

Chapter 7. Economy

History of the Pine Plains Economy

The economy of Pine Plains has been linked to agriculture since at least the 1800s when wheat farmers settled in Dutchess County. The opening of the Erie Canal changed economic conditions and farmers in Dutchess County switched their focus to dairy production. The construction of railroads throughout the region led to a prosperous economy since dairy could be shipped from Dutchess County to population centers along the Hudson River and New York City via train. The highway system changed the way goods were shipped and brought commuters and seasonal residents to Pine Plains.

Agriculture is still very important to the Pine Plains economy, but the business of agriculture has changed. Technology and other market factors have led to the consolidation of small farms, and others have been developed for residential use. Farming is still important to the identity of Pine Plains. The Town has many active fruit and vegetable, dairy, and horse farms, which sell their products in the traditional sense but are also exploring agritourism as another revenue stream.

Jobs in Pine Plains

According to the U.S. Census Bureau's LEHD 2015 dataset, the two sectors with the largest number of jobs in Pine Plains are education and retail. Table 18 shows that educational services account for 36.9 percent of the jobs in Pine Plains, and retail accounts for 15.3 percent. The next largest sectors account for at most half of the jobs that are provided in retail and are agriculture, forestry, fishing and hunting; accommodation and food services; construction; and information.

Table 18: 2015 Primary Jobs in Pine Plains

2015 Primary Jobs in Pine Plains by Industry Sector	Jobs	Percent
Educational Services	260	36.9
Retail Trade	108	15.3
Agriculture, Forestry, Fishing, and Hunting	54	7.7
Accommodation and Food Services	48	6.8
Construction	44	6.3
Information	30	4.3
Wholesale Trade	27	3.8
Administration & Support, Waste Management, and Remediation	26	3.7
Public Administration	25	3.6
Professional, Scientific, and Technical Services	23	3.3
Health Care and Social Assistance	19	2.7
Other Services (excluding Public Administration)	18	2.6
Manufacturing	15	2.1
Finance and Insurance	3	0.4
Transportation and Warehousing	2	0.3
Real Estate and Rental and Leasing	2	0.3

Source: U.S. Census Bureau's OnTheMap Longitudinal Employer Household Dataset, 2015. Note: the following sectors did not have any reported jobs in Pine Plains: Mining Quarrying, and Oil and Gas Extraction, Utilities, Management of Companies and Enterprises, and Arts, Entertainment, and Recreation.

Employers

According to the ArcGIS Business Analyst tool, the largest employer in Pine Plains is the Pine Plains Central School District. The next largest employers have at most one-third of the employees that the School District does. These companies are Liberta Brothers hauling and demolition, Peck's Market, The Hudson Company Flooring, the Town of Pine Plains, and Mashomack Fish and Game Preserve. The top employers are relatively balanced between the private sector and local government or schools. Private sector jobs are also balanced between retail, construction and manufacturing, and hospitality and entertainment.

Table 19: Top Employers in Pine Plains

Business Name	Address	Business Type	Number of Employees
Pine Plains Central School District	Church St	Public School	99
Liberta Brothers	Lake Rd	Construction Services	30
Peck's Market IGA	Church St	Grocery Store	27
The Hudson Company Flooring	Route 199	Manufacturing	25
Town of Pine Plains	Route 199	Government	25
Mashomack Fish & Game Preserve	Route 82	Hunting and Social Club	20
Pine Plains Tractor & Equipment	Church St	Farm Equipment Sales and Service	16
Hammertown Barn	Route 199	Furniture Store	15
Stissing House	S Main St	Restaurant	15
Pine Plains Veterinary	Church St	Medical	12

Source: ArcGIS Business Analyst, 2019

Issues

The overall conditions for farms have not changed since the 2004 Comprehensive Plan. Dairy farmers face pressure from consolidation, declining consumption of milk, and competition from non-dairy milk and cheese substitutes. Farmers are also facing pressure to develop their land for residential uses, which can be attractive given the tough overall trends in agriculture.

The public engagement process for the 2004 Comprehensive Plan included a business survey which was summarized in the 2004 Plan's Appendix. In this survey, business owners noted that the challenges to operating a business in Pine Plains included its relatively low density and low through-traffic. Conversely, the rural character, regional location, and inexpensive rent made it an attractive place to run a business. The overall setting of Pine Plains has not changed since 2004, so these challenges and opportunities are likely to remain. The town of Pine Plains population is relatively flat since 2000, but Town still attracts seasonal visitors and residents.

In the 2004 survey, business owners noted a desire for zoning to help protect the rural charm of Pine Plains. The 2019 Comprehensive Plan Survey and other public engagement have revealed that the zoning code, which was first approved in 2009, may be too rigid in some places for businesses. Another restriction on businesses in the Town is the lack of a sanitary sewer system. Businesses in Pine Plains which produce less than 1,000 gallons per day of sanitary waste must have enough land for their septic tanks and field, and enough land for a 100 percent expansion,

in addition to other setback requirements. The lots in the Pine Plains Hamlet tend to be small, and the septic system requirements can be the limiting factor for how large a business can be.

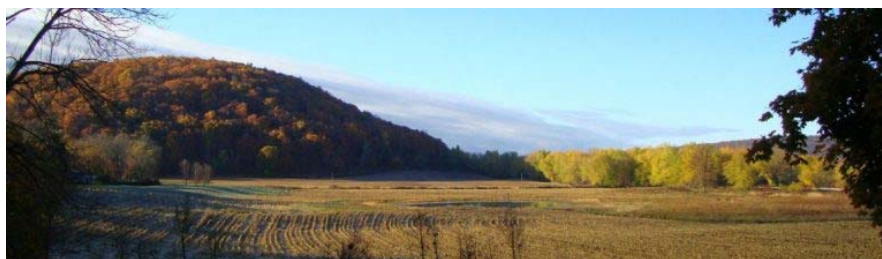
Opportunities

The Comprehensive Plan Update Survey revealed that survey respondents want more businesses in Pine Plains Hamlet. Along Main Street and Church Street, respondents want more retail, including a hardware store, professional services, restaurants and cafes, artisan and craft manufacturing, and a fitness center. Respondents see opportunities for hotels, bed and breakfasts in the residential part of Pine Plains Hamlet, and want businesses in the rural part of the Town to be working farms, related to agriculture, or light industrial. Agricultural related businesses could include nurseries, breweries and distilleries, bed and breakfasts, artisan manufacturing, and small-scale manufacturing.

Tourism is a big industry in Dutchess County, generating 528 million dollars in 2015⁶. Tourism occurs in Pine Plains and expanding it was supported by residents during the public engagement process. Tourism can be an economic opportunity for the Town and improve the quality of life for residents. Respondents to the Comprehensive Plan Survey supported promoting the assets of Pine Plains, including the attractive Hamlet center, hiking trails, and beautiful scenery to increase tourism.

Pine Plains is a rural community that is near the large population centers of New York City and Westchester County. Pine Plains can continue to follow the lead of other municipalities in the Hudson Valley and Catskills regions by leaning into its agricultural and natural heritage and promoting itself as a tourism destination. In addition to outdoor recreation and agritourism opportunities, Pine Plains is also home to the Stissing Theatre which hosts concerts, plays, and other cultural events.

As discussed in the 1987 Dutchess County Plan, promoting tourism in Pine Plains will require protecting the natural landscape and working with neighboring municipalities in ways that are mutually beneficial. In addition to the benefits of land conservation, promoting recreation tourism can expand access and opportunities for Town residents. Agritourism and food and beverage tourism require farms, restaurants, breweries, distilleries or wineries which can employ and serve local residents. Parks and trails can be enjoyed by residents and visitors alike.



Rural landscape in Pine Plains
Source: Inphs.com

⁶ Barry, John W. "10,000 Jobs: The State of Tourism in Dutchess County." Poughkeepsie Journal, 14 Jan. 2017.

Chapter 8. Community Facilities, Infrastructure, Cultural Resources, and Recreation

This section discusses the institutions that serve Pine Plains and its residents, the resources that help make the Pine Plains community unique. The discussion of Community Facilities includes emergency services, Town offices, schools, and the library. Infrastructure includes drinking water, solid waste, and sanitary waste. The discussion of cultural resources includes historic properties, local theater, and houses of worship. Finally, the recreation discussion includes an inventory of parks and recreation facilities in the Town.

Community Facilities

The 2004 Comprehensive Plan stated that the Town's facilities had been moved or updated since the 1987 Comprehensive Plan, and that fire, rescue, and police services were adequate. Figure 15 illustrates the location of the community facilities and institutional uses in the Town.

Fire and Rescue

The Pine Plains Fire District has a station located near the intersection of Route 82 and Lake Road in Pine Plains Hamlet. The station has six garage bays, three of which are in a larger and taller garage extension and three of which are regular size. The 2004 Plan states that the district consisted of 45 active firefighters and rescue members, and it also has additional official volunteers.

Medical Care

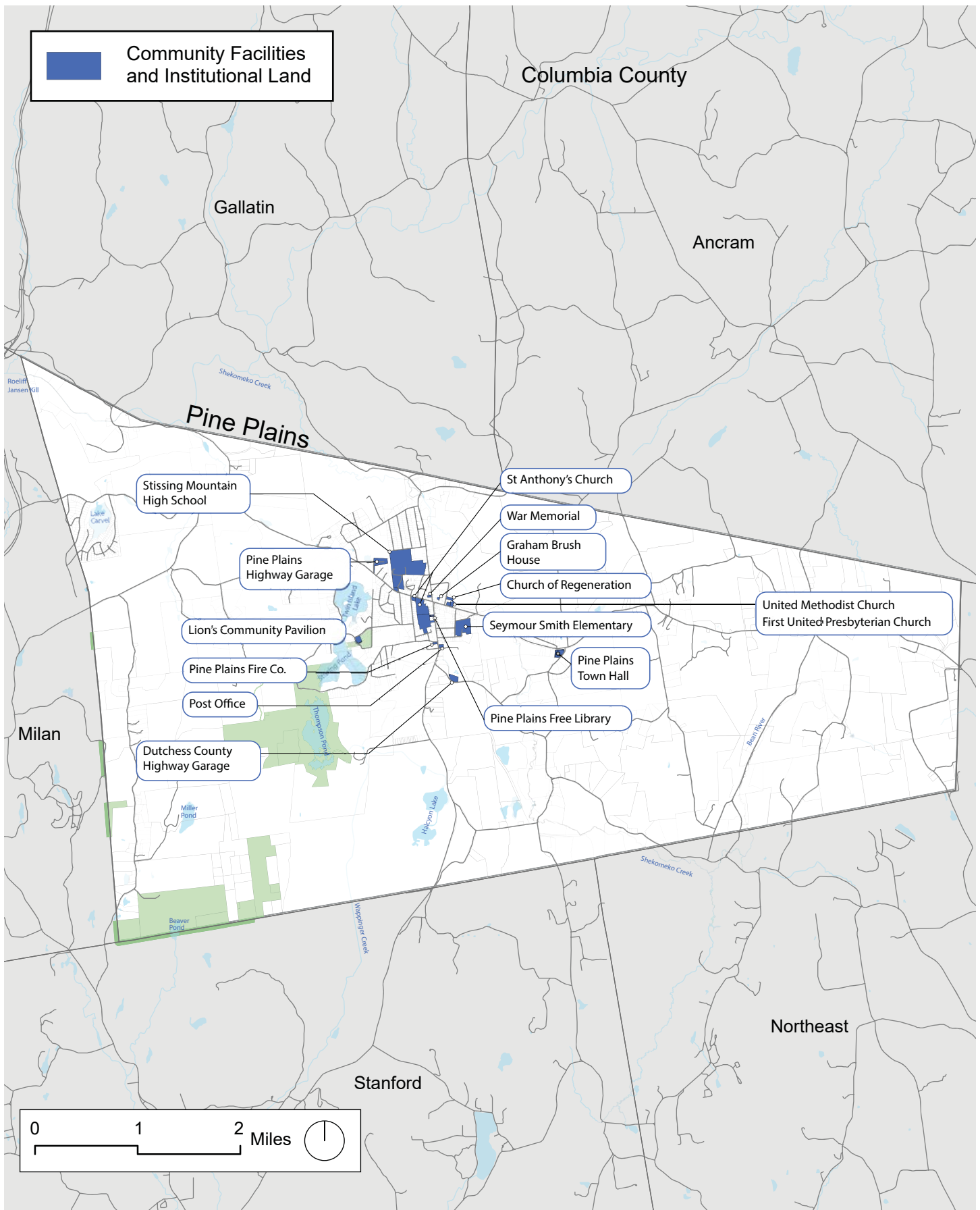
Medical Care is provided by three main hospitals. In Pine Plains, there is the Eastern Dutchess Veterans Affairs Clinic, and outside of Pine Plains, there is Northern Dutchess Hospital in Rhinebeck, and Sharon Hospital in Sharon, Connecticut. The Hudson River Healthcare Pine Plains Health Center closed in May of 2019.

Police

The Pine Plains Police Department is a part-time police force which has four officers, and in 2019 it had an operating budget of \$56,000. The Police Department has three patrol cars and offices located at Town Hall.

Town Hall and Offices

Pine Plains Town Hall is located at 3284 NY-199, roughly 1.25 miles west of the Hamlet center. Town Hall was previously used as a bank and holds the offices and meeting rooms for Town staff. Town Hall is also home to the Justice Court, and the police department. Town employees and officers that operate out of Town Hall include the Supervisor, Clerk, Tax Assessor, and Building Inspector. Town Hall also includes a rear annex which is a temporary building.



Source: Dutchess County

Highway Department

The Pine Plains Highway Department is responsible for the maintenance and repair of 38.75 miles of local roads that are under the jurisdiction of the Town. The department includes one superintendent and four staff members and has an office and garage at 20 Highway Boulevard, which is on the western edge of Pine Plains Hamlet. The Highway Department maintains the roads through road repair and paving, drainage, snow plowing, and right-of-way management. The Highway Department has tractors, snowplows, dump trucks and loaders in its fleet.

Post Office

The Pine Plains Post Office is a full-service location of the United States Postal Service. The office located in the southern part of Pine Plains Hamlet at 7722 S. Main Street and is open Monday through Saturday. In addition to mail and package services, it includes Post Office Boxes and money orders. The Post Office is connected to the Hamlet center with sidewalks and has off-street parking.

Pine Plains Free Library

Libraries in Pine Plains have a history going back to 1798 when the Union Library of Pine Plains was organized. The library is currently part of the Mid-Hudson Library System and is located at 775 S. Main Street. The library building was constructed in 2009 and features programs that go beyond the traditional book-borrowing model. The library also functions as the community center and hosts literary and arts events, technology help, yoga, and small meetings. The second story of the library is a large community meeting room that has a kitchen attached. The library is open Monday through Saturday and is run by a mix of paid staff and volunteers.

Pine Plains Central School District

The Pine Plains Central School District has three schools: the Cold Spring Early Learning Center, Seymour Smith Intermediate Learning Center, and Stissing Mountain Junior/Senior High School. The school district covers the Towns of Pine Plains, Stanford, and portions of other Towns in Dutchess and Columbia Counties. In the 2018-2019 school year, Cold Spring Early Learning Center had 153 students, Seymour Smith Intermediate Learning Center had 254 students, and Stissing Mountain Junior/Senior High School had 491 students. This total enrollment of 898 represents a 24 percent decrease from the 10-year high of 1,182 students in the 2008-2009 school year.



Seymour Smith Intermediate Learning Center.
Source: Pineplains-ny.gov.

Recent changes and updates to the school facilities include cleaning out of the Cold Spring Early Learning Center, installing a solar array at the High School, new propane burners and tanks at two schools, upgrades the heating and ventilation systems, and renovation of the High School auditorium.

Infrastructure

The 2004 Comprehensive Plan featured an extensive review of the Town's infrastructure in the Plan's Appendix. Water, solid waste, and sanitary waste conditions have not drastically changed since 2004, so the portion of the 2004 Plan which addresses infrastructure are located in Appendix B.

Water Facilities

Pine Plains residents get their drinking water from public water supply systems or private wells. The Pine Plains Water Improvement Area is a Town-owned public water supply that serves approximately 880 people in the Hamlet of Pine Plains. It pulls water from an aquifer in the Wappinger Creek drainage basin via two wells that are approximately 110 feet deep. The water is then treated at the pump house before sending it to the residents. The Water Improvement Area is funded through service fees, which currently cost a minimum of \$40.50 per quarter-year⁷.

The 2004 Comprehensive Plan discussed the potential for drinking water contamination due to land use practices near the groundwater wells. In 2009, the Town established zoning districts and land use controls, which include a Wellhead Protection district. The district boundaries are based on a 2007 Wellhead Protection Plan for the Pine Plains Water Improvement Area. Land uses in this district are generally restricted to detached single-family homes and agriculture. Other uses may be allowed by special use permit and/or pending site plan review. Uses that pose a water contamination threat are prohibited. These include waste disposal, surface land application of sewage/sludge (except where permitted by NYSDEC), improper storage of potential contaminants, and drilling for oil and gas wells.

Solid Waste

The Town of Pine Plains does not provide solid waste services to Town residents or businesses, but does provide recycling services to residents. The Town has a recycling drop-off collection facility at the Highway Department property. The 2004 Plan states that private haulers take the waste collected from Pine Plains to the Dutchess County Resource Recovery Facility in Poughkeepsie. Recycling collected in Pine Plains is either taken to the Dutchess County Materials Recycling Facility in Poughkeepsie or to transfer stations in nearby Towns.

Wastewater

All wastewater produced by homes, commercial businesses, and farms in Pine Plains is currently treated by individual septic systems. Using a generation rate of 100 gallons per person, the Town of Pine Plains produces approximately 250,400 gallons of wastewater per day. The Dutchess

⁷ The minimum charge of \$40.50 per quarter is for homes that use less than 9,000 gallons of water. There is an additional fee of \$4.50 per 1,000 gallons over 9,000 gallons.

County Department of Health reviews and approves new septic systems and repair to older systems.

Septic systems that are typical in rural areas include a septic tank and an absorption field. The septic tank provides the initial waste treatment and filters out solids. Liquid waste then flows into the absorption field where it enters the soil. If the system is designed properly, the liquid waste will be treated and does not pose a threat to groundwater quality. Areas with a high water table, steep slopes, or rocky soils are not as suitable for septic systems as well-drained soils in flat areas. Most of the suitable soils in the Town are located in the area of Pine Plains Hamlet. Due to Pine Plains Hamlet's suitable location, the hamlet was granted funding from the Dutchess County's 2019 Municipal Innovation Grant Program to conduct a Central Septic Feasibility Study.

Cultural Resources

Historic Properties

Pine Plains has four historic resources listed on the State and National Register of Historic Places: The Pines, Graham-Brush Log House, Winans-Hunting House, and Melius-Bentley House. All of the historic residences are recognized because of their architectural significance from a range of periods and styles.

The Pines

The Pines is well-known for being the primary residence of the lawyer and former President of Stissing Bank, William S. Eno. It is located within the hamlet of Pine Plains. The late Queen Anne Victorian style building was built in 1878. This three-story structure has been carefully preserved on the exterior and slightly modified on the interior. It was listed on the National Register of Historic Places on September 26, 1983.



The Pines
Source: Hammertown Newsletter

Graham-Brush Log House

The Graham-Brush Log House is located at the intersection of North Main Street and Maple Street. Originally, this 0.4-acre parcel was part of a larger 259-acre parcel owned by Lewis Graham followed by Alfred Brush in 1829. The one and a half story structure was built around the late 18th century. Graham-Brush Log House was listed on the National Register of Historic Places on July 22, 1999, for both its architectural significance and ties with events that have shaped history.



Graham Brush Log House
Source: Wikimedia Commons User Quasarjarvis

Winans-Huntting House

The Winans-Huntting House is located near the hamlet of Bethel along Bethel Cross Road. The parcel was originally a 150-acre farm that was reduced to the 2.88-acre parcel in the 20th century. The original structure was built in approximately 1774 and later expanded into a two-story structure in 1810. Winans-Huntting House is recognized for its architectural significance as it provides lasting remnants of early Republic architectural style. It was listed on the National Register of Historic Places on May 15, 2017. Currently, the historic home continues to serve as a single-family residence.

Photo 1: Winans-Hunting House



Winans-Hunting House
Source: Jennifer Betsworth & Bill Krattinger, 2016

Melius-Bentley House

The Melius-Bentley House is located on Mt Ross Road in the northwestern portion of the Town of Pines Plains. This single-family residence was built in three stages from 1717-1802. The parcel was designed and owned by the architect Johannes Jacob Melius followed by Henry Bentley in 1802. The one and a half story structure is characterized by its early Republic architectural style. The 24.8-acre parcel was listed on the National Register of Historic Places on August 11, 1982, for its architectural significance. Currently, the historic home continues to serve as a single-family home.



Melius-Bentley House
Source: Byrne R. Fone, 1981

Houses of Worship

There are at least four houses of worship in Pine Plains. Churches located in Pine Plains Hamlet include the Church of Immaculate Conception/St. Anthony Roman Catholic Church, First United Presbyterian Church of Pine Plains, Episcopal Church of the Regeneration, and Pine Plains United Methodist Church.

Theater and Arts

Pine Plains has a thriving arts scene, especially for a Town its size. The Stissing Theater Guild has put on plays at the Stissing Mountain Junior/Senior High School each spring since 1989. The plays can be large production, sometimes including 100 students and staff from the school district in the cast and orchestra. The auditorium at the high school is being renovated and is expected to open in December 2019.

The Stissing Center is a historic arts and culture venue in Pine Plains that was previously known as Memorial Hall. It was constructed in 1915 and hosted shows, theatre, and social events until it became a movie theater, and later a commercial space for small businesses. The building was purchased in 2014 by local residents and was donated to newly-formed Pine Plains Memorial Hall nonprofit in 2015. The building has undergone a complete renovation and expects to open in 2019. The Stissing Center plans to be an artistic anchor and economic engine for Pine Plains and the surrounding communities, and may also be a way to bring the primary residents and part-time residents together.



Historic Photo of Memorial Hall
Source: lnphs.com

The art community in town is supported by the Gallery and Goods art gallery and the ChaNorth artist residency. Gallery and Goods is an art gallery located in a former community hall on Church Street in Pine Plains Hamlet and features works by local artists and handmade crafts. ChaNorth is an artist residency for ChaShaMa, which is an arts organization that connects artists with places to work on their craft. The ChaNorth residency is located at 2600 Route 199 and hosts five to seven artists for a month at a time during the summer season. While staying at ChaNorth, artists interact with the Pine Plains community via talks at the library and open studio events.



Gallery and Goods Art Gallery

Parks and Recreation

Open Space and Recreation Facilities

Parks, recreation, and open space are integral to the identity of Pine Plains. Although Stissing Lake Park is the only municipal park in Pine Plains, residents and visitors can hike and walk around Stissing Mountain and Thompson Pond, and use sports fields and playgrounds at the local schools. Table 20 describes the parks and open space resources in the Town.

Table 20: Open Space and Recreation Facilities

Facility	Acreage	Ownership	Description
Stissing Lake Park (Town Beach)	28	Public	Beach, swimming, baseball/softball, basketball, pavilion, ice rink in winter
Stissing Mountain State Multi-Use Area	590	Public	Hiking, camping, fishing, hunting/trapping, cross-country skiing, kayaking
Friends of Stissing Landmarks (Fire Tower)	43.3	Semi-Public	Hiking
Thompson Pond Preserve	530	Semi-Public	Hiking, birdwatching
Stissing Mountain High School	52	Public	Baseball/Softball fields, tennis, track, soccer/football field
Seymour Smith Intermediate School	13.5	Public	Playgrounds, field

Source: 2004 Comprehensive Plan, The Nature Conservancy (2019)

Stissing Lake Park is owned by the Town of Pine Plains and has a beach with a lifeguard where residents can swim and kayak in Stissing Lake. It also provides swimming and kayaking facilities, baseball and softball fields, basketball courts, a pavilion, and an open-air ice rink in winter.

Stissing Mountain consists of many land parcels, some of which are owned by New York State and The Friends of Stissing Landmarks. Stissing Mountain Multi-Use Area is partially in Pine Plains, Milan, and Stanford. It is owned by New York State and features 590 acres of outdoor space for camping, hunting, fishing, hiking, cross-country skiing, and snowshoeing. Friends of Stissing Landmarks owns 43.3 acres of land around Stissing Mountain, which includes the southwest wetland cove of Stissing Lake, a trail to the cove, and the Stissing Mountain Fire Tower. The Stissing Mountain Fire Tower was constructed during the Great Depression by the Civilian Conservation Corps and has been owned and maintained by the Friends of Stissing Landmarks since 1989.

The Nature Conservancy owns 530 acres at the Thompson Pond Nature Preserve, located on the eastern side of Stissing Mountain. The nature preserve includes hiking trails and ample opportunities for bird watching and exploring the biological diversity that exists at the ancient water body. Thompson Pond, like Stissing Lake and Twin Island Lake, was formed by a melting glacier approximately 15,000 years ago.

Stissing Mountain Junior/Senior High School and Seymour Smith Intermediate School are both owned by the Pine Plains Central School District. Stissing Mountain High has baseball and softball

fields, tennis courts, a track, and a football/soccer field. Seymour Smith has playgrounds and an open field.

Recreation Programming

The Pine Plains Parks and Recreation Department coordinates organized sports teams and recreation events for the Pine Plains community. Popular sports include baseball, softball, basketball, soccer, track, and flag football. The Town also operates a summer day camp for children in elementary and middle school. The camp generally runs for six weeks beginning in July and includes sports, arts and crafts, field trips, and swimming.

Pine Plains Recreation Master Plan

The Pine Plains Recreation Master Plan is a master plan for the Town-owned Stissing Lake Park. The plan was produced in 2010 and features illustrations showing the locations of new trees and landscaping, baseball and tee-ball fields, a skate park, and expanded play area, and additional parking spaces. The plan also includes a proposed concession stand, bathrooms, and storage building to serve park visitors.

2017 Pine Plains Hike and Bike Trails Report

In 2017, the Town of Pine Plains created a Hike and Bike Trails report that envisioned connecting existing trails and open space with Pine Plains hamlet and other locations in the Town. The report includes vision and goals, model easements, potential funding sources, and implementation strategies. The Hike and Bike Trails report was adopted as an addendum to the 2004 Comprehensive Plan.

This plan's vision for the future of Pine Plains is centered around trails providing safe connections throughout the town and opportunities for residents to walk, hike, and bike as a way to enjoy nature. The vision also includes seeing trails as a way to encourage tourism and to boost economic development in Pine Plains. The Town can use existing rail beds, road shoulders, and sidewalks to expand the network of existing trails. The recommendations listed in the report include creating a Friends of Pine Plains Trails committee, creating marketing materials, and using the concept map, shown in Figure 16, during Planning Board review.

Issues

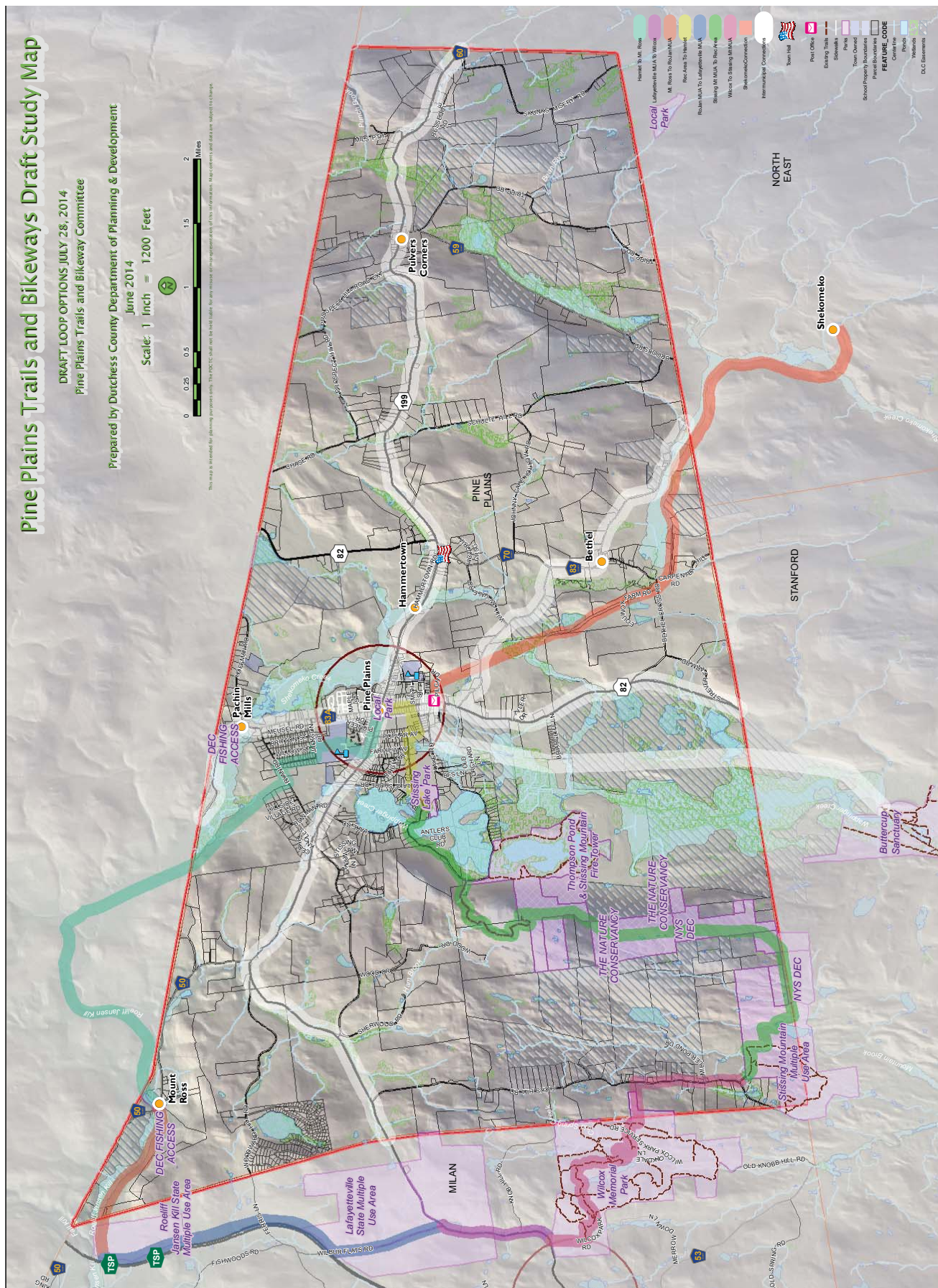
Town Hall is currently located outside of the Hamlet center and is too small to fulfill its function as local government offices and community meeting space. The temporary building that serves as the rear annex is nearing the end of its life span. Comprehensive Plan Update Survey respondents indicated that they would like to see Town Hall in the center of Pine Plains Hamlet, but some respondents did not want it moved in the place of existing businesses.

Pine Plains Trails and Bikeways Draft Study Map

DRAFT LOOP OPTIONS JULY 28, 2014
 Pine Plains Trails and Bikeway Committee
 Prepared by Dutchess County Department of Planning & Development
 June 2014
 Scale: 1 Inch = 1200 Feet



This map is intended for planning purposes only. The DEC is not to be used for any other purpose. For more information, please contact the DEC or the Dutchess County Department of Planning & Development.



Source: Town of Pine Plains

The Dutchess County Department of Health has septic system design standards that include land set aside for a 100 percent expansion of the absorption field. On-site septic systems and the expansion requirement limit residential and commercial density in the Pine Plains Hamlet center, where lots tend to be smaller. There are many reasons to promote new growth in the hamlets instead of in rural areas, but the limitations caused by on-site septic systems make this a challenge.

Recreation facilities and trails are currently clustered around Stissing Mountain, which makes sense considering Pine Plains Hamlet as the center of Town, and Stissing Mountain is the defining feature in Pine Plains. As discussed in the 2017 Hike and Bike Trails Report, new paths and trails and improved road shoulders particularly on County and State highways, should expand opportunities for residents of Pine Plains to enjoy access to all parts of the Town.

Chapter 9. Transportation

Roadway Network

Most people and freight move around and through Pine Plains via automobile and truck. New York State, Dutchess County, and the Town of Pine Plains have jurisdiction over different roads within the Town. Figure 17 shows the government jurisdiction for each road. In general, the larger a road is, and more traffic the road receives, the higher the level of government jurisdiction. As part of having jurisdiction over the road, the State and County make decisions about roadway expansion and reconfiguration, in addition to maintaining the roads.

Functional Classes

In addition to government jurisdiction, roads are classified by their functional class. In Pine Plains, there are minor arterials, major collectors, minor collectors, and local roads. The Taconic State Parkway is an arterial expressway. Arterials are meant for higher-speed travel between locations that are further apart, and collector routes are meant to connect vehicles from local routes to arterials. Local routes serve the final destination of a journey, which in Pine Plains is usually a residence or business along a quiet street.

State Roads

Route 199 and Route 82 are both under State jurisdiction, and provide connections to locations east and west, and north and south of the Town, respectively. Route 199 connects Route 44 in Connecticut to the New York State Thruway and Kingston on the west side of the Hudson River. Route 82 connects Dutchess County to Columbia County. Route 82 also links with routes that connect to other Dutchess County communities. State Routes are marked with black and white signs that feature the Route number.

The Taconic State Parkway is located west of the Town limits but is a major highway that links Pine Plains and Dutchess County to New York City to the south and Interstate 90 to the north. Interstate 90 connects to Albany to the west and Massachusetts and Boston to the east.

County Roads

In Pine Plains, County roads are marked by a blue pentagon sign that lists the route number in gold. The five County roads travel through Pine Plains are Mt. Ross Road (Route 50), North Main Street (Route 83A), Bean River Road (Route 59), Righters Corners Road (Route 70), and Amenia Road (Route 83). These routes connect Pine Plains to Columbia County to the north and the Town of Northeast to the south.

Local Roads

The local roads in Pine Plains are any public road that is not maintained by New York State or Dutchess County. The Town of Pine Plains Highway Department is responsible for resurfacing and repairing these routes and clearing them of snow. In a rural community like Pine Plains, the Average Annual Daily Traffic is not expected to be very high.



Traffic Volume

Figure 17 also shows the Average Annual Daily Traffic, as listed by the New York State Department of Transportation in 2016. Pine Plains is a rural community, so most roads are not very heavily trafficked, especially in comparison to the Taconic State Parkway and other routes used for commuting and interstate travel. The most heavily trafficked roads in Pine Plains are Route 199, followed by Route 82.

Previous Planning Efforts

The following plans are discussed in order to show the good work that has been done by the Town of Pine Plains and the Poughkeepsie-Dutchess County Transportation Council. These plans provide relevant concepts that are compatible with the vision and goals of this Comprehensive Plan Update. The purpose of these plans is not to mandate specific designs but to capture design ideas for the future. However, portions of these plans may now be out of date, and other parts of the plans may need to be reconsidered.

Moving Dutchess 2

Moving Dutchess 2 was created by the Dutchess County Transportation Council and is the long-range transportation plan for Dutchess County. The Plan was approved in 2016 and will be updated every five years. The goals of the Moving Dutchess 2 include improving road safety, reducing traffic congestion, and maintaining transportation infrastructure. Additional goals include increasing public transit use, promoting walking and bicycling, and reducing the environmental impacts associated with transportation.

Moving Dutchess 2 includes goals that pertain to pedestrian and roadway infrastructure in Pine Plains. The plan has identified 14 pedestrian improvement projects, 3 bicycle and multi-use trail opportunities in the Town. The plan also identified Route 199, and two bridges on North Main Street as priorities for maintenance.

Pine Plains Town Center Pedestrian Center Plan

The Pine Plains Town Center Pedestrian Plan was published by the Poughkeepsie-Dutchess County Transportation Council⁸ and was examined by the Town Board in 2014. It includes a discussion of the Pine Plains 2004 Comprehensive Plan, existing zoning regulations, and an inventory of sidewalk conditions in the Town. The planning process included a survey and public workshop and resulted in a three-phase sidewalk improvement strategy and policy recommendations.

Phase 1 of the sidewalk improvement strategy includes repair of existing sidewalks and the addition of new crosswalks, signage, pavement marking, and bicycle parking. Phase 2 of the strategy includes creating new sidewalks in the vicinity of the Stissing Mountain High School and Pine Plains Hamlet, in addition to crosswalks and signage. Phase 3 includes constructing new sidewalks throughout the Hamlet.

⁸ The Poughkeepsie-Dutchess County Transportation Council is now the Dutchess County Transportation Council.

Pine Plains Hamlet Center Master Plan

The Pine Plains Hamlet Center Master Plan is focused on both transportation and economic development in the Pine Plains Hamlet center. The Plan calls for new sidewalks and on-street parallel parking facilities on Main Street and Church Street. Additionally, the Plan proposed new infill development in the Peck's Market parking lot, on a lot south of the clock tower, and in the southeastern corner of the Main Street and Church Street intersection which is currently open space. This open space would be replaced with a new park between The Stissing Center and the Stissing House restaurant.

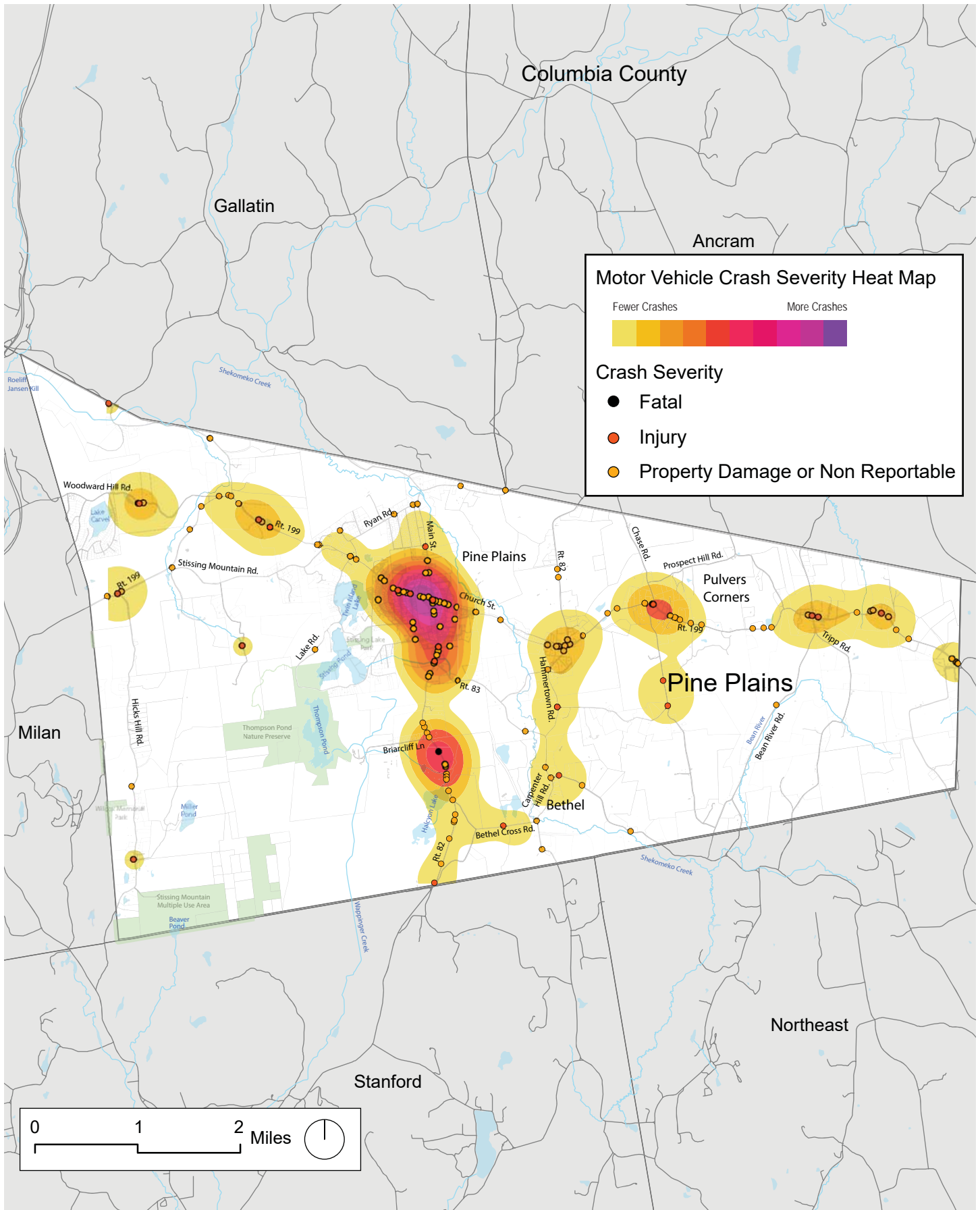
Road Safety

Traffic data from 2011 to 2013 revealed that the Town of Pine Plains had a three-year average of 13 crashes per year which resulted in injury or death⁹. When this average rate is divided by the amount of road mileage in the Town of Pine Plains, the result is 0.2 crashes that result in a fatality or injury per road mile. This rate is comparable to the rates in the Towns of Milan, Clinton, Stanford, and Washington. Moving Dutchess 2 discussed the intersections and roadways that had the most crashes in the part of the county that includes Pine Plains; no intersections or roadways in Pine Plains were listed.

From 2016 to 2019, New York State Department of Transportation (NYSDOT) crash data indicated that Pine Plains has experienced a total of 165 crashes. Of the 165 crashes, 1 was fatal, 23 resulted in injuries (4 of which were considered serious), and 141 resulted in property damage. The location of these crashes are shown on Figure 18. Of the 165 reported crashes, there were 2 crashes that resulted in a pedestrian or bicyclist injury. The injuries occurred along the Route 82 and Route 199. The single fatality occurred along Route 82 near Briarcliff Lane in a single-car collision. Similar to other rural areas, the majority of the crashes in Pine Plains were single-vehicle crashes due to collisions with animals or fixed objects such as poles.

In 2017, NYSDOT identified a small segment of Route 199 between Town Center Road and Route 82 & Hammertown Road as a Safety Deficient Location. This segment was designated as a Safety Deficient Location because it experienced crash rates exceeding the average rate for a similar roadway type. This part of Route 199 had a total of six crashes in 2017, which resulted in two serious injuries including one to a bicyclist. The vast majority of crashes were located in Pine Plains Hamlet at the intersection of Church Street and Main Street. There were seven crashes at this intersection in 2017, one of which resulted in a serious injury. Figure 18 is a "heat map" which shows the severity of crashes where purple represents the most severe crashes and yellow represents the least severe crashes.

⁹ Vehicle crash data referenced in Moving Dutchess 2 comes from the New York State Governor's Traffic Safety Committee (GTSC).



Source: NYS DOT, 3-year crash analysis (2016-19)

Transit Connections

Rail

There is no fixed-rail transit service to Pine Plains. The two most useful Metro-North commuter railroad stations for Pine Plains residents are the Wassaic Station on the Harlem Line and the Poughkeepsie Station on the Hudson Line. Trips to New York City from Wassaic take about two hours and ten minutes on a through train, otherwise, riders may have to transfer to a Grand Central Terminal-bound train at Southeast. Service from Poughkeepsie to Grand Central Terminal takes approximately one hour and thirty-five minutes on a through train. Rhinecliff and Poughkeepsie both have Amtrak stations that connect to trains bound for New York City, Albany, Vermont, Niagara Falls, Montreal, and Chicago.

Bus Service

Dutchess County Public Transit bus service serves the Villages of Rhinebeck and Red Hook but no bus routes currently Pine Plains or the neighboring Towns. Dutchess County does have Flex bus service, which is aimed at helping people who live in the more rural parts of the county. Once residents of Pine Plains are registered with Dutchess County they can request rides to and from anywhere in the county between the hours of 9:15 am and 1:15 pm Monday through Friday. The North East Community Center also operates a free dial-a-ride transit service that residents of Pine Plains, Millerton, Stanford, Millbrook, Amenia, and Dover to any destination in Dutchess County or to a hospital in Sharon, Connecticut. Reservations for this service must be made at least three days in advance.

Pedestrian and Bicycle Facilities

Pedestrian Facilities

Pine Plains Hamlet is a traditional hamlet center that features a mix of uses in close proximity to each other, which creates an environment that is very friendly to walkers. The Poughkeepsie Dutchess County Transportation Council published the Pine Plains Pedestrian Center Plan in 2014, which included an inventory of sidewalk facilities in the Town. There are sidewalks along Main Street and Church Street, and on some smaller connecting roads in residential areas, as shown in Figure 19. The Plan stated that approximately 85 percent of the sidewalks in Pine Plains were in “Excellent or Good” condition, and 13 percent were in “Fair condition”.

Pedestrian facilities in Pine Plains Hamlet were one of the focuses of the Pine Plains Downtown Revitalization Plan. Figure 20 shows the Downtown Revitalization Plan, which includes expanded sidewalks on the south side of Church Street and the west side of Main Street. The Plan also includes striping on-street parking spaces in order to help slow down cars and trucks that travel along Main and Church Street.

Bicycle Facilities

There are currently no state-designated bicycle routes in Pine Plains. The 2017 Hike and Bike Trails Report identified bicycling opportunities on Route 199, Route 82, and on local roads. Bicycling on these roads would require improved road shoulders.



Source: Poughkeepsie-Dutchess County Transportation Council



Source: Town of Pine Plains

Parking

Most parking in Pine Plains occurs in off-street lots. Parallel on-street parking is available along Church Street and Main Street, but the parking areas are not striped, and instead, motorists park their vehicles on the outside portion of the wide lane. Off-street parking is available in the parking lot on Main Street near the clock tower, and north of the intersection of Main Street and Church Street in Pine Plains Hamlet. There are no posted time restrictions for the on-street or off-street municipal parking spaces.

Airports

Hudson Valley Regional Airport, located in the Town of Wappinger, provides executive travel and general aviation service to residents of Dutchess County. Residents of Pine Plains that are flying internationally or to international airports fly out of Albany International, Stewart International in Newburgh, Bradley International in Hartford, and New York City area airports like LaGuardia, John F. Kennedy, and Newark.

Issues

Due to its rural nature, traffic volume is not a big issue in Pine Plains; however, there are some traffic conditions that are of concern. Due to their status as arterial roads, Church Street (Route 199) and Main Street (Route 82) receive traffic from heavy trucks. These large trucks do not create a welcoming atmosphere for pedestrians due to their loud engines and imposing figure. The speed limit in the Hamlet center may also be an issue; the speed limit on Main Street and Church Street is 35 miles per hour approaching the Hamlet center, which is higher than 25 miles per hour which is standard in pedestrian-oriented areas. Another traffic-related issue is drivers cutting through residential and side streets to avoid traffic or because taking a local residential street is faster.

Pine Plains currently does not have any State- or County-designated scenic roads or byways. The 2004 Comprehensive Plan and public engagement for this Plan have indicated that residents find many roads in the Town to be scenic. Designating a road a scenic byway can benefit Pine Plains through increased tourism and by adding another reason to promote resource conservation. In addition, the Town could use the designation to help guide development along the route in a way that enhances the route's scenic nature.

Chapter 10. Vision and Strategies for Pine Plains

Under the Town's strong leadership within the past fifteen years, Pine Plains has actively worked towards achieving the proposed recommendations outlined in the 2004 Comprehensive Plan. A majority of the recommendations were successfully implemented, and the remaining recommendations continue to be worked on.

The vision and strategies for the Pine Plains Comprehensive Plan Update are the outcome of a six-month planning process led by the Comprehensive Plan Committee. The Comprehensive Plan Update vision and strategies seek to complement and build upon the work Pine Plains has done since the adoption of the 2004 Plan identified in the previous plan.

2004 Comprehensive Plan Vision

The vision from the 2004 Comprehensive Plan was the result of an extensive public engagement process which included a public survey, a business survey, and workshops. The highlights below have been distilled from the vision statement in the 2004 Comprehensive Plan as reinforced by the 2019 engagement process:

- Preserve rural character
- Promote agriculture, open space, and recreation
- Support a prosperous Hamlet center
- Provide quality municipal services
- Maintain housing opportunities

Comprehensive Plan Update Vision

The vision for the Comprehensive Plan Update is based on a review of the 2004 Comprehensive Plan vision and public engagement including a public workshop, public survey and survey open house, and a planning and zoning focus group meeting. This Comprehensive Plan Update vision is aspirational and is meant to guide the overall direction of the future of Pine Plains.

Vision Statement

"The Town of Pine Plains continues to preserve its unique rural character while providing a healthy quality of life for all residents. Pine Plains and its strong community leadership achieves this by continuing to foster a strong hamlet center, promoting local businesses, protecting agriculture, conserving open space, and expanding recreation opportunities. Pine Plains Hamlet continues to prosper and serve as a main economic driver that provides the Town with local small businesses for community needs as well as employment opportunities. Pine Plains seeks to engage in smart growth that will protect these assets while building on them as the Town's strengths. Pine Plains encourages growth in the Hamlet areas in ways that respect the Town's character, and strives to address community needs including housing options for all residents, pedestrian-friendly streetscapes, and local businesses."

Goals and Strategies for the Comprehensive Plan Update

The first step in creating goals and strategies for the Comprehensive Plan Update is to review the goals and strategies from the 2004 Comprehensive Plan. Pine Plains has worked hard to achieve many of the goals from the 2004 Plan, but some remain.

Review of 2004 Comprehensive Plan Goals

Land Use and the Environment

The 2004 Comprehensive Plan included a goal of updating and strengthening existing design standards. The Town of Pine Plains achieved this goal by creating and implementing zoning districts and development standards. Another goal was to designate Wellhead Protection Area and Management regulations, which was reached through the adoption of the Wellhead Protection zoning district.

Visual Resources

One goal identified in the 2004 Comprehensive Plan was to identify scenic locations and establish scenic routes. This has been discussed by the Conservation Advisory Council, but the scenic routes have not been officially designated. Another goal was to initiate a Main Street program for the hamlet areas. The Town has not been successful in receiving grants under this program from the New York State Department of Homes and Community Renewal partly because of how the program is administered.

Agriculture

Goals within the agriculture section of the plan discussed exploring the use of tax incentives and to encourage agriculture. This goal is ongoing and will continue to reflect current laws. The plan also included a goal to optimally site new residences to protect farmlands, which the Town addressed through zoning and subdivision regulations.

Historic Preservation and Housing

The Town identified a goal to initiate grant writing to obtain funds for historic preservation. This remains an ongoing process. Another historic preservation goal was to initiate a program to create an inventory and list properties for National and State Historic Registers. The Town of Pine Plains previously made substantial progress to this goal with the completion of blue forms for all the eligible historic properties but needs funding to complete the application process.

Housing

The 2004 Comprehensive Plan included a goal of updating development standards to encourage affordable housing conditions. Pine Plains created an affordable housing policy with requirements for developments with over ten residential lots or dwelling units. This goal is an ongoing process where the Town is actively reviewing and amending existing local laws as necessary.

Recreation, Community Services, and Transportation

The 2004 Comprehensive Plan called for the development of a recreation plan. Pine Plains has created a master plan for Stissing Lake Park but has not yet created a more comprehensive Parks, Open Space, and Recreation Plan. A goal for community services was to develop a Solid Waste Plan. A Solid Waste Plan was not developed, and solid waste disposal is still left to private carters, with the Town providing a limited recycling drop-off facility. The Town of Pine Plains was awarded a grant in August 2019 to conduct a central septic system feasibility study, which will help determine the future growth in the Hamlet areas.

Comprehensive Plan Update Goals and Strategies

The goals and strategies for this Comprehensive Plan Update were the direct result of outreach to and engagement with the residents of Pine Plains. Public discussion at the Comprehensive Plan Update Workshop directed the Committee to further the goals from the 2004 Comprehensive Plan and to add new goals to reflect the Town's current condition. The goals are supported by strategies that would help the Town achieve them.

Land Use and Zoning

Goal 1. Update the Comprehensive Plan every 10 years.

The Town of Pine Plains has worked very hard to improve Town services and overall communication within the Town. The Town should continue these efforts by updating the Comprehensive Plan every 10 years. This allows the Town to review policies and other municipal documents to ensure they are relevant for the conditions of that decade.

Goal 2. Modify the existing zoning regulations to reflect current conditions and support residents and local businesses.

The purpose of this goal is to have zoning districts that reflect the existing land uses in Pine Plains and to allow residents and business owners to reasonably use their property without having to seek a variance.

Strategies

- Review the current zoning regulations, including minimum yard setbacks in the Hamlet areas, to see if they are too restrictive for property owners.
- Study the existing uses in the Hamlet areas, and update zoning regulations to minimize the number of properties that are non-conforming.

Goal 3. Strengthen the enforcement of zoning and building codes.

Enforcing Town building and zoning regulations is important to protect the health, safety, and general welfare of residents of Pine Plains. Additionally, it helps preserve the look and feel of the Town.

Strategies

- Continue to support enforcement capabilities by providing adequate training and expanding staff resources when necessary.
- Educate residents and business owners about zoning regulations and the application and planning process so they can be knowledgeable before planning new buildings or building expansions.

Goal 4. Identify opportunities for potential future development in the Pine Plains Hamlet.

Pine Plains Hamlet has a few key parcels that may be under pressure for development in the coming years. This goal directs the Town to think about what uses it wants for these parcels.

Strategies

- Establish a study group to explore options for important properties in the Town. These properties may include the St. Anthony's lot near the intersection of Main Street and Church Street, Dillinger Farm, the 20-acre parcel on Lake Road, and the 70-acre parcel at the intersection of Routes 82 and 83.

Natural Resources

Goal 5. Preserve the beautiful natural heritage of Pine Plains and improve the quality of natural resources in the Town.

Pine Plains is well-known for its natural beauty and bucolic nature. Preserving these resources is important not only to protect the identity of the Town but also to promote tourism and improve environmental quality.

Strategies

- Promote the conservation efforts of nonprofits, conservancies, and government.
- Support a natural resources inventory by Pine Plains' Conservation Advisory Council.
- Continue to consult Hudsonia Significant Habitats report maps in planning reviews.
- Review town ordinances to see how they can help improve the surface water quality of streams and lakes in the Town.
- Continue to partner with neighboring municipalities and New York State to protect resources that are regional value.
- Explore scenic route designations for portions of the Town. Identified scenic areas can be protected with more restrictive zoning.

Goal 6. Continue to improve the Town's climate resilience and transition towards renewable energy sources.

Pine Plains is a designated Clean Energy Community as of June 2019 as certified by the New York State Department of Environmental Conservation. The Town has received a grant to install an electric vehicle charging station in the Hamlet center, and has replaced all Town street lighting with LED bulbs. The purpose of this goal is to leverage this status to use guidance from the State to improve the Town's resiliency to natural disasters and extreme weather events and to continue to use renewable energy where it makes sense for Pine Plains.

Strategies

- Continue to seek grants to assist in funding clean energy initiatives as a designated Clean Energy Community
- Review Town policies and zoning codes to improve resiliency to the effects of Climate Change.

Housing

Goal 7. Promote affordable and workforce housing options that benefit all ages and income levels.

Pine Plains, like other neighboring rural communities, does not have enough affordable housing options for its residents. The Town can promote affordable housing and make sure that local regulations are receptive to housing opportunities.

Strategies

- Explore opportunities for affordable housing options including vacant parcels and adaptive reuse.
- Review the zoning code to ensure it allows various types of affordable housing that would be consistent with the development patterns in Pine Plains and other nearby rural communities.
- Review regulations and pursue programs that balance housing opportunities for both renters and homeowners.
- Encourage the construction of accessory dwelling units to increase the number of rental units in Pine Plains.
- Site affordable housing options in the Hamlet areas to improve access to Town resources and to conserve farmland and open space.

Goal 8. Promote housing options for seniors.

Pine Plains has an aging population that wants to stay their community. This goal encourages the Town find ways to provide housing options for seniors and to support them as they age.

Strategies

- Explore tax incentives and study unique ways to provide senior affordable housing to address the aging population of Pine Plains.
- Promote senior housing opportunities on a range of scales. This includes accessory dwelling units on single lots and supportive housing with multiple residences.
- Study zoning changes that could facilitate the development of independent and assisted senior living facility to the community.

Economy

Goal 9. Promote agriculture both as an active part of the Pine Plains economy and as part of the Town's heritage.

Agriculture has been the defining industry in Pine Plains for hundreds of years. Farms provide jobs for Town residents, help preserve open space, and are assets for tourism.

Strategies

- Continue to ensure local laws are farm-friendly.
- Maintain zoning in rural areas that promotes agriculture and conservation.
- Encourage development in the Hamlet areas in order to preserve outlying areas of the Town.
- Revitalize the Agricultural Advisory Committee to act as a liaison between the Town and the agricultural community. This committee could also promote agritourism and activities described in the 2015 Dutchess County Agricultural and Farmland Protection Plan.

Goal 10. Support local and independent businesses in Pine Plains.

Pine Plains has a traditional town center with local and independent stores that contribute to the identity of the Town and its high quality of life. The purpose of this goal is to help local stores that are under pressure by e-commerce retailers and national chains.

Strategies

- Create a business inventory and study the commercial uses in Pine Plains to see how the Town can support them.
- Explore grants that provide financial support for local small businesses, and assist the business community with marketing and beautification efforts.
- Implement the Downtown Revitalization Plan which includes aesthetic improvements to storefronts, creating sidewalks, improving parking lot layouts, adding street trees along Church Street, and creating continuous storefronts.
- Repurpose old and historic buildings in the Town for commercial use. These include former dairy farms that can be used for other food and beverage businesses like breweries, vineyards, and catering halls.
- Encourage new retail that complements existing retail and the needs of Pine Plains.
- Explore the demand for shared work spaces and other workplace trends so Pine Plains can continue to attract a diverse professional work force.
- Support adult education programs that will improve the quality of the Pine Plains work force.
- Encourage light manufacturing uses in the Town and study whether the creation of a light manufacturing zoning district is needed.

Goal 11. Promote tourism in Pine Plains in ways that reinforce the character and identity of the Town.

Tourism has been seen as an economic opportunity for Pine Plains for many years. This goal strives to promote tourism that will reinforce what makes Pine Plains an attractive tourism destination while integrating the tourism economy with local residents.

Strategies

- Cultivate a tourism identity focused on Pine Plains' strengths: agriculture, natural resources, and arts and culture events.
- Review regulations and ordinances to ensure they support agritourism and hotel/lodging where they make sense for Pine Plains.
- Partner with neighboring municipalities to protect natural resources and promote these resources as regional tourism destinations.
- Designate scenic routes and locations.

Community Facilities, Infrastructure, Cultural Resources, and Recreation

Goal 12. Relocate Pine Plains Town Hall into Pine Plains Hamlet.

Pine Plains Town Hall is located east of the Pine Plains Hamlet in an old building that is no longer adequate for the needs of the Town. Siting Town Hall in the Hamlet center would make Town government more accessible to residents, and would help concentrate communal activity in the Hamlet center and contribute to the vibrancy of Pine Plains.

Strategies

- Study potential locations for Town Hall, and ensure these locations do not displace an existing business.
- Explore creative funding mechanisms to purchase land or repurpose an existing building.

Goal 13. Promote the development of a central septic system.

Buildings in Pine Plains currently treat their waste with on-site septic systems. This limits the residential density and size of businesses that can operate in the Town. This goal promotes a central septic system as a method of economic development and residential growth in Pine Plains Hamlet.

Strategies

- Review the conclusions of the Central Septic System Feasibility Study to see if they align with the goals of smart growth and economic development.
- Explore potential locations for combined septic facilities in Pine Plains Hamlet.
- Apply for grants to fund the potential combined septic system.

Goal 14. Protect cultural resources in ways that preserve the character of Pine Plains.

Pine Plains has beautiful historic buildings that help create the identity and character of the Town. This goal strives to protect these resources as individual buildings, but also as integral pieces of Town's heritage.

Strategies

- Encourage the creation of a National Register historic district for Pine Plains Hamlet.
- Continue searching for grants to fund historic preservation efforts, including following up on the 1986 Historic Resource Inventory.
- Collaborate with local historic preservation groups, schools, and civic organizations to promote historic preservation efforts and education.

Goal 15. Optimize the impact of the newly renovated Stissing Center as a positive cultural growth driver.

With the renovation of The Stissing Center, Pine Plains has the opportunity to be a cultural destination for the area. This goal seeks to use that positive momentum and existing cultural attractions to grow arts and culture in Pine Plains.

Strategies

- Support The Stissing Center as it creates programming that attracts residents and visitors from surrounding communities.
- Partner with local and regional arts groups to host events in Pine Plains, and advertise arts events on local arts media.
- Promote local artists and art galleries in tourism and marketing materials.

Goal 16. Expand recreation opportunities for Pine Plains residents.

Pine Plains has recreation facilities at Stissing Lake Park, Stissing Mountain Junior/Senior High School, and Seymour Smith Elementary School. The Town can use these resources to expand programming and opportunities to reach more members of the Pine Plains community.

Strategies

- Create a Parks, Open Space, and Recreation Plan that includes an inventory of recreation opportunities and strategies for how to expand recreation offerings in the Town.
- Promote an active lifestyle by supporting sports leagues and recreation activities for youth and adults.
- Consider the needs of older adults in planning for new or renovated recreational facilities.

Goal 17. Promote Pine Plains as an outdoor recreation destination.

Pine Plains has a beautiful natural landscape and has places for hunting, fishing, camping, hiking, bicycling, and cross-country skiing. This goal seeks to use those assets as a way to promote conservation and year-round tourism.

Strategies

- Implement the findings of the Pine Plains Hike and Bike Trails Report and consider the expansion of the trail system
- Explore hosting recreation events like marathons, bicycle races, and triathlons in Pine Plains.
- Partner with New York State, retailers, and sporting organizations to host hunting and fishing educational events.
- Provide information on public outdoor recreation facilities like the Stissing Mountain Multiple Use Area, and trout streams like the Roeliff-Jansen Kill and Shekomeko Creek in Town advertising materials.

Transportation

Goal 18. Improve the existing transportation network for motorists, pedestrians, and bicyclists.

The purpose of this goal is to improve the existing roadway and sidewalk infrastructure in Pine Plains to promote safe and reliable transportation options.

Strategies

- Continue to work with the New York State Department of Transportation (NYSDOT) to alleviate traffic and increase pedestrian safety along Church Street and Main Street. This includes implementing crosswalks and traffic calming measures to protect pedestrians.
- Continue to work with New York State to repair the bridges in Pine Plains that were listed in Moving Dutchess 2 as in need of repair. These include:
 - Carpenter Hill Road over Shekomeko Creek
 - Willowvale Rd. over Shekomeko Creek (slated for repair in 2020)
- Create an inventory of local street pavement conditions and repave in the order of urgency. Moving Dutchess 2 identified Route 199 as a road in need of repaving. Additionally, promote better and wider shoulders along State and County roads.
- Work with New York State to address streetscape conditions that do not currently comply with ADA accessibility along Main Street and Church Street as indicated in the Moving Dutchess 2 Plan.
- Promote public transit systems provided by Dutchess County and community organizations, especially for seniors and other people who do not have access to a car.
- Coordinate with Dutchess County about the potential feasibility of a new bus route along Route 199 connecting Tivoli to Millerton as discussed in Moving Dutchess 2.

Goal 19. Ensure safe conditions for pedestrians and bicyclists throughout Pine Plains, and expand on the pedestrian-friendly nature of the Pine Plains Hamlet center.

Encouraging active transportation through walking and bicycling should be paired with providing safe facilities for these activities. This goal especially promotes walking around the historic Pine Plains Hamlet center and strives to provide safe access to sidewalks.

Strategies

- Continue to implement goals from the Pine Plains Pedestrian Plan, which include repairing sidewalks and crosswalks in poor condition, improving pedestrian access to parks, community facilities and schools, and promoting economic development through better access to local businesses.
- Implement traffic calming measures where appropriate in residential areas to reduce through traffic.
- Explore designating Route 82 as a bicycle route as discussed in the Moving Dutchess 2 Plan.
- Establish Town signage and wayfinding measures, and add road safety signage along routes frequented by bicyclists, particularly Lake Road.
- Review local highway specifications to promote appropriate road widths in the rural parts of Pine Plains.

Communication

Goal 20. Pine Plains Community

There is a perceived split in the community between second homeowners and local residents. Maintaining effective communication is also posing an increasing challenge in a community without a local newspaper.

Strategies

- The Town should continue to pursue strategies for bridging the divide between second homeowners and local residents.
- The Town should continue to enhance communication by building upon the existing strategies of using the Town website and emails from the Supervisor.

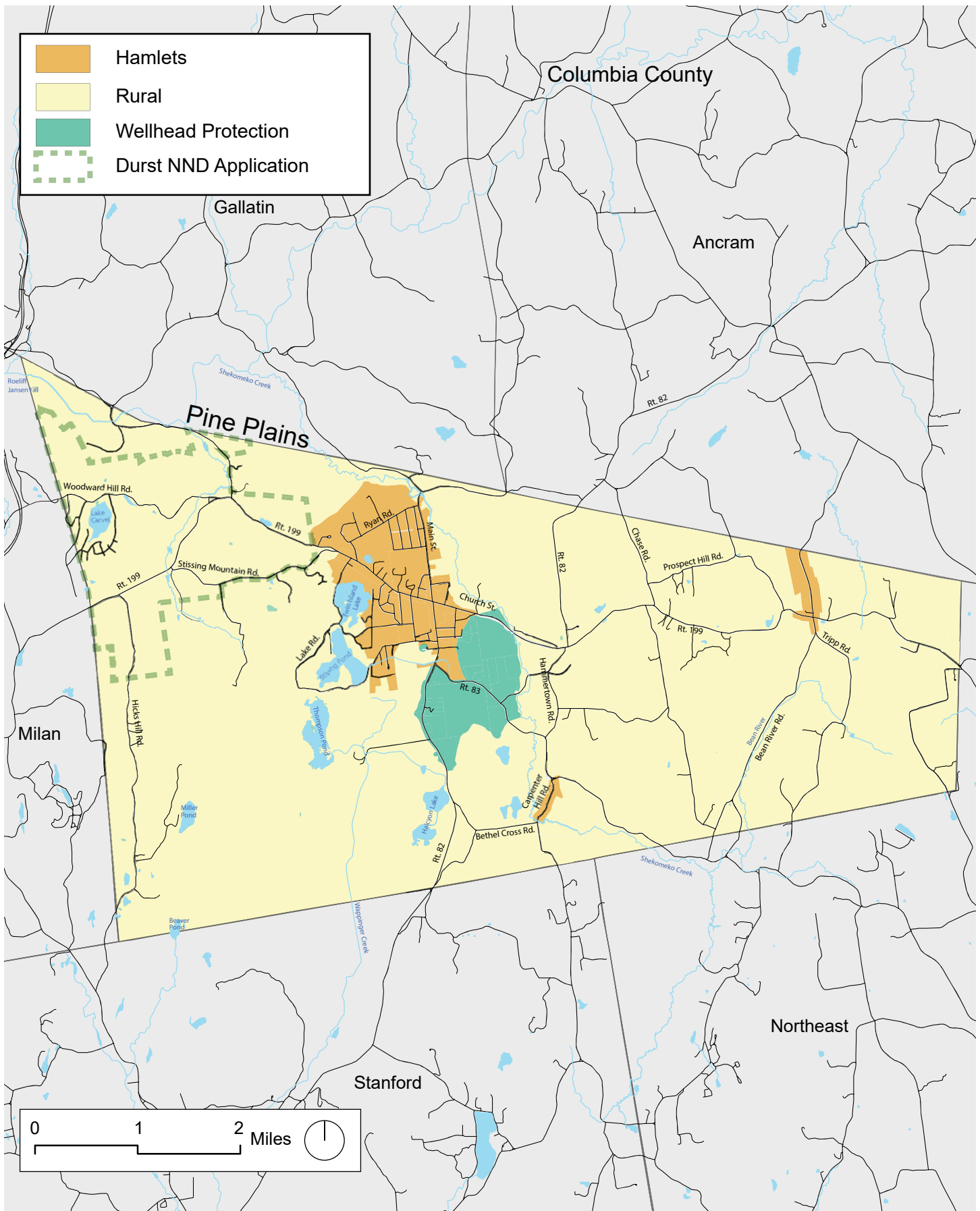
Chapter 11. Future Land Use Plan

The Future Land Use Plan for Pine Plains includes four different land use areas: Hamlets, Rural, Residential Wellhead Protection, and Conservation Development. The population of Pine Plains has been relatively flat since 2000, and the demographic trends do not project a growing population. This is consistent with the overall population trends in New York State. Therefore, the future land use of Pine Plains is likely to look similar to the current land use, with one exception, which is discussed below.

As shown on Figure 21, the majority of Pine Plains is anticipated to remain rural, which reflects the existing conditions of the area and the desires of residents. Rural land use includes active farming, less-dense housing, conservation subdivisions, light manufacturing, and conservation land. The Wellhead Protection area corresponds with the Wellhead Protection zoning district and is meant to restrict the type of uses allowed in the area to protect the Pine Plains water supply. Land uses in the Wellhead Protection district would include agriculture, single-family homes, and low-impact uses as approved by the Planning Board.

The Hamlet areas are mapped to recognize the three hamlets in the Town, the largest of which is Pine Plains Hamlet. The traditional hamlet center, along with the surrounding rural landscape, is what gives Pine Plains its identity. Therefore, the hamlet area is expected to be preserved as the center of Pine Plains with local stores, services, and more-dense housing than the rural parts of the Town.

The dotted line on Figure 21 indicates the location of a current application that is before the Pine Plains Town Board and Planning Board. Although this area is shown on the Future Land Use Plan, the Town of Pine Plains will not consider rezoning any area of this property until after a full Environmental Impact Statement is complete and separate public hearings have occurred. Any development in this area should pay particular attention to natural resource conservation and be designed to link new residents and visitors with the hamlet center of Pine Plains to support the existing businesses, services, and infrastructure.



Chapter 12. Implementation

The implementation table summarizes the major strategies listed in Chapter 10 of this Comprehensive Plan Update. The table format includes a summary of the recommendation, a reference to the chapter where the recommendation was inspired, and the type of action suggested to achieve the recommendation. The time frames for the action are listed as Immediate, Short, Medium, and Ongoing. Immediate actions could take place within one year, short term actions could take place between one and three years, medium term actions could take place between three and five years, and ongoing actions should be continually revisited as necessary.

Implementation Matrix

Summary of Major Recommendations	Reference to Plan Chapter	Type of Action	Time Frame
Update the Comprehensive Plan Every 10 years.	Chapter 3: Land Use and Zoning	Update Comprehensive Plan	Ongoing
Update existing zoning regulations to more accurately reflect existing setbacks and land uses.	Chapter 3: Land Use and Zoning	Amend Zoning Code	Short
Identify opportunities for potential future developments.	Chapter 3: Land Use and Zoning	Establish a study group to study/analyze potential sites	Short
Continue to support zoning enforcement and provide adequate staffing and training for enforcement.	Chapter 3: Land Use and Zoning	Town Board Action	Ongoing
Preserve the natural heritage of Pine Plains.	Chapter 4: Natural Resources	Review Town regulations and partner with conservation organizations.	Ongoing
Create a natural resources inventory.	Chapter 4: Natural Resources	Study/analysis by Conservation Advisory Council	Medium
Revitalize Agricultural Advisory Committee to study policy and promote agritourism.	Chapter 4: Natural Resources	Assigned to Agricultural Advisory Committee	Immediate
Continue to seek grants to fund clean energy initiatives as a Designated Clean Energy Community.	Chapter 4: Natural Resources	Establish a committee to study potential grants	Ongoing
Designate scenic routes and vistas that should be protected.	Chapter 4: Natural Resources	Recommendations created by a new committee and added as a Comprehensive Plan Addendum.	Short

Summary of Major Recommendations	Reference to Plan Chapter	Type of Action	Time Frame
Partner with neighboring municipalities and New York State to protect natural resources of regional value.	Chapter 4: Natural Resources	Planning Board Procedure, Town Board Resolution	Ongoing
Review zoning to ensure it encourages housing opportunities for all Pine Plains residents.	Chapter 6: Housing	Planning Board Procedure	Immediate
Explore opportunities for affordable and workforce housing in the Hamlet areas.	Chapter 6: Housing	Establish a study group to study/analyze potential opportunities	Short
Continue to promote agriculture and ensure local laws are farm-friendly.	Chapter 7: Economy	Town Board review	Ongoing
Maintain zoning in rural areas that promotes agriculture and conservation.	Chapter 7: Economy	Town Board monitoring	Ongoing
Study the existing commercial uses in the Pine Plains to see how the Town can support them.	Chapter 7: Economy	Establish a study group to study/analyze land uses	Medium
Explore grants that provide financial support for local small businesses.	Chapter 7: Economy	Establish a committee to study potential grants	Ongoing
Explore state and county tax incentives and enhance the use of existing incentives to implement goals of this plan.	Chapter 7: Economy	Study/analysis and changes to tax policies, rates, procedures	Ongoing
Assist the business community in marketing and improving appearances of businesses.	Chapter 7: Economy	Study/analysis by hired specialist and Business Association	Short
Implement the Town Center Revitalization Plan.	Chapter 7: Economy	Planning Board Procedure with assistance from Town departments and NYSDOT	Medium
Promote tourism focused on Pine Plains' strengths: agriculture, natural resources, and arts and culture events.	Chapter 7: Economy	Study/analysis by specialist	Medium
Relocate Town Hall to Pine Plains Hamlet	Chapter 8: Community Facilities, Infrastructure, Cultural Resources, and Recreation	Town Board Action	Medium
Study the potential for linking the Stissing Center and the Pine Plains Free Library via the Catholic Church property.	Chapter 8: Community Facilities, Infrastructure, Cultural Resources, and Recreation	Planning Board Study	Medium

Summary of Major Recommendations	Reference to Plan Chapter	Type of Action	Time Frame
Promote the development of a combined central septic system or other findings from the Central Septic Feasibility Study.	Chapter 8: Community Facilities, Infrastructure, Cultural Resources, and Recreation	Town Board and Planning Board Procedures	Ongoing
Encourage establishing National Register historic district using the 1986 Historic Resource Inventory.	Chapter 8: Community Facilities, Infrastructure, Cultural Resources, and Recreation	Support program with grant money to hire specialist	Medium
Create a Parks, Open Space, and Recreation Master Plan.	Chapter 8: Community Facilities, Infrastructure, Cultural Resources, and Recreation	Planning Board Study	Medium
Implement the recommendations of the Pine Plains Hike and Bike Trails Report.	Chapter 8: Community Facilities, Infrastructure, Cultural Resources, and Recreation	Town Board and Planning Board Procedures	Ongoing
Continue to work with New York State DOT to alleviate traffic and increase pedestrian safety.	Chapter 9: Transportation	Town Board and Planning Board Procedures	Ongoing
Review local highway specifications to preserve the rural nature of Pine Plains.	Chapter 9: Transportation	Amend highway standard law	Immediate
Implement existing traffic studies for Pine Plains that promote the pedestrian-friendly nature of Pine Plains Hamlet.	Chapter 9: Transportation	Town Board, Planning Board, Dutchess County, and New York State Actions	Medium

Appendix A: Comprehensive Plan Update Survey

The following section summarizes the responses for the open-ended questions that asked about the threats and opportunities for the future of Pine Plains. These responses were compiled and summarized by the Comprehensive Plan Update Committee, and are organized based on their theme. The responses are listed in order of most responses to least responses, and the number of responses is listed adjacent to the response.

What Threats do you see for Pine Plains in the Future?

Socio/Cultural

- Becoming a rundown, derelict town (Zombie prop) (9)
- Lack of activities for kids (7)
- Lack of housing opportunities (6)
- Conflicts between “locals” and “weekenders” agendas’ (5)
- Losing “small town” feel (5)
- No threats are imminent (the sound and fury) (4)
- Fear of change (4)
- Gap between rich and poor (4)
- Loss of “local” community as “weekenders” move in (4)
- Loss of the “family” (4)
- Drugs (4)
- Loss of Pecks Market (3)
- Commercial Farming (2)
- Socio/political discord (2)
- Poor Intra-Community Communication (2)
- Greedy locals and their greed (2)
- Development generally (2)
- Insularity/small mindedness (2)
- Change (1)
- Becoming and Air BNB destination (1)
- Lack of community engagement (1)
- Lack of consensus (1)

Demographic

- Declining school population (14)
- Population decline (10)
- Population growth (6)
- Too much traffic (3)

Economic

- Wrong type of development (too fast, too far, too corporate) (“dumb growth”) (23)
- Further lost businesses/ too little growth in Town Center (20)
- Lack of jobs/opportunity (14)
- Locals priced out (13)
- Continued decline in community reinvestment (10)
- Wrong type of growth and planning that favors the wealthy and invites in “low income” newcomers. (10)
- “Locals” land use autonomy and opportunities threatened by over regulation (9)
- Decline in services (7)
- Staying the same (6)
- Lack of infrastructure for growth (6)
- Lack of sewer/downtown infrastructure for “smart growth” (5)
- Economic depression (5)
- Corporate chains (5)
- Environment unfavorable to small business growth (4)
- Tourism changing things (4)
- High taxes/increasing taxes (4)
- Lack of growth generally (3)

Land Management

- Durst (10)
- Development in the rural districts (8)
- Open space preservation and rural landscapes (7)
- Twin Island and Stissing Lakes’ long-term health (7)
- Insufficient regulation of Durst (4)
- Overdevelopment in downtown Pine Plains (1)

Political

- Climate Change (2)
- Lack of public transportation (1)
- Lack of historic preservation laws (1)
- Inadequate Fire Department and emergency services (1)

Regulatory

- Speeding in town (2)
- Height restrictions in town zoning (1)
- The development of ridgelines (1)
- Unenforced ordinances (1)

What Opportunities do you see for Pine Plains in the Future?

Cultural

- To preserve what we have (lovely small-town w/ independent biz) (17)
- For the Stissing Center to be a Cultural growth driver (3)
- For the promotion of the performing arts (3)

Demographic

- To promote and attract Pine Plains to younger families (5)

Recreation/Tourism Nexus

- To engage in 'Smart Growth' (protect assets, build on strengths) (28)
- To promote Pine Plains as a destination for recreational opportunities as a driver of economic activity (24)
- To promote Trails and Walkability as a growth driver (20)
- To promote more recreational opportunities (16)
- To promote Growth (8)
- To Promote Agritourism (6)

Economic

- To support more local, independent businesses (22)
- To see more Retail Businesses in town (18)
- To increase job opportunities (10)
- To attract entrepreneurs (9)
- Stissing Center as a positive (growth driver) (8)
- To welcome a hardware store (7)
- To attract new businesses (6)
- To attract weekenders/shoppers (4)
- To remain commercially functional/viable (4)
- To work with the Durst Org (4)
- To get a gym (3)
- To attract light manufacturing (2)

Land Management

- To improve the Town Center/M.S.D (24)
- To promote and secure ag/farm activities (8)
- To support infrastructure development as a growth driver (8)
- To utilize empty/abandoned properties (5)
- To promote center septic (4)
- To improve lake quality (4)
- To improve the Rec Area (4)
- To improve the Town Beach (3)
- To have a Drs office/Health Center (3)
- To create a dog park (2)
- To create a playground (2)
- To create a Town Pool (2)

Political

- Opportunity for implementation of existing plans (6)
- To put the Town Hall in the Town Center (2)

Regulatory

- To promote a clean attractive town (7)
- To create more 'flexible' zoning codes (4)
- To create and enforce appearance standards for 'in Town' properties (3)
- For the Town to have a more 'positive' attitude towards business and development (3)
- To create a Noise Ordinance (2)
- To make the Zoning clearer (1)

Social

- To promote more Affordable Housing opportunities (9)
- To create more activities for kids/teens (8)
- To create Senior Housing (7)
- To create activities for adults (6)
- To create more reasons for folks to come to Pine Plains (4)
- To improve our schools (2)
- To promote farmworker housing (1)

Miscellaneous (wildcard)

- Opportunity to reject Growth entirely (5)
- To reject corporate business from Town (3)
- To promote 2nd home ownership (3)
- To invite in corporate businesses, ie: CVS, McDonalds (2)
- To promote habitat expansion/wild areas in Town (1)
- To stop Durst (1)

Town of Pine Plains Comprehensive Plan Survey Questionnaire

Friday, July 12, 2019

Powered by  SurveyMonkey[®]

COMPREHENSIVE PLAN COMMITTEE

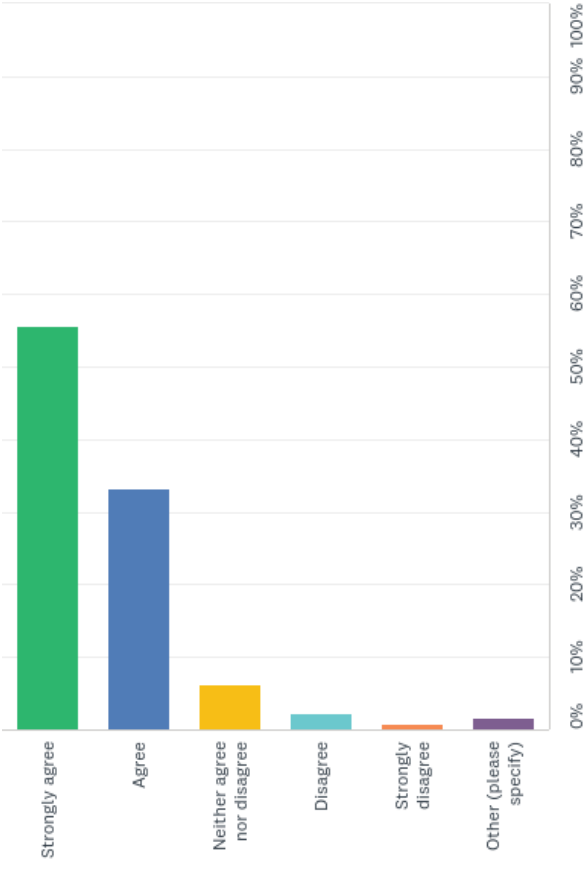
- Tim Berlinghoff
- Rory Chase
- Scott Chase
- Wesley Chase
- Darrah Cloud
- Matt Finley
- Alice Nuccio
- Michael Stabile

229

Total Responses

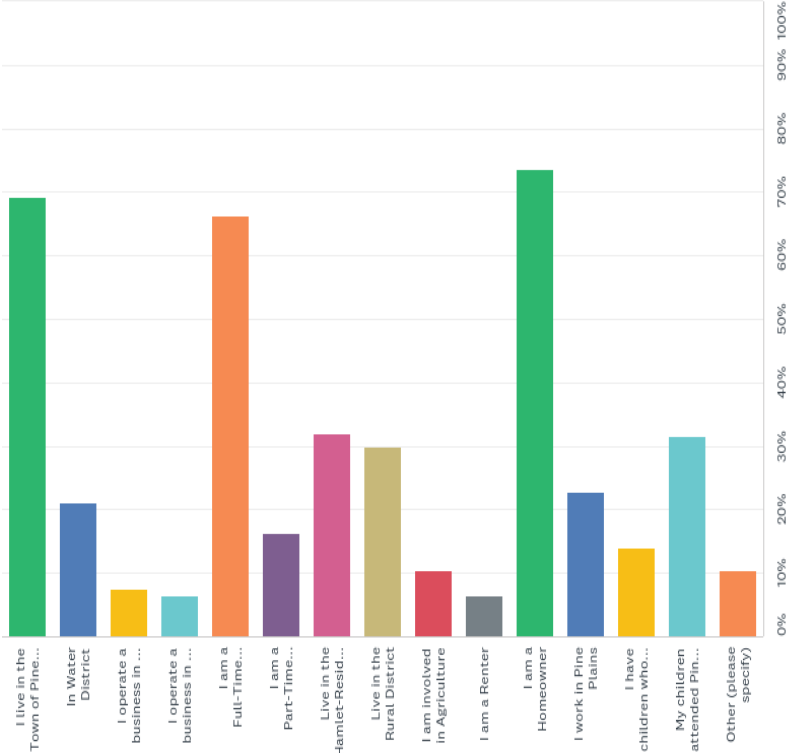
Complete Responses: 199

Q1: The 2004 Comprehensive Plan ultimately identified a Vision for Pine Plains: to remain an agricultural community with open spaces, ample outdoor recreational opportunities, a sense of small-town community with a strong and prosperous Town Center. Do you agree with the goals laid out in this Vision?

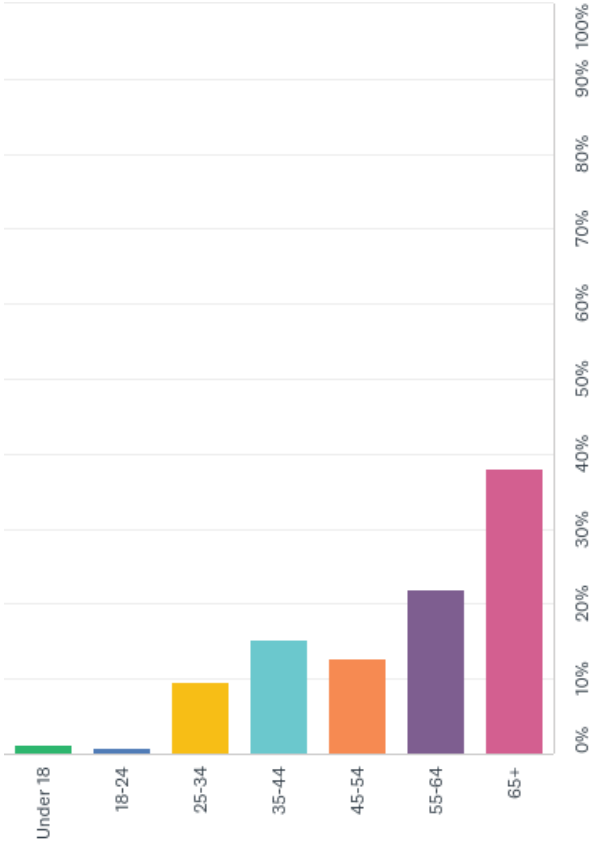


ANSWER CHOICES	RESPONSES
Strongly agree	55.56%125
Agree	33.33%75
Neither agree nor disagree	6.22%14
Disagree	2.22%5
Strongly disagree	0.89%2
Other (please specify)	1.78%4
TOTAL	225

Q2: Please share a little about your relationship to Pine Plains.



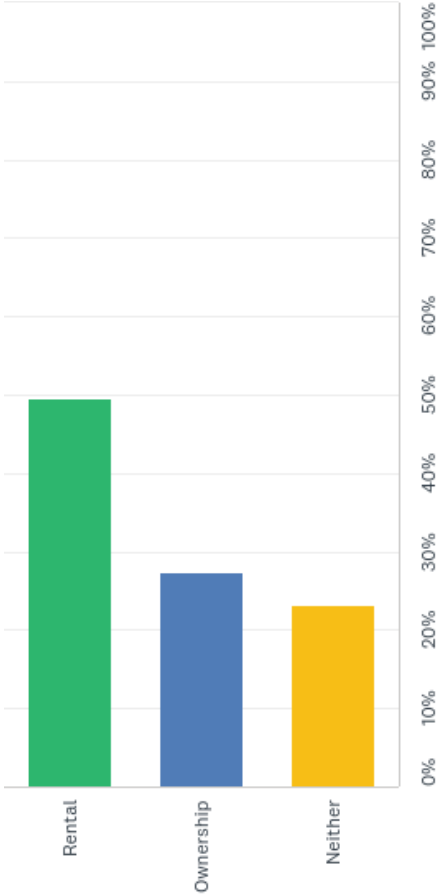
Q3: Age



ANSWER CHOICES	RESPONSES
Under 18	3
18-24	2
25-34	22
35-44	35
45-54	29
55-64	50
65+	87
TOTAL	228

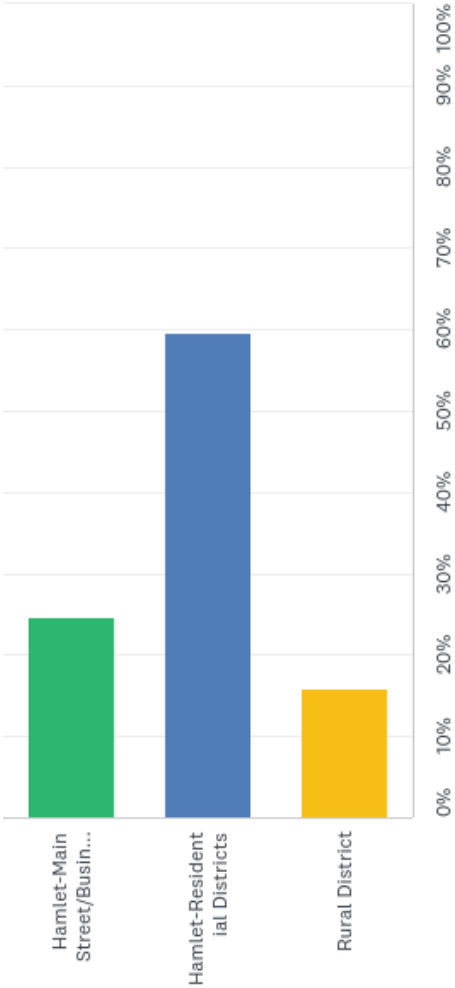
Q4: Do you feel there is a need for more affordable housing in Pine Plains?

ANSWER CHOICES	RESPONSES	
Rental	49.54%	107
Ownership	27.31%	59
Neither	23.15%	50
TOTAL		216



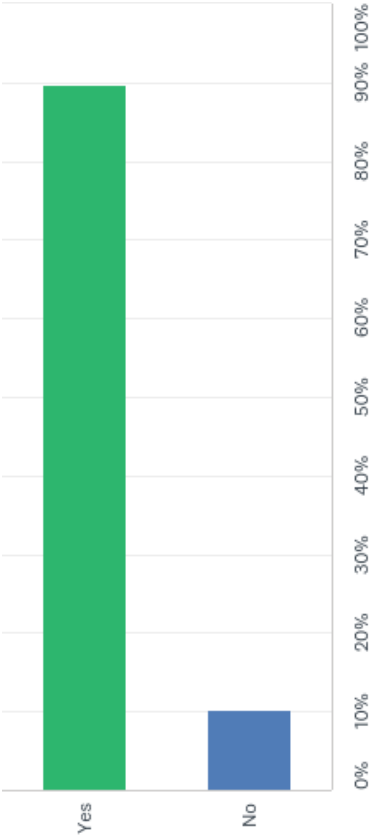
Q5: If you agree to the need for housing, in which of the following Districts is affordable housing needed?

ANSWER CHOICES	RESPONSES
Hamlet-Main Street/Business District	24.59%45
Hamlet-Residential Districts	59.56%109
Rural District	15.85%29
TOTAL	183

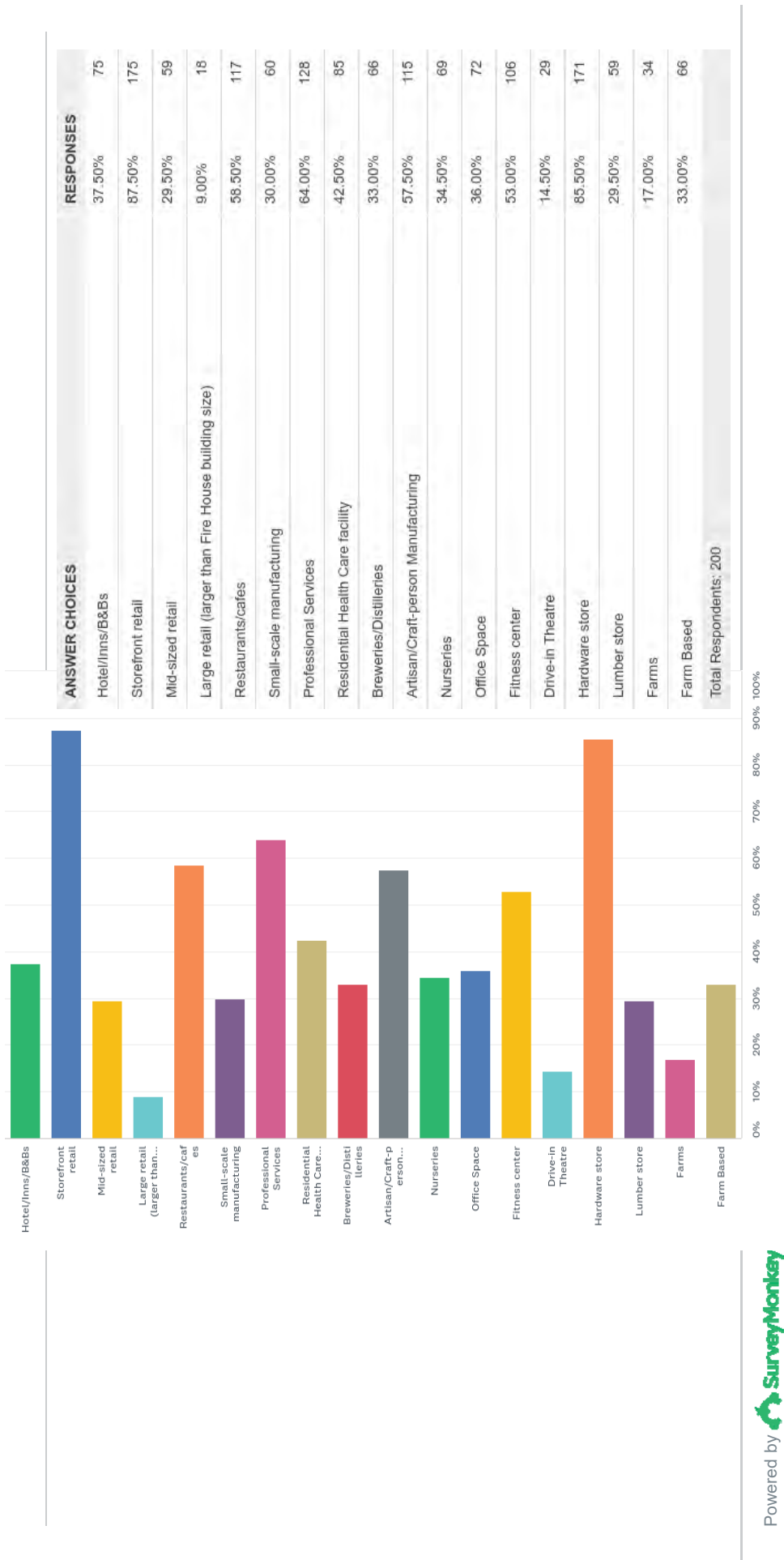


Q6: Do you feel there is a need for more businesses in Pine Plains?

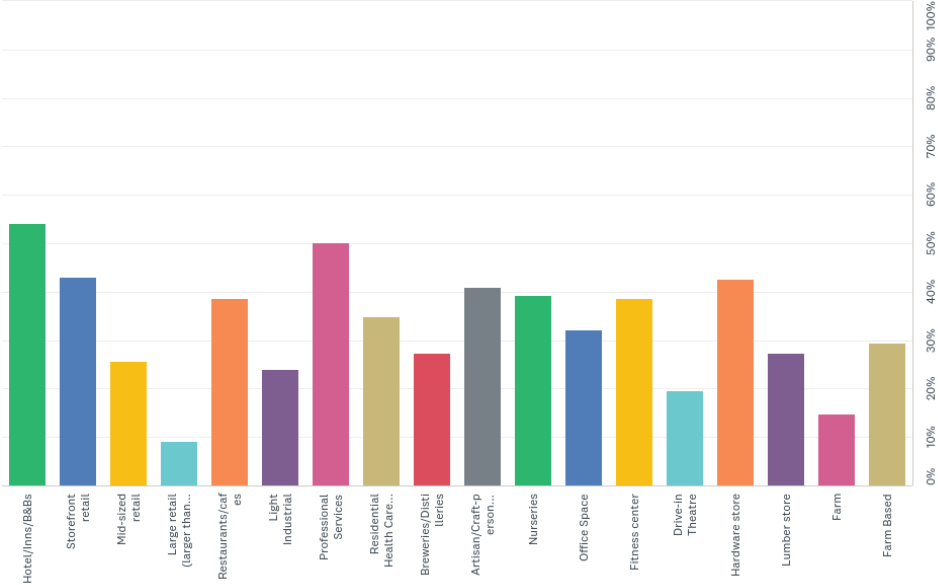
ANSWER CHOICES	RESPONSES	
Yes	89.78%	202
No	10.22%	23
Total Respondents: 225		



Q7: Please choose business types you would like to see within the Hamlet-Main Street/Business District.

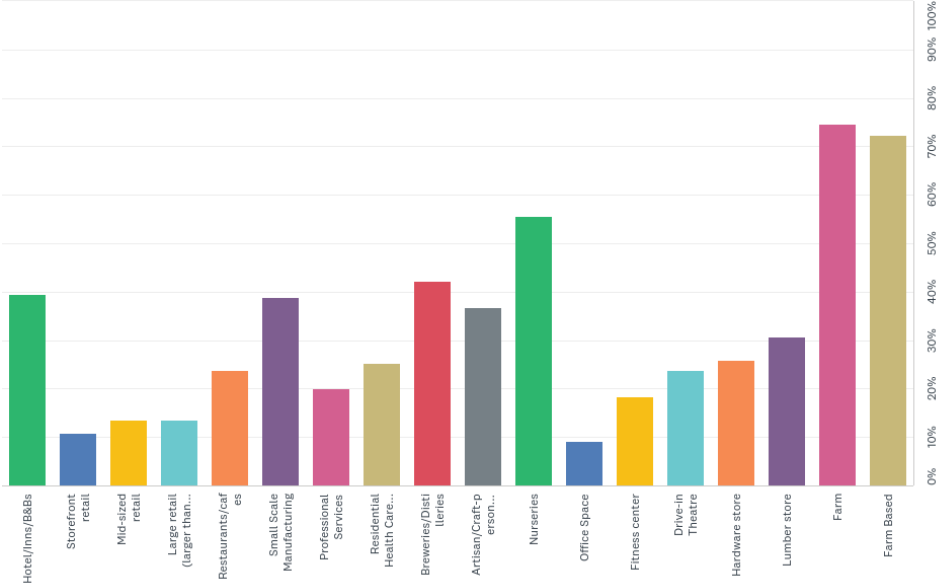


Q8: Please choose business types you would like to see within the Hamlet-Residential Districts.



ANSWER CHOICES	RESPONSES
Hotel/Inns/B&Bs	54.10%99
Storefront retail	43.17%79
Mid-sized retail	25.68%47
Large retail (larger than Fire House building size)	9.29%17
Restaurants/cafes	38.80%71
Light Industrial	24.04%44
Professional Services	50.27%92
Residential Health Care facility	34.97%64
Breweries/Distilleries	27.32%50
Artisan/Craft-person Manufacture	40.98%75
Nurseries	39.34%72
Office Space	32.24%59
Fitness center	38.80%71
Drive-in Theatre	19.67%36
Hardware store	42.62%78
Lumber store	27.32%50
Farm	14.75%27
Farm Based	29.51%54
Total Respondents: 183	

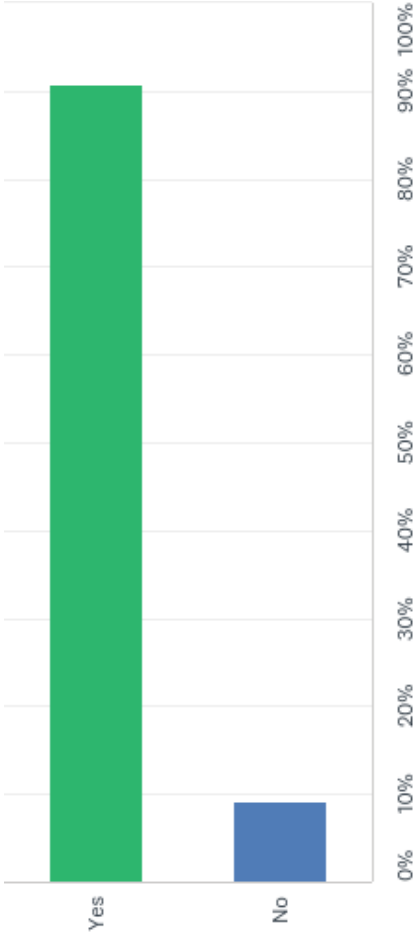
Q9: Please choose business types you would like to see in the Rural District. (Select ALL that apply)



ANSWER CHOICES	RESPONSES
Hotel/Inns/B&Bs	73
Storefront retail	20
Mid-sized retail	25
Large retail (larger than Fire House building size)	25
Restaurants/cafes	44
Small Scale Manufacturing	72
Professional Services	37
Residential Health Care facility	47
Breweries/Distilleries	78
Artisan/Craft-person Manufacturing	68
Nurseries	103
Office Space	17
Fitness center	34
Drive-in Theatre	44
Hardware store	48
Lumber store	57
Farm	138
Farm Based	134
Total Respondents: 185	

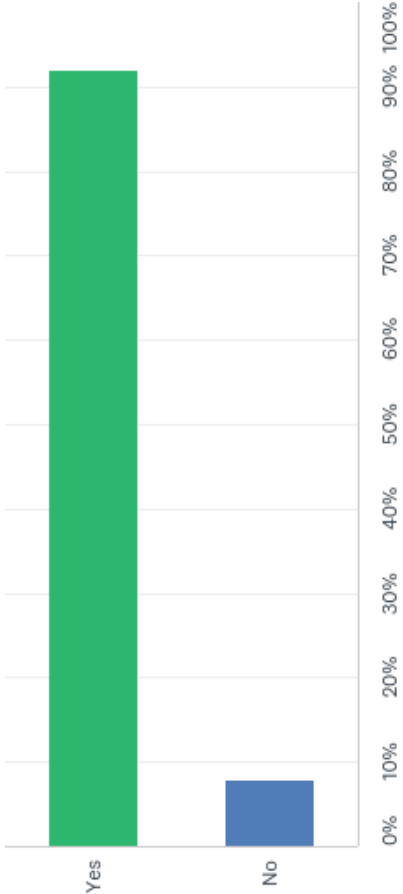
Q10: Would you support pursuing Federal, State, County, and private grants to increase growth and capacity building to improve our Hamlet-Main Street/Business District?

ANSWER CHOICES	RESPONSES
Yes	90.86%179
No	9.14%18
TOTAL	197

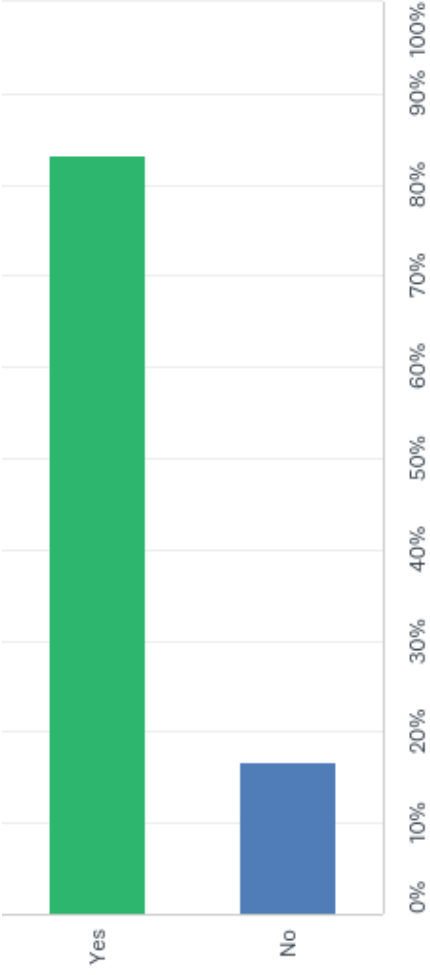


Q11: Would you support researching improvements to the Hamlet-Main Street/Business District including increased public parking options, redesigned Town Park, downtown beautification, options for a downtown septic district, improved pedestrian walkability & crossings, improved sidewalks, bicycle infrastructure?

ANSWER CHOICES	RESPONSES
Yes	91.96%183
No	8.04%16
TOTAL	199

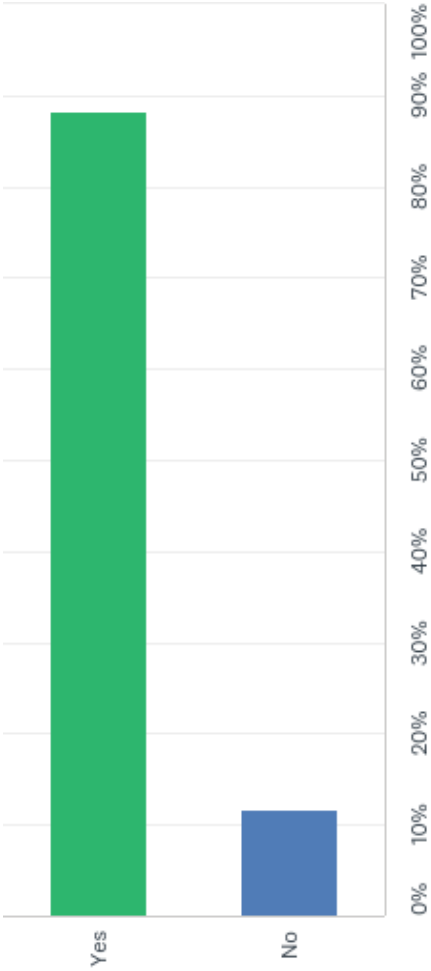


Q12: Would you support researching improvements to the Hamlet-Main Street/Residential Districts including increased public parking options, redesigned Town Park, downtown beautification, options for a downtown septic district, improved pedestrian walkability & crossings, improved sidewalks, bicycle infrastructure?



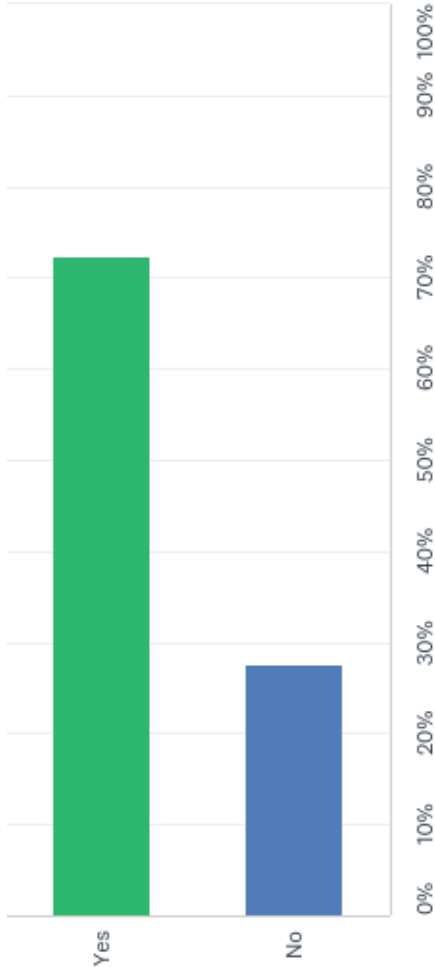
ANSWER CHOICES	RESPONSES
Yes	83.25% 164
No	16.75% 33
TOTAL	197

Q13: Would you support the implementation of the Draft Downtown Revitalization Plan? This plan includes improved pedestrian street crossings with curb extensions at appropriate locations, improved lane, biking, and parking delineations, the intent being to slow traffic in the Hamlet-Main Street/Business District and increase pedestrian accessibility, safety, and overall “walk-ability”?



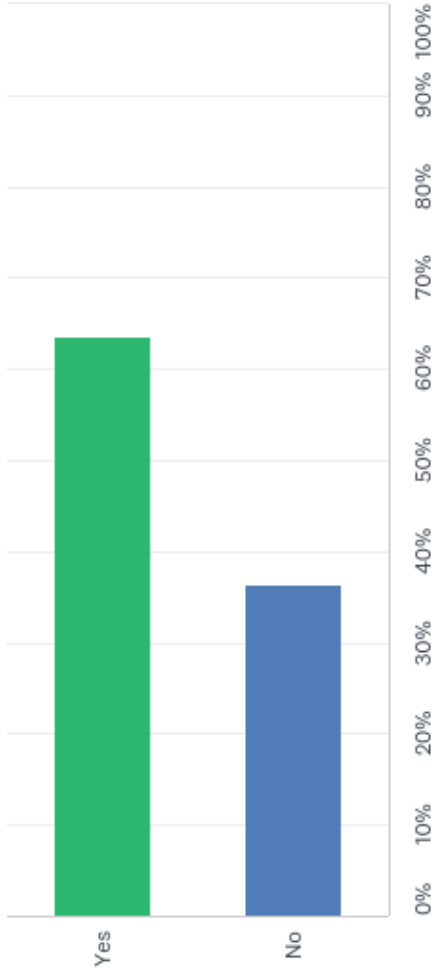
ANSWER CHOICES	RESPONSES
Yes	88.38% 175
No	11.62% 23
TOTAL	198

Q14: Considering the Town Hall is too small, and temporary structures have exceeded their functional life span, is it important the new Town Hall be located in the Hamlet-Main Street/Business District?



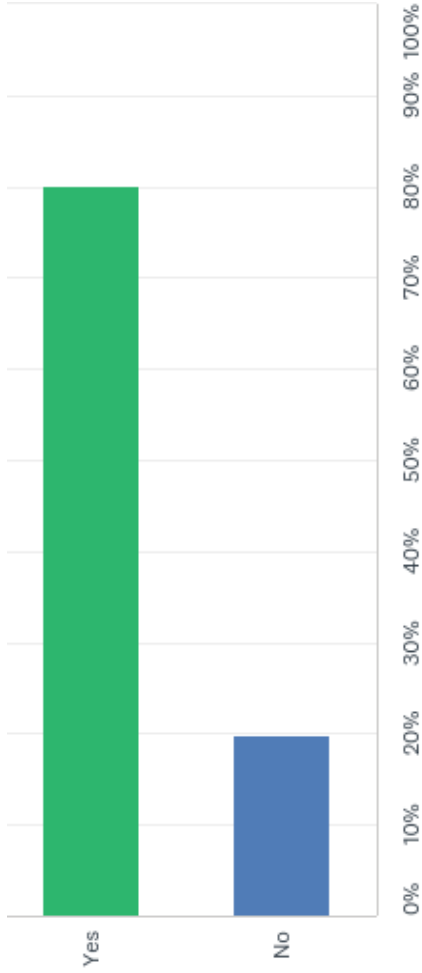
ANSWER CHOICES	RESPONSES
Yes	72.40% 139
No	27.60% 53
TOTAL	192

Q15: Do you feel the current Zoning Law strikes an adequate balance between development and preservation of community character?



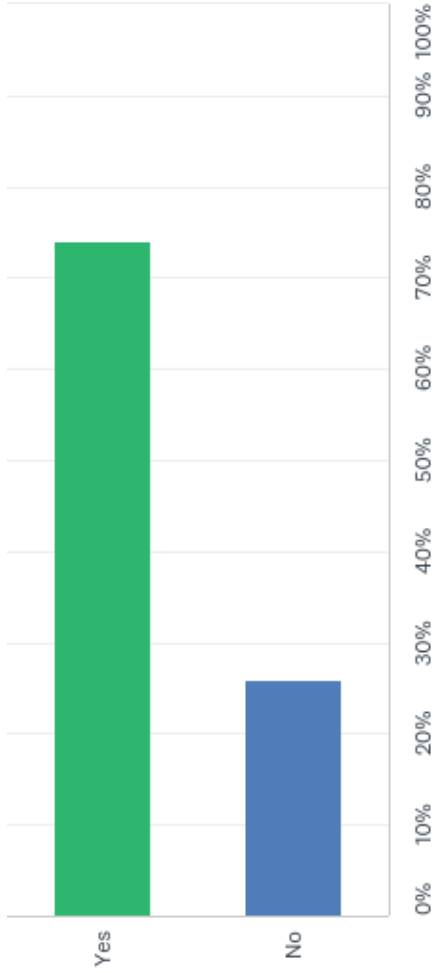
ANSWER CHOICES	RESPONSES	
Yes	63.52%	101
No	36.48%	58
TOTAL		159

Q16: Do you feel there is a need to protect our ridgelines and hilltops from development through changes to zoning?



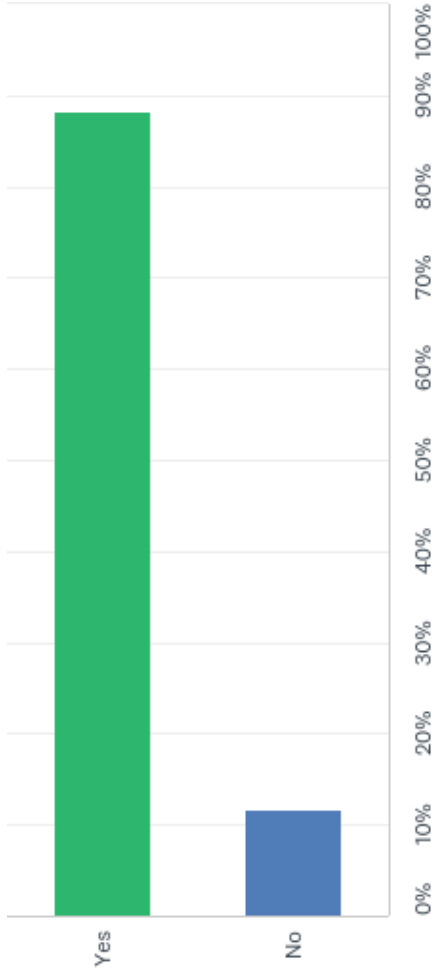
ANSWER CHOICES	RESPONSES
Yes	80.21% 150
No	19.79% 37
TOTAL	187

Q17: Do you feel the need for increased connectivity between these community resources, (trails, sidewalks, bike lanes) as well as to and from the Hamlet-Main Street/Business District?



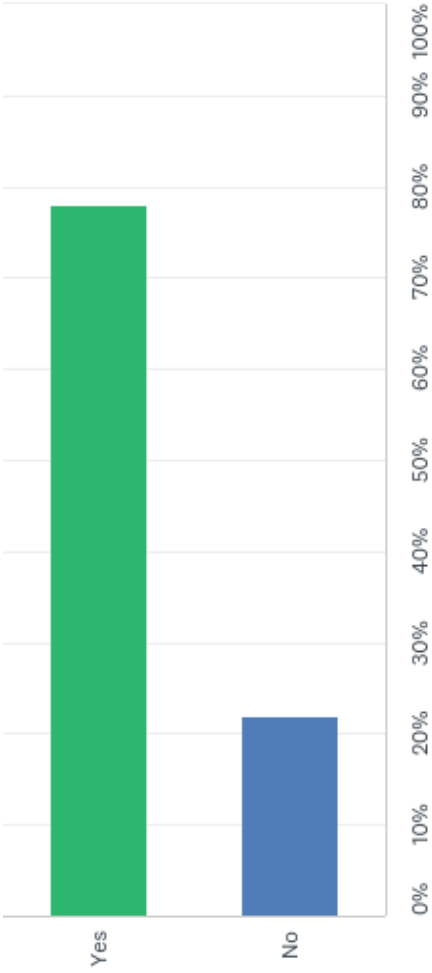
ANSWER CHOICES	RESPONSES
Yes	74.11% 146
No	25.89% 51
TOTAL	197

Q18: Would you like to see the Town pursue Federal, State, and, private grants for the purpose of improvement to these public sites?



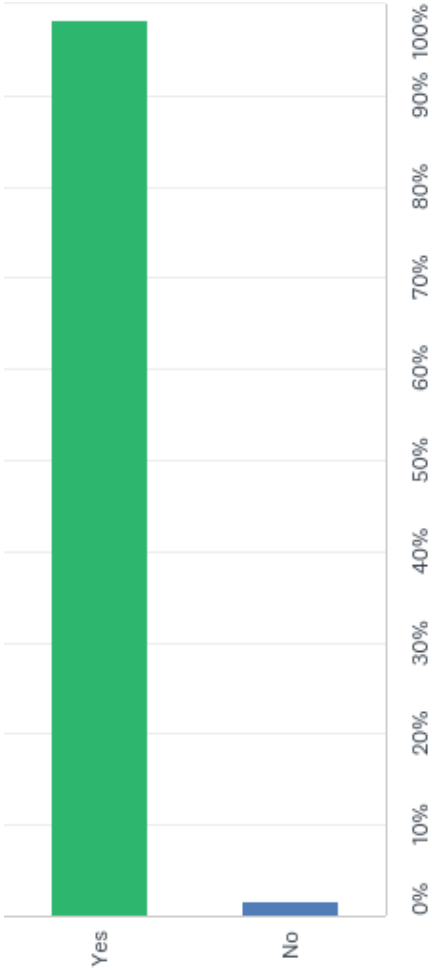
ANSWER CHOICES	RESPONSES
Yes	88.38% 175
No	11.62% 23
TOTAL	198

Q19: Considering the popularity of these recreational opportunities with locals and visitors alike, do you feel the need for building awareness for these public venues through promotion and a system of “wayfinding” in Town (system of signage, indicators, and trail-maps)?



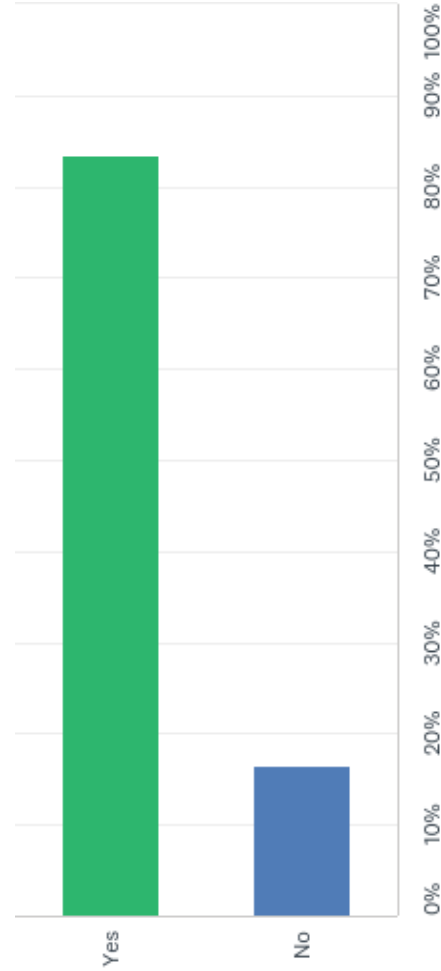
ANSWER CHOICES	RESPONSES	
Yes	78.00%	156
No	22.00%	44
TOTAL		200

Q20: Would you support efforts to clean, restore and protect our lakes?



ANSWER CHOICES	RESPONSES
Yes	98.22% 166
No	1.78% 3
TOTAL	169

Q21: Would you support the implementation of the Recreation Area Master Plan?



ANSWER CHOICES	RESPONSES
Yes	83.52% 152
No	16.48% 30
TOTAL	182

Appendix B: 2004 Comprehensive Plan Infrastructure Discussion

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.

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.

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.

Table 6.3		
Permeability vs. Septic Tank Absorption Field Requirement or Ratings		
Permeability (min/in)	NYSDOH Title 10 Part 75 ¹	NRCS ² 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		
80	Alternative systems may be required (60-120)	
90		
100		
120		
>120	(>120)	Severe (>100)
¹ 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		
² 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,

Group	Description of Group	Leachfield Designs Expected or Appropriate for Soil Group	Soil Map Units Included Within Group
	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

Permeability (min/in)	NYSDOH Title 10 Part 75 ¹	NRCS ² : Limits	This Comprehensive Plan
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		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 qualify (60-120)		
80			
90			
100			
120		Severe (>100)	Unsuitable Soils (>100)
>120	(>120)		

¹ 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

² 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.