption fields, the Town of Pine Plains may encounter limitations, or in certain locations, hindrance to future growth. Soil limitations could result in it being more expensive to design and install a septic system if soil amendments or an alternative design is necessary or it may make it difficult to locate a conventional septic system on the parcel.

The largest concentration of suitable soils for septic absorption fields in the Town of Pine Plains already has been developed and is the location of the town center (the Hamlet). See Figure 1. Since soils located outside of the Hamlet are less suitable for siting a septic system, development that occurs in the balance of the Town of Pine Plains may be difficult or more expensive. Alternative systems for installing waste treatment systems on marginal or unsuitable soils include intermittent sand filters; evaporation-transpiration; evapo-transpiration absorption systems; holding tanks; composters; chemical and recirculation toilets; incinerator toilets; gray water systems; and engineered systems.

When interpreting these results, certain factors must be kept in mind. First, the NRCS warns that the rating of the soil type is not to be used as a substitute for actual testing. The permeability of the soil in a particular location can vary substantially from that expected from the rating.

Second, the ratings of the soils by the NRCS do not exactly coincide with the limitations imposed by the NYSDOH with regards to permeability. The NYSDOH will permit septic leach fields on soils with permeability’s as low as 1 min/in, and through at least one alternative system, up to 120 min/in. The NRCS rating of soil permeability, which is critical for expected septic absorption fields, usually rates soils as either 100 min/in, 300 min/in, or greater. The NRCS rating of soil permeability did not distinguish soils with permeability’s above and below 120 min/in as is required by the NYSDOH.

## Appendix 8 TRANSPORTATION

### BUS TRANSPORTATION

Pine Plains is served by the county bus system, which provides transportation to and from the town center via Route 82. Two routes, including a commuter express bus and a mid-day bus, pass through Pine Plains five times daily during the week. Mid-day buses arrive three times on Saturday. A commuter bus leaves a park and ride lot at the Stissing Mountain High School each weekday morning.

### RAILROAD

Metro-North Commuter Railroad provides passenger service on two major rail lines connecting Grand Central Station in New York City and Dutchess County. The Harlem Valley line extends from the city to Wassaic, and the Hudson River Line serves Beacon, New Hamburg, and Poughkeepsie. In addition, Amtrak trains travel along the river, making stops at Poughkeepsie and Rhinecliff. These lines provide freight as well as passenger service. Pine Plains residents can travel to the Wassaic station by means of Routes 199 and 22, the Rhinecliff station by means of Routes 199 and 308, and the Poughkeepsie station by means of Routes 82 and 44. These stations are 20 to 50 minutes from Pine Plains.

### AIRPORTS

The only airport in the county with regularly scheduled commercial flights is the Dutchess County Airport in the Town of Wappinger. Several small-scale commuter airlines at this airport provide direct flights to Washington, D.C. and cities in New York, New Jersey and New England. Other airport facilities in the county include Stormville Airport in East Fishkill, Sky Acres Airport in Union Vale, Sky Park Airport and the Old Rhinebeck Aerodrome in Red Hook. Sky Park is the closest of these private airports, located off Route 199 about 20 minutes from Pine Plains. The closest international airports are Albany, Stewart, La Guardia and Hartford, CT.

### PEDESTRIAN & BIKEWAY SYSTEM

Sidewalks are provided on a limited number of streets within the hamlet of Pine Plains. Many of these sidewalks are in need of repair and replacement. There are no dedicated bicycle trails.

### ROAD AND HIGHWAY NETWORK

The primary mode of transportation in Pine Plains is the private automobile. In 1990, almost eighty-eight percent of the town's labor force drove to work alone or in a carpool. This section describes the existing road network and the patterns of use that have evolved.

#### Function

Problems occur when roads serve more than one function. When residences and commercial areas are located along major highways, these roads must serve two functions: regional (moving goods and people from one locality too another) and local (providing access to adjacent property). The result is traffic congestion, frequent accidents, and a much lower speed on what should be a high-speed thoroughfare.

Table 7.1 shows the number of miles in Pine Plains under each jurisdiction. The distribution is typical of most areas of the county.

TABLE 7.1 ROAD JURISDICTION, 1986

JURISDICTION	MILES	PERCENT OF TOTAL
New York State	14.43	22.91%
Dutchess County	9.8	15.56%
Pine Plains	38.75	61.53%
Total	62.98	100.00%

The town is served by two state highways, which operate as thoroughfares as described in the classification on the previous page. They compromise over a fifth of the road surface in Pine Plains. Route 199 is an east-west route, providing access to the city of Kingston and the New York State Thruway across the Hudson River as well as Route 44 in Connecticut.

Route 82 is a north-south artery, linking Dutchess County with Columbia County. It connects with numerous other state routes that serve southern and eastern Dutchess: Routes 44, 343, 55, 376, and 52. Both Routes 82 and 199 provide access to the Taconic State Parkway, which leads south to Interstate 84 and the New York Metropolitan Area and north to Interstate 90.

Table 7.2 and Figure 7.1 in the next section show traffic volumes for all segments of the state roads in Pine Plains. Comparisons are made to show the growth in traffic over the last 30 years.

There are five county highways in Pine Plains, comprising about 16 percent of the total road coverage. These roads serve as collectors, linking smaller town roads with the state highways. Three of the county roads, Routes 50 (Mt. Ross Road), 83A (North Main Street), and 59 (Bean River Road), lead north from Route 199 to Columbia County. Routes 70 (Righters Corners Road), 83 (Amenia Road), and 59 lead south to the Town of Northeast. There are no county roads connecting Pine Plains with Milan or Stanford. Access to these towns is more limited, mostly because of the barriers posed by Stissing Mountain, the two state forests, and the county park. However, a few town roads as well as the state highways connect Pine Plains with these towns.

Table 7.2 compares traffic volumes for selected portion of county roads in Pine Plains; Figure 7.1 illustrates the most recent data.

There are nearly forty miles of town roads in Pine Plains, comprising almost 62 percent of the total mileage. These are “local” roads as defined above, although roads such as Stissing Mountain and Schultz Hill also serve to collect and channel traffic from smaller roads to the state highways. However, because so little traffic is generated in these rural areas, this function does not seem to be overburdening these roads. Traffic counts are not available for town roads.

### Traffic Volumes and Patterns

The New York State Department of Transportation collects and publishes traffic volume information for state highways (Table 7.1). The counts shown are the average daily (24-hour) traffic volumes for the given year.

Traffic patterns in 2000 (the most recent traffic counts available) resemble similar patterns to those visible in the 1986 Master Plan. The highest traffic volumes are on Route 82 from Route 83 to the traffic light in the town center. Between 1992 and 2000, traffic on this section of the highway increased

the most rapidly of all roads in Pine Plains, almost 10 percent per year. Actual volumes may be much higher than these figures indicate, since the last count for this road was taken in 2000. Traffic on much of Route 199 is relatively heavy also. The section east of the town center has higher traffic volumes, with a higher rate of increase per year than the western section.

Overall, Table 7.2 details the moderate to high increases in traffic volumes on various roads throughout the town. The highest volume increases were on Route 82, between Myrtle Ave and the intersection at Route 199 (9.9% increase). Two sections along Route 199 showed decreases in traffic volume between 1995 and 2000. This is somewhat misleading however, in that the traffic volumes increased about 100% on Route 199 since the 1970's.

TABLE 7.2 TRAFFIC COUNTS, STATE ROADS AND COUNTY ROADS, 1971 – 2000

	Map Key	Count AADT						% Change Total %	Avg. Annual Change		
		1970's	1980's	1990's			2000		70's- 2000	1970's- 1980's	90s to 00
Route 82	12			2189 (97)							
	1	1200	1350	1900	1650	2200	2000	67	2.5	1.4	0.6
	2	1400	2250	2650	3900	3950	4750	239	8.3	8.7	9.9
	3	1500	1800	2500	2550	2450	2500	67	2.5	2.2	0
	4	700	400	720	760	740	900	29	1.2	-5.4	3.6
	13			3944				NA*	NA	NA	NA
Route 199											
	5	880	960	2200	1700	1700	1700	93	3.5	0.8	-4.5
	14			2977				NA	NA	NA	NA
	6	2050	1750	2450	3200	3000	3250	59	2.3	-1.6	3.6
	7	920	1500	2000	1800	1900	1900	107	3.9	5.7	-0.7
Route 83*											
	9		287				420	46	NA	NA	NA
	8		451				590	31	NA	NA	NA
Route 70											
	10					371		NA	NA	NA	NA
	11					269		NA	NA	NA	NA

\*(NA indicates that data was not available)

## TRAFFIC ACCIDENTS

The Dutchess County Traffic Safety Board compiles information concerning accidents. Accident data were examined for the period 1995 to 1999, during which there was an annual average of 45 accidents in Pine Plains. Almost 59 percent of the accidents involved only property damage, while 41 percent caused one or more injuries. There were two fatalities due to traffic accidents during the 5-year period.

The previous Comprehensive Plan (1987) analyzed accident statistics between 1982 and 1984. Table 7.3 shows that the annual average number of accidents is somewhat higher in the more recent calculation (1995 to 1999). Compared to the earlier analysis, there has been almost no change in the percentage of accidents involving only property damage and those involving injury

TABLE 7.3 ACCIDENT COMPARISONS, 1982 – 1984, 1995 – 1999

	1982 to 1984	1995 to 1999
Annual average accidents	37	45.2
Percent of accidents involving injury	40%	41%
Percent of accidents involving property damage only	60%	59%

Most of the accidents (approximately 58 percent) occur on state roads, and are the result of an animal action, slippery pavement or unsafe speeds. Several areas appear to have more than the average number of accidents. These include: Route 199 near Stissing Mountain Road, Bean River Road, Chase Road, Schultz Hill Road, and Finkle Road; Route 82 and Amenia Pine Plains Road, Strever Farm Road, and Briarcliff lane; and Amenia Pine Plains Road.

## ROAD CONDITIONS AND PARKING

### State Roads

State roads in the town are maintained according to federal standards adhered to by the New York State Department of Transportation.

### County Roads

According to the Dutchess County Department of Public Works (DPW), there are no major road update projects scheduled on county roads in the Town of Pine Plains. Within the next few years the DPW plans to replace the bridge on Route 83 just past the intersection with Route 70.

### Town Roads

The Pine Plains highway department maintains 62 percent of the roads in the town. The current maintenance program provides for the sealing of every road at three to four year intervals. This would involve about 10 miles of road maintenance per year. Standards have been adopted for construction of new Town roads; they are currently under review. The Superintendent of Highways prioritizes major improvements to existing roads with consideration given to traffic loads, safety, and road surface and subsurface condition.

### Downtown Parking

In April 2002, a new parking inventory was done in the Pine Plains downtown area. On-street parking is available along both sides of both highways; there are 60 to 70 spaces, depending on desired walking distance. Many of the off-street parking areas have undefined spaces. However, the following table outlines the off-street parking potential in Pine Plains.

1. Peck's/Cindi Cafe (formerly Chip's)/Stissing House	64 undefined spaces
2. Pine Mall	8 undefined
3. Spumoni Gardens (formerly Junction Cafe)	22 undefined
4. Municipal Lot	57 defined
5. Peck's Supermarket	44 defined
6. Monet's Petals (formerly The Barn)	4 undefined

Since 1987, new businesses have opened along Route 82 (on the former Pilch Farm.) These include the following off-street parking spaces:

1. Post Office	17 defined
2. The Barn/Chinatown/Dutchess Medical	21 defined
3. Stewarts	12 defined
4. Gardeners Green	5 undefined
5. New England Wholesale Hardwood Office	8 undefined

The Dutchess County Department of Planning did a field survey of parking spaces in 1986. At that time, up to 144 spaces were inventoried in Pine Plains. About half of those were undefined spaces (where parking lots have no individual spaces outlined). The 2002 inventory indicates that there are up to 190 spaces with 39 undefined spaces. The municipal lot increased from 26 defined spaces to 57.

#### SCENIC ROADS AND LOCATIONS

There are no state or county designated scenic roads or byways in Pine Plains. The residential survey asked each person to identify scenic locations within town. A list of 61 locations was identified (See Map of Important Places). More than 10 respondents consistently identified nineteen locations as scenic. These are (in order from most frequently cited location):

- Stissing Mountain State Forest
- Stissing Lake
- Fire Tower
- Thompson Pond
- Twin Island Lake
- Halcyon Lake and wetlands to the southwest
- Winchell Mountain Road
- Bethel Cross Road
- Stissing Mountain Road
- Schultz Hill Road – south of Johnny Cake Hollow
- Johnny Cake Hollow Road
- Stissing Lake Road
- Route 83 south of Bethel
- Silvernails/Hoffman Roads
- Bean River area
- Route 199 at Winchell Mountain Road
- Shekomeko stream, north of Route 199
- East of Bethel
- Route 82, south of intersection with Route 83.

## Appendix 9                    CULTURAL RESOURCES

### HISTORY OF PINE PLAINS

The following history was taken from the writings of Helen Netter, Pine Plains historian:

Pine Plains holds an important position in the history of the United States for it has the distinction of being the scene of the first Moravian congregation of Protestant Indian converts in America.

In 1735, Moravian missionaries came from Germany to the colony of Georgia to Christianize the Indians. One of the missionaries, Christian Henry Rausch, was sent to New York. There he learned of a delegation of Mahican Indians, three chiefs, who were in the city on business with the colonial government.

They agreed to Rausch's coming to teach them. They led him to their village, which was called Shekomeko, two miles south of Pine Plains. In 1742, the first regular congregation of believing Indians, composed of 10 persons, was established in North America.

For a time, the work flourished, but trouble arose with white settlers opposed to any efforts to Christianize the Indians. The missionaries were branded as papists and traitors, and Rausch, with many of the Indians, moved to Connecticut.

The majority of the early white settlers of this region came from Palatinate, a German state on the Rhine. There are indications of a thriving community in existence well before the town was organized. In 1796, a tannery was built near the Shekomeko Creek and about the same time, buildings of the Harris Scythe Works were erected nearby, giving the area its name of Hammertown. Records show that by 1798, there was a hotel, a blacksmith shop at least two stores, and over a dozen dwellings, among these the log blockhouse built by Lewis Graham (1767) and the stone house of his brother, Morris Graham (1773), both of which are still standing.

Another ancient institution is the Union Library, the first public library in Dutchess County. On January 9, 1798, a meeting was held in the public house of Ebenezer Baldwin (later the Stissing House) at which a public library was incorporated with 47 subscribers listed.

The year 1800 saw the beginning of an industrial boom in Pine Plains, and in 1813, Articles of Association were drawn up for construction of a Union Meeting House of all Christian denominations, which later became the property of the Presbyterian Society. Henry and Matthias Hoffman purchased their mill property (later Patchin's Mill) in 1801. In 1814, Stephen Eno built his law office, the small building known to this day as the Eno Law Office.

The North East Precinct, then a part of the Little Nine Partners Patent, included Milan, North East, and Pine Plains. Geographical conditions made separation necessary, and in 1823, the first town election of Pine Plains was held.

During the 19<sup>th</sup> Century, railroads contributed greatly to the well being of the town with, at the peak, 18 daily trains in and out of Pine Plains' four stations. The rails were finally abandoned in the 1930s, thus marking the end of an era.

In the latter part of the 19<sup>th</sup> Century, one of the best-known Pine Plains institutions was the Seymour Smith Academy. By a bequest of Seymour Smith's will, his entire property was turned over to the town for establishing a school for promotion of science and useful knowledge. In 1933, the Pine Plains Central School was established, the old academy building was torn down, and a new building housing both elementary and secondary grades, was erected. In 1970, with completion of the Stissing Mountain Junior and Senior High School, this building became the elementary school, again bearing the illustrious name of Seymour Smith.

Historical material devoted to the towns that make up Dutchess County is limited and fortunate indeed is the community such as Pine Plains that has had a local historian of the caliber of Isaac Hunting, author in 1897 of "History of Little Nine Partners....and Pine Plains, New York."

## PINE PLAINS CULTURAL RESOURCES

The Planning and Zoning Commission compiled the following list of cultural resources, with help from historian Helen Netter. It includes recognized historic buildings as well as informally valued special features. It is not all-inclusive; it serves as a base for future efforts towards identification and preservation of the town's cultural resources.

### Historic Structures

1.     **Harris-Husted House**  
A small "salt box" house located off Route 199 in Hammertown. This house was build between 1770 and 1800 and was occupied by the Harris and Husted families, who operated a nearby scythe and tannery operation. During the 1800s the Harris Scythe Works produced 18,000 scythes annually, and the noise of the trip hammers caused the surrounding are to be called Hammertown. The Little Nine Partners Historical Society is now in the process of restoring the house.
2.     **Peter Husted House**  
Located off Route 199 in Hammertown, this house was built around 1790. It represents a colonial style home with hand-fluted woodwork. The barn is currently being operated as a shop for antiques, yarn and gifts.
3.     **Schultz House**  
  
An early colonial farmhouse on the Schultz Hill Farm.
4.     **The Pines**  
  
A 23-room Victorian mansion built in 1878 by William S. Eno. The Eno family is renowned for its respected involvement in the legal profession. William Eno's sister-in-law, Rachel, took over the house in 1895, and it became a fashionable boarding house. In 1983, the Pines was listed on the National Register of Historic Places for its exceptional architectural value.
5.     **Morris Graham House**

A stone house located off Route 82 and built by Morris Graham in 1772. The structure has a “Flemish” or gambrel roof on stone gables.

6. Brush House

Located on Church Street behind the Deli and Municipal Parking lot. This house was built by Lewis Graham in 1773 of oak logs.

7. Eno Law Office

Located in the hamlet of Pine Plains on Route 82. This small clapboard structure, built in 1814, represents one of the few examples in New York State of an early building built for professional use. It has been used for over 150 years as a law office.

8. Patchin’s Mill

Henry and Matthias Hoffman purchased the property in 1801, and it was sold to the Patchins in 1840. However, the existing mill is a more recent structure.

9. Pine Plains Memorial Clock Tower

The clock was erected in 1920, dedicated to the memory of Dr. Henry Clay Wilber, a well respected doctor who practiced in Pine Plains for 52 years.

10. Seymour Smith Academy

By a bequest of Seymour Smith’s will, his entire property was turned over to the town to establish a school. In 1933, the Pine Plains Central School, having been established, the old academy building was torn down and a new building was erected.

11. Stissing House

Peter Husted, who succeeded Ebenezer Baldwin as landlord, built the present building in 1801. There was formerly a tavern on the site, built before 1782.

12. Stissing National Bank

The Stissing National Bank is a successor to the Pine Plains Bank, established in 1839. The central part of the current building was built in 1858; there are newer additions on both sides.

13. Pine Plains Grange

The Grange was originally the Baptist Church, built in 1838.

14. Episcopal Church

Built in 1861

16. Presbyterian Church

The present stone structure was build in 1925 after an earlier church was destroyed by fire.

17. United Methodist Church

Built in 1837, the church was repaired and enlarged in 1871.

18. Saint Anthony's Roman Catholic Church.

Built in 1912.

19. The Pine-Mall

Originally called Memorial Hall, this structure was given to the town by Mrs. Alexander Saunders for use as a community center. It was built in 1914. It is currently privately owned.

20. The Millius-Bently House

Located in Mt. Ross, this example of Dutch vernacular architecture is listed on the National Register of Historic Places. Part of the building dates to the early eighteenth century and may be one of the oldest structures in the county.

21. Jim Ryan's House, corner of Pine and Maple

22. Moravian Monument, corner of Strever Farm Road and Bethel Road

23. Evergreen Cemetery

24. Fire Tower on Stissing Mountain

25. Lake House