3.1 Existing Plans and Studies

Key Takeaways

- **Recent studies have focused on climate resiliency, which is an ever-present challenge, due to Piermont's geography in which a significant portion of the Village is in floodplains along the Hudson River and Sparkill Creek.**
- **Many of the goals from the neighboring master plans provide themes and frameworks consistent with Piermont's goals, including conservation of the character of the region, expanding transportation availability and accessibility, developing a healthy economic climate, and preserving natural resources.**
- **Piermont has done in-depth topical studies in recent decades, but the Comprehensive Plan will tie them together and build on their foundation.**

3.1.1 Piermont Risk Assessment (January 2014)

This assessment was developed for the Piermont Waterfront Resilience Task Force. The assessment calculated risks for the 2020s, 2050s, and 2100 using sea level rise of 10, 29, and 72 inches. The analysis showed regular inundation in Piermont Marsh and the Ferry Road area of the pier. Projections for the 2050s shows water coming in from both north and south of the pier leading to isolation from the mainland by 2100. Parelli Park, southern portions of 549-625 Piermont Avenue, and the community garden will be inundated as well as the core business district through the eastern section of the Patch and the DPW Parking Lot. The assessment suggests specific fortification adaptations to preserve the viability of the business core area such as using Paradise Avenue as a levee and elevating or adding protective shore defenses at the northern base of the pier.

Sixteen assets had the highest vulnerability scores including Siren Tower (at Parelli Park), the Pumping Station, the Piermont Fire Department Boat House, Mop Top Park, the Walkway, and small businesses. Critical facilities include eight assets: the Siren Tower, the Pumping Station (Ferdon Avenue), the PFD Boat Launch & Boat House, the DPW Parking lot, the Public Works Department, a medical facility (J. Enzenbacher, MD), Village Hall, and the Empire Hose Company. The assessment notes that all these facilities will have regular inundation, including the Public Works Department, by 2100. The assessment also shows that eight transportation/access assets have the highest risk including Ferry Road, Paradise Avenue, and the Erie Railroad Pier. The north and south sections of Piermont Avenue, Ferdon Avenue, and three bridges over the Sparkill Creek are a moderate risk. The assessment suggested seeking alternative driving access to the Pier through Piermont Landing/Abbotsford Gate and elevating the lowest portions of North and South Piermont Avenue north of Pier 701, near the Post Office, across from the Pumping Station, and just north of the DPW. The assessment also recommends that marsh adaptation and/or migration, through natural or assisted accretion, be undertaken to assist in maintaining Piermont Marsh.

3.1.2 Resilience Roadmap: Planning for Piermont's Future (September 2014)

This report was developed by the Piermont Waterfront Resilience Task Force. The report notes that Piermont's location on the banks of the Hudson and the mouth of the Sparkill Creek is both an asset and a challenge. Hurricanes Irene and Lee (Summer 2011) and Superstorm Sandy brought severe damage to the Village. The report highlights sea level rise and local sea level rise projections (as described above in the Piermont Risk Assessment). The report looks at a sea level rise of 72 inches for the 2100 timeframe.

Modeling by Scenic Hudson estimates that the area of the waterfront subject to tides or flooding could expand by nearly 50% - from 93 acres to 132 acres.

The vision statement states Piermont's proposed adaptation actions.

A resilient Piermont will adapt gradually to avoid and minimize risks;
help its residents and businesses to recover quickly from floods and storms;
maintain the Village's relationship with the Hudson River;
maintain a vibrant business district and local economy;
foster and build community;
be environmentally responsible;
be a model for others.

The Task Force recommended a series of recommendations including establishing a permanent Flooding and Storm Resilience Committee, improving emergency communications, incorporating the Task Force recommendations into the LWRP update, developing a Comprehensive Emergency Management Plan, working with local utilities to improve resilience, and identifying funding opportunities to support flood adaption, mitigation, and protection measures. Recommendations were categorized by time frame (immediate, 1-2 years, 2-5 years) and by sector. The report highlighted neighborhood-based recommendations for 9 neighborhoods which include techniques such as floodproofing, elevating structures and roadways, converting structures to be floating, constructing offshore breakwaters or a levee, fortifying low-lying areas (with fill, walls, or deployable floodgates), marsh expansion, green infrastructure, exploring community interest in buy-outs or rolling easement options, and/or managed retreat. More specifically the recommends by neighborhood include:

1. North Piermont Avenue - wet or dry floodproofing; elevate or relocation of flood-vulnerable residences; explore breakwater designs, floodwall, or levee; raise Piermont Avenue.
2. Flywheel – elevate low-lying road sections; floodproofing of vulnerable buildings.

3. Commercial Core – building elevations and floodproofing; explore using fill to elevate low lying area east of Piermont Avenue to maintain a land connection to the Flywheel area, Condominiums, and the Pier; consider marsh expansion (north/south) in between Piermont Avenue and Roundhouse Road with esplanades along business fronts and bridges.
4. Condominiums – fortifying low-lying areas (fill, walls, deployable floodgates); elevate portions of Ferry Road; green infrastructure; sustainable shoreline treatments, floodproofing; explore removable floodwall to surround the Condominium and Flywheel areas and the base of the pier.
5. The Pier – evaluate for hydrological impacts on the Piermont Marsh.
6. Bogertown and the Patch – residence elevations; explore interest in buyouts or rolling easements; find an alternative location for parking and storage for the DPW vehicles and equipment; elevate Paradise Avenue as a protective levee for the Patch and other neighborhoods.
7. Sparkill Creek Corridor – storm-proofing of the pump station (Town of Orangetown); work with the Town of Orangetown, Rockland County, and watershed groups to improve stormwater management; wet or dry floodproofing; elevating or relocation for flood-vulnerable residences; raise low sections of Piermont Avenue or explore alternative access through the Commercial Core along a higher elevation (and adaption or relocation of uses).
8. Piermont Marsh – enhance flood-buffering characteristics of the marsh and explore marsh adaptation (assisted accretion or engineering the outer edge for reduced erosion).

3.1.3 LWRP (June 2018)

The LWRP discusses flooding during the previous storm events as discussed above and notes that flooding is common at the historic drawbridge on Bridge Street and the Bogertown neighborhood. The LWRP notes that the bulkhead at Parelli Park needs to be repaired. The Piermont Marsh is highlighted as a critical environmental area. The LWRP focuses on sea level rise risk.

Proposed projects related to flooding include updating zoning, planning, and building codes, Comprehensive Emergency Management Planning, and becoming a Climate Smart Community. The plan also proposes improving the sewage and stormwater systems (to separate them to reduce dangerous overflows during flooding events), improving freshwater supply and management, and participation in the NFIP CRS program. Additional recommendations include planning for managed retreat, installing protective measures (seawalls, levees), utilizing building elevations, investing in greater access to the waterfront, improving marinas and waterways through dredging, and protection of the Piermont Marsh. One specific project related to the Sparkill Creek Corridor Flooding and Pollution, includes working with the Sparkill Creek Watershed Alliance, Riverkeeper, and other organizations and petitioning Orangetown, Bergen County, and the Rockland County Drainage Agency authorities to require upstream retention

basins (or equivalent) to mitigate runoff and to limit development in its wetlands. The plan also recommends improving traffic and parking, open space preservation including the former lower Erie rail line, and historic preservation. The plan also discusses use of the former Tappan Zee Elementary property as a potential relocation site.

3.1.4 Sparkill Creek Flood Mitigation & Resilience Report (January 2022)

The Sparkill Creek report analyzes the 11.2 square mile Sparkill Creek watershed. The report noted that during Hurricane Sandy, about 300 individuals were evacuated from homes and businesses in the Village of Piermont. The report also highlights the 1,000-acre Piermont Marsh, located at the edge of the village of Piermont where Sparkill Creek meets the Hudson River Estuary and notes coastal wetlands' importance to protect communities from flooding and erosion.

As part of the flood mitigation analysis, the Village of Piermont is within High-Risk Area #1. Flooding in this area is very affected by tidal surges on the Hudson River Estuary. Even during low tide on the Hudson River Estuary, the 10-year flood event inundates a section of Piermont Avenue (between Rockland Avenue and Ferdon Avenue) and floods in the vicinity of Piermont Avenue and Bridge Street, Paradise Avenue, Liberty Street, and Ohio Street. During high tide, nearly all of Piermont Avenue and Ferdon Avenue (downstream of Rockland Avenue) is flooded. Flooding of 3-5 feet occurs along Paradise Avenue, Liberty Street, and Ohio Street and the deck of the Ferdon Avenue Bridge is overtopped. According to FEMA data, in 2019, there were 16 properties that were identified as repetitive loss or severe repetitive loss. The modeling analysis projected an 18-inch "medium" sea level rise scenario for the 2050s which showed that flooding of areas in low- and high-tide scenarios are more severe.

The report recommends floodproofing and elevation of pumps and electrical equipment at the sanitary pump station on Ferdon Avenue. The report also looked at the Piermont Paper Company Dam and recommends the removal of the dam and restoration of the Sparkill Creek channel through the former impoundment upstream of the dam would benefit properties along Piermont Avenue and Ferdon Avenue. The report also recommends relocation of the Department of Works facility on Piermont Avenue out of a flood prone area which could be a part of a bundled relocation of flood-prone homes and businesses and other municipal facilities. Regarding individual property flood protection measures, the report recommends individual floodproofing and encouraging property owners to purchase NFIP flood insurance (and making insurance claims when flooding occurs).

The report also highlights flood resiliency best practices related to zoning codes including elevation and screening techniques, bulk and area requirements, and other code revisions. Table 6-2 provides an audit of the Village's codes. A preliminary analysis shows that specific elevation

design and screening criteria could be added to the zoning code for flood-elevated structures. Additionally, the Village could provide flexibility to permit modifications to setbacks, impervious coverage, and maximum heights to permit structures over the BFE. The code could also restrict or ban construction within riparian buffer areas and remove areas that continuously flood from density calculations.

3.1.5 Orangetown Draft Comprehensive Plan (March 2023)

Orangetown is in the process of updating their comprehensive plan which includes the boundaries of the Village of Piermont in their assessments. While the Town of Orangetown has separate zoning from Piermont, it does share many of the goals that are consistent with the vision for Piermont including goals related to Community Character and Historic Resources; Transportation, Mobility and Parking; Economic Development and Downtown Revitalization; Open Space and Recreation; and Sustainability and Climate Resiliency which are all themes for the Piermont Comprehensive Plan.

Some of the goals which are mentioned in the report include:

- Maintain the Town's community and neighborhood character while balancing the need for growth and development.
- Preserve History, open space, and hamlet center character, while promoting a diversity of housing options in appropriate neighborhoods to ensure members of the community have quality housing.
- Strengthen the Town's transportation network for vehicles, pedestrians, and alternative modes of mobility.
- Promote sustainable development and plan for climate resiliency.
- Preserve the Town's natural resources and increase access to parks and open space.
- Provide a healthy economic environment for community-based businesses that maintain the Town's tax base and provide jobs and services to the Town's residents.

3.1.6 Rockland County Comprehensive Plan (March 2011)

Rockland County most recently completed a master plan in 2011 which began in April of 2006 when the Legislature approved to start the process of developing a comprehensive plan that would provide guidance for future municipal planning and zoning actions service as the basis for all County government planning and development issues. The plan looked to preserve the qualities of Rockland County which residents have appreciated throughout the years while recognizing the challenges facing the county including affordable housing, jobs, traffic congestion, preservation of the natural and scenic qualities of the Hudson River and county, provision of adequate infrastructure and preservation of open space and other environmental resources. The plan is based on the following goals:

Land Use and Sustainability

- Conserve open space
- Promote conservation subdivision design to help conserve valuable and sensitive open space.
- Reinforce existing county centers through investment in infrastructure and housing, and support of businesses.
- Foster and maintain well‐designed business and industrial corridors and clusters.
- Encourage smart growth, while preserving quality‐of‐life and existing community and neighborhood character.
- Acknowledge the impact of climate change on planning and County operations. Develop strategies for County departments to explore sustainable development measures and "green" technology to adapt to and mitigate the effects of climate change.
- Foster a balance between the home rule authority of Rockland's municipalities with the legitimate concerns of adjoining communities.

Transportation

- Promote integrated vehicular, mass transit, paratransit, bicycle, and pedestrian transportation infrastructure for an efficient network of roadways, railways, and pathways.
- Enhance mobility and accessibility to provide greater choices of travel for all, including the growing aging population.
- Work to reduce dependence on the automobile as the major mode of ground transportation and increase the use of public transport.
- Promote and enhance safety for motorists, pedestrians, and cyclists.

Economy

- Foster opportunities for the growth of businesses in the county.
- Ensure a broad range of employment opportunities for residents.
- Maintain a strong tax base for the county, communities, and taxing jurisdictions.
- Protect the county's diminishing stock of developable commercial land from rezoning to ensure a balanced and stable tax base and local employment opportunities.

Neighborhoods, Housing, and Services

- Expand housing opportunities for Rockland County's diverse population.
- Promote high‐quality residential communities with a range of appropriate densities.
- Work with municipalities to protect historic resources and support cultural uses.
- Provide sufficient and affordable housing stock for the aging and young adult populations, caregiver work force, and emergency‐service volunteers.
- Ensure that educational and community facilities and services adequately and equitably serve Rockland County's current and projected population.

Open Space and the Environment

- Improve parks and expand open space in high‐density areas.
- Provide recreational resources serving the diverse needs of the population.
- Preserve and protect farmland and historic, cultural, and water resources.
- Ensure physical and visual access to the Hudson River.

Energy

- Encourage energy efficiency and purposeful conservation in all facets of development and redevelopment.
- Promote a whole‐building approach to sustainability in the areas of site development, water savings, energy efficiency, materials selection, indoor and outdoor environmental quality, and human and environmental health.

3.1.7 Mid-Hudson Regional Sustainability Plan (March 2013)

The Mid-Hudson Regional Sustainability Plan was developed through extensive research and a consensus building process that included a series of stakeholder's meetings throughout the Mid-Hudson Region of New York State which consists of the seven counties located immediately north of New York City: Westchester County, Rockland County, Orange County, Dutchess County, Orange County and Sullivan County. The process, which took eight months began with the formation of a planning Consortium consisting of senior representatives from each of the region's counties as well as local non-governmental organizations representing business, municipalities and engaged citizen. The collaboration was used to set realistic yet ambitious objectives for the long-term sustainable development of the region. The vision for sustainable development included the following building blocks for the region namely:

- A diverse natural Environment
- A vibrant economy
- Strong transportation accessibility and connectivity
- Exceptional quality of life
- Numerous existing cities, village, and denser hamlets

The plan also discussed setting major goals with regards to climate change including reducing the Regions Overall Contribution to climate change and increasing the regions' resilience to adapt to a changing climate. Another major theme of the plan was creating an economic development strategy with a focus on the following objectives:

- ED1- Invest in Tech
  Target job creation investments in identifiable industry 'clusters' such as biotech, biomedical and healthcare; advanced manufacturing; and information technology.
- ED2 – Attract and Retain Mature Industries

Undertake initiatives to retain and stimulate more mature industries such as distribution, financial and professional services, and corporate food and beverage, as these sectors represent large, vital anchor industries in the Mid-Hudson economy.

- ED3- Grow Natural Resource-Related Sectors
  Leverage the Region's outstanding natural resources, including its unique location between the Hudson River, Delaware River, and Long Island Sound, to sustain and promote waterfront development and industries including agriculture, tourism, artisanal food and beverage, and recreation. Additionally, it is vital that these industries preserve the Region's unique quality of life.
- ED4 – Revitalize
  Support building projects that improve key regional infrastructure to make the Region more business-ready; foster housing investment to create construction jobs and more housing supply; and support the revitalization of our urban centers as engines of regional prosperity.

3.1.8 Hudson Valley Region Comprehensive Economic Development Strategy (2021 Update to the 5-year CEDS 2019-2023)

The most recent comprehensive economic development strategy update was completed for the year 2021 in December of 2022 and addressed how the region has changed with relation to the 2020 COVID Pandemic and also the new emerging trends which have effected the region including the disruption of the leisure and hospitality sectors, the acceleration of the transportation, distribution and warehousing industries and the acceleration to remote work which have required the stand-alone office parks to evolve into smaller, mixed-use facilities.

According to the update Rockland County has utilized its $63 Million in COVID relief to make long-term improvements to its economic prospects. The plan specifically refers to a growth in Outdoor recreation-based tourism with recent trail improvements that have linked Piermont to the Orange County Border. The county has also seen other downtown revitalization efforts including the Reviving Rockland Restaurants Grant Program which utilized $500,000 in ARPA funds to reimburse businesses between $5,000 and $25,000 for past expenses or future fund expenses for eligible outdoor dining COVID-19 mitigation equipment.

The overall CEDS from 2019 does identify 4 goals for the region which are consistent with the goals of the update. The goals are the following:

- Improve Economic Competitiveness through Physical Infrastructure Connections
- Improve Resiliency and Economic Competitiveness through connections to support the capacity for regional planning for municipal sewer and water infrastructure as a template for other types of regional infrastructure planning.

- Improve Economic Competitiveness through connections to Strengthen the Availability of a Skilled Workforce.
- Support Connectivity for Regional Prosperity.

3.2 Demographics and Economic Inventory and Analysis

Key Takeaways

- **The population over the past 20 years is stable, indicative of a built-out community.**
- **There is both a healthy population growth of the young adult population, and a significant percentage of seniors aging in place.**
- **Household incomes have grown over the past 10 years outpacing the surrounding County trends.**
- **Recently there has been a significant Increase in healthcare practitioners & technical occupations, and education, legal, community services, arts, & media occupations.**
- **Piermont is a highly educated, primarily white-collar working community.**
- **Generally, Piermont is a community with a high median Income for households and families.**
- **There was a slight reduction of the number of total single-family housing units between 2010 and 2020.**
- **A significant proportion of the existing housing units were constructed before 1939 and only a few units have been constructed within the last 10 years, reflecting an established housing stock.**
- **The median housing price within the community is higher than in Rockland County and New York State with a higher median housing cost for owned units than rented units.**

In order to properly plan for the Village of Piermont, it is necessary to understand the socioeconomic trends of the Village. Piermont is in southeastern Rockland County. The Village is along the Hudson River and was developed as a railroad terminal to provide access from the river inland to destinations in Rockland County and beyond. Development pressure has and will continue to exert itself on the community as a result of housing demands within the metropolitan region. This section analyzes the socioeconomics trends of the Village in order to better inform future land use policies.

The demographic review relies on data available from the 2000, 2010, and 2020 U.S. Census. The data are also supplemented by the most recent American Community Survey (ACS) data which are gathered annually. All data sets are gathered by the US Census Bureau.

Additional demographic and economic data were retrieved from ESRI Business Analyst, a demographic software application. ESRI Business Analyst was used to analyze demographic trends at the village planning area levels. While there is some margin of error with this tool when used in smaller villages, the data does provide a useful glimpse into existing conditions and general trends.

3.2.1 Population Trends

The Village of Piermont is one (1) of 24 municipalities in Rockland County. The Village is home to 2,517 residents, an increase of 354 residents in the 30-year period between 1990 and 2020. Piermont is a village located within the Town of Orangetown

Table 3.2.1-1 displays the population changes since 1980 for New York State, Westchester County, Town of Orangetown and Piermont. Piermont grew significantly during the post-World War II period, however, over the last 40 years Piermont has retained population and grew at a rate of 10.9 percent (248 residents). This is a slower rate than the surrounding County (30.4 percent). Since 2000, the data identifies a slight decline in Piermont's population (90 residents). This is within the standard of error and indicates that the population of Piermont has remained stable.

Table 3.2.1-1. State, County, and Town Population Change: 1980 to 2020

Jurisdiction	1980	1990	2000	2010	2020	Percent Change: 1980 to 2020
New York State	17,558,072	17,990,455	18,976,457	19,378,102	20,201,249	15.1%
Rockland County	259,530	265,475	286,753	311,687	338,329	30.4%
Town of Orangetown	48,612	46,742	47,711	49,212	48,655	0.1%
Village of Piermont	2,269	2,163	2,607	2,510	2,517	10.9%

Source: 1980, 1990, 2000, 2010, and 2020 Decennial Census.

In general, Piermont has a high population density when compared to the surrounding area. **Table 3.2.1-2** displays persons per square mile in 2010 and 2020 for Rockland County, the Town of Orangetown and Piermont. Piermont has a land area of approximately 0.67 square miles without waterbodies with nearly 3,757 persons per square mile. This is significantly greater than both the Town of Orangetown (2,022 persons per square mile) and Rockland County (1,949 persons per square mile).

Table 3.2.1-2. Persons Per Square Mile

Jurisdiction	Land Area	2010	2020
Rockland County	173.55 sq. miles	1,796	1,949
Town of Orangetown	24.06 sq. miles	2,045	2,022
Village of Piermont	**0.67 sq. miles**	**3,746**	**3,757**

Source: 2010, 2020 Decennial Census.

While Piermont did experience a more dramatic increase in population over its early years, today it remains a built-out river community today with a stable population.

As the Village's overall population has changed, the race and ethnic makeup of the Village has also changed. In the year 2000, the Village's population that identified as "white" was 86.1 percent of the total population. The Village's population has diversified since, with the greatest increase occurring in the two or more races population, which now comprises nearly nine (9) percent of the Village's population. The "white alone" population declined and now comprises 74.7 percent of the Village's population. **Table 3.2.1-3** displays the race and ethnicity of the Village and County in 2010 and 2020. Rockland County has a greater mix of race and ethnicity with higher percentage of Other Identified Race, Hispanic, and Black or African American persons when compared to Piermont but lower rates of two or more races or Asian American persons with a smaller population of whites alone in Rockland County.

Table 3.2.1-3. Population by Race/Ethnicity

	Village of Piermont				Rockland County	
	2010		2020		2020	
	Count	Percent of total	Count	Percent of total	Count	Percent of total
Total Persons	2,510	100%	2,517	100%	338,329	100%
White Alone	2,160	86.1%	1,879	74.7%	214,890	63.5%
Black or African American Alone	84	3.4%	82	3.3%	35,542	10.5%
American Indian and Alaska Native Alone	1	<1%	5	<1%	1,716	<1%
Asian Alone	152	6.1%	201	8.0%	20,685	6.1%
Pacific Islander Alone	0	0%	5	<1%	110	<1%
Some Other Race Alone	60	2.4%	129	5.1%	38,086	11.3%
Two or More Races	53	2.1%	216	8.6%	27,300	8.1%
Hispanic Origin	248	9.9%	298	11.8%	66,451	19.6%

Source: 2010 and 2020 Decennial Census.
Note: Numbers may add up to more than 100% due to rounding.

The Village has a significant established older population, but it appears as if newer families are settling in the village. While the village is losing population overall from ages 5-24 age since 2010, there has been an increase in the 25-34 category. This may result from new householders and young adults who have moved to the Village and some young adults remaining in their existing households. There has also been an increase in 75-85+ years, which likely signifies householders that are aging in place. The age distribution for the Village of Piermont is very different than Rockland County as the population skews on the older side which is reflective in having a greater population percentage over the age of 25.

In contrast to much of New York State while the Village's median age is slightly decreasing a substantial proportion of the village is part of an aging baby boomer population. Since 2010, the median age has slightly decreased from 51.1 years old to 49.1 years old in 2020. This is older than the County (35.9 years) and the State (39.0 years) median ages in 2020. Also, communities that are more affluent and which have access to desirable amenities are also likely to attract both older households and young professionals as reflected by the demographic trends.

Table 3.2.1-4 presents the population by age group. It should be noted that the ACS Five-Year Estimate was used for age segment data. The population totals of the ACS differ slightly from the Decennial Census data shown in previous charts. This is due to the ACS being a projected estimate, whereas the Decennial Census is a population count.

Table 3.2.1-4. Population by Age Segment

	Village of Piermont					Rockland County	
	2010		2020		Change % 2010-2020	2020	
	Count	Percent of total	Count	Percent of total		Count	Percent of total
Total Persons	2,510	100%	2,517	100%	-	338,329	100%
0-4	88	3.5%	164	6.5%	86.2%	27,405	8.1%
5-9	80	3.2%	60	2.4%	-24.8%	25,375	7.5%
10-14	123	4.9%	55	2.2%	-55.0%	26,728	7.9%
15-24	131	5.2%	116	4.6%	-11.3%	46,689	13.8%
25-34	369	14.7%	468	18.6%	26.9%	38,908	11.5%
35-44	324	12.9%	277	11.0%	-14.5%	37,555	11.1%
45-54	243	9.7%	327	13.0%	34.4%	41,276	12.2%
55-64	628	25.0%	506	20.1%	-19.4%	40,938	12.1%
65-74	387	15.4%	352	14.0%	-8.8%	28,758	8.5%
75-84	85	3.4%	138	5.5%	62.2%	16,578	4.9%
85+	50	2.0%	53	2.1%	5.3%	7,782	2.3%
Median Age	51.1		49.1			35.9	

Source: 2010 and 2020 ACS, Five-Year Estimate.
Note: Numbers may add up to more than the total due to rounding.

Piermont's 2020 average household (includes both family and non-family households) size is 2.07, which is smaller than the County household size of 3.15 persons. The 2020 average family size is 2.78 for the Village, which is significantly less than the County's average family size of 3.71. The majority of the village's households consist of a relatively even split of family households (54.6 percent) and non-family households (45.4 percent), with 60.6 percent of households consisting of married couples[1], and 37.2 percent of households having children under the age of

[1] 2020 American Community Survey Five-Year Estimate

18[2]. Table 3.5 displays the household size of family and non-family households. Approximately 72 percent of all households contain two (2) people or less. The United States Census Bureau defines a nonfamily household as "a householder living alone (a one-person household) or where the householder shares the home exclusively with people to whom he/she is not related.

Table 3.2.1-5. Piermont Population by Size

Types of Households	2020	Percent of Total
Family Households	668	54.6%
2-Person	327	26.7%
3-Person	179	14.6%
4-Person	144	11.8%
5-Person	18	1.5%
6-Person	0	-
7+ Person	0	-
Nonfamily Households	556	45.4%
1-Person	473	38.6%
2-Person	83	6.8%
3-Person	0	-
4-Person	0	-
5-Person	0	-
6-Person	0	-
7+ Person	0	-

Source: 2020 American Community Survey Five-Year Estimate

[2] 2020 American Community Survey Five-Year Estimate

3.2.2 Socioeconomic Trends

The Village of Piermont is a well-educated community. **Figure 3.2.2-1** shows the Village's educational attainment levels. Approximately 82 percent of the Villages' population has obtained some college or higher education level. Approximately 13 percent of the population received a high school diploma only, with only 5 percent of the population never graduating high school. In comparison, 68.1 percent of Rockland County residents obtained some college or higher education levels, with 22.3 percent receiving a high school diploma only, and 9.6 percent never graduating high school.[3]

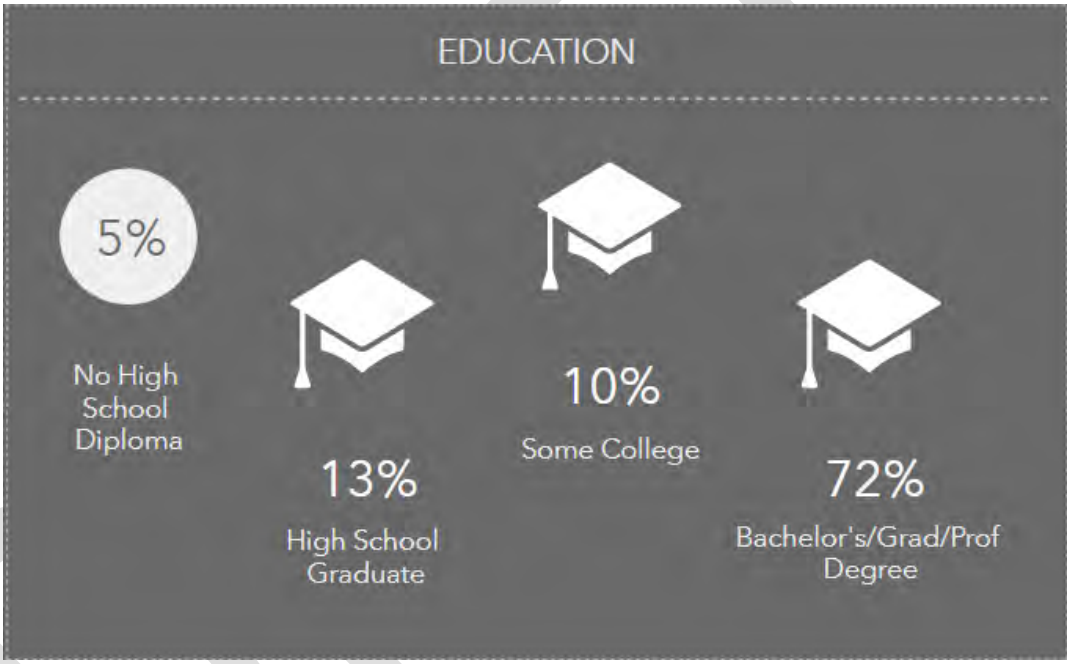


Figure 3.2.2-1. Educational attainment levels in Piermont
Source: ESRI Business Analyst, 2020.

In the last decade, median and mean household incomes and per capita income have increased in Piermont. The median income increased from $92,045 in 2010 to $124,840 in 2020. By comparison, Piermont's median income in 2000 was $61,591.[4] In 2010, it was estimated that 23.0 percent of all households earned $200,000 or more. By 2020, 20.8 percent of the population earned that amount (**Table 3.2.2-1**). Note that incomes tend to rise as inflation and cost of living increases. The 2010 estimates also would reflect trends in income levels due to the Great Recession.[5] Compared to the County, the Village of

[3] ESRI Business Analyst 2020
[4] 2000 Decennial Census
[5] Economic recession that occurred in US and globally, generally from about 2007 to 2009

Piermont's residents have higher incomes. Rockland County's median income is $94,840.[6]

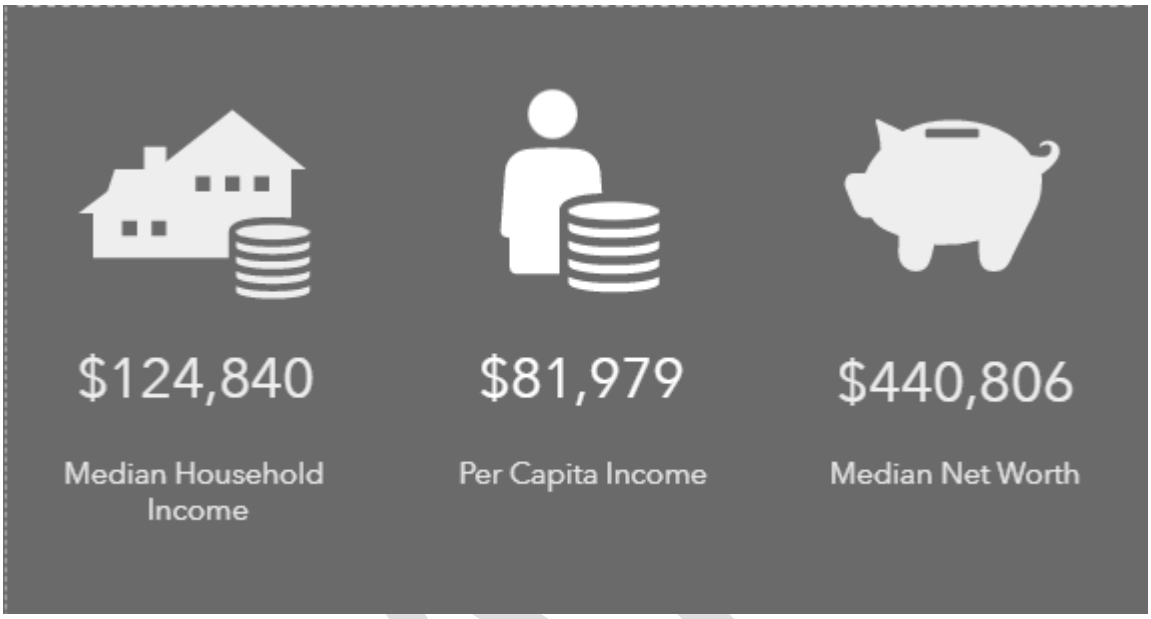


Figure 3.2.2-2 Income Summary of Piermont
Source: ESRI Business Analyst, 2020.

There has been a noticeable shift in household income levels in Piermont since 2010. The income levels in terms of percentages have shifted from a growth of people making over $50,000 to people making over $75,000. The household income of people earning between $50,000 – 74,000 decreased from 15.6% in 2010 to 9.6% in 2020 while the percentage of households earning between $75,000 and $199,999 increased from 2010 to 2020. It should be noted that the COVID-19 pandemic may have impacted household income levels in 2020.

[6] 2020 American Community Survey Five-Year Estimate

Table 3.2.2-1 Piermont Income

	2010	2020
Total Households	1,310	1,224
	Percent of Total	**Percent of Total**
<$10,000	3.6%	1.8%
$10,000 - $15,000	0.8%	0.5%
$15,000 - $24,999	3.4%	0.7%
$25,000 - $34,999	7.3%	4.1%
$35,000 - $49,999	8.4%	10.9%
$50,000 - $74,999	15.6%	9.3%
$75,000 - $99,999	14.0%	15.4%
$100,000 - $149,999	17.2%	19.7%
$150,000 - $199,999	6.7%	16.8%
$200,000+	23.0%	20.8%
Median household income	$92,045	$124,840
Mean household income	$129,292	$147,946
Median family income	$107,250	$152,727
Per capita income	$71,725	$83,921

Source: 2010 and 2020 American Community Survey, Five-Year Estimate.

As shown in **Figure 3.2.2-3**, most of the Village's residents have white collar jobs. **Table 3.2.2-2** displays the employment of the Village's residents by industry in the Village of Piermont. Approximately 1,607 residents 16 years and over in Piermont are employed. Since 2010, industries that have experienced growth among workers are the information; manufacturing; retail trade; public administration; and Professional, scientific, and management, and administrative and waste management services industries. Industries that have seen significant declines since 2010 include wholesale trade; transportation, warehousing, and utilities; and Arts, entertainment, recreation, accommodation & food services industries.

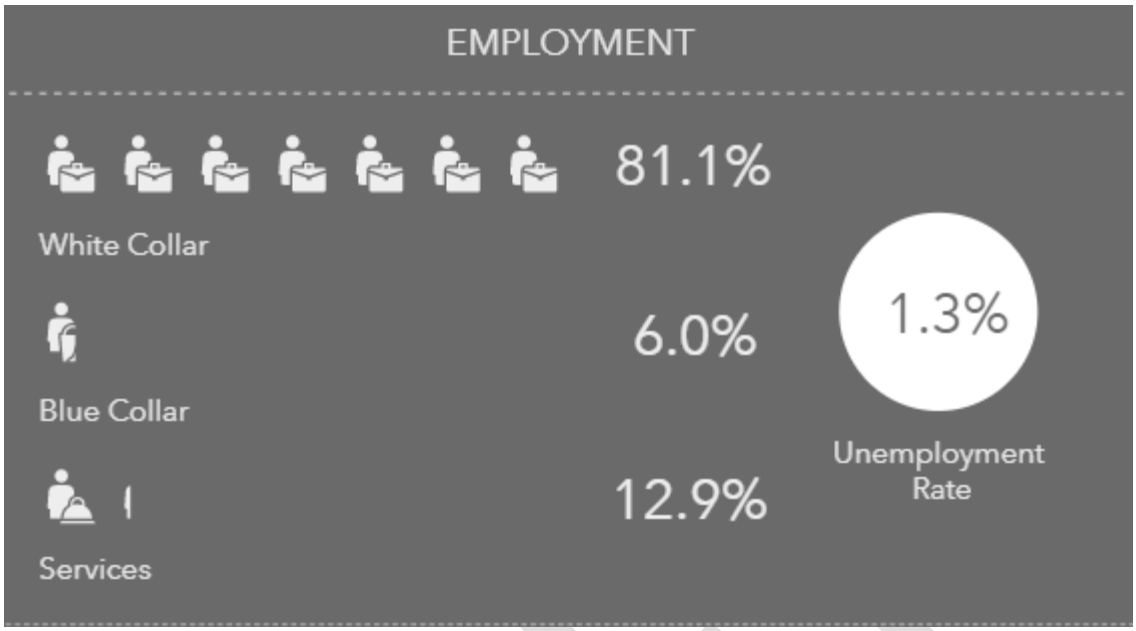


Figure 3.2.2-3. Employment Summary of Piermont
Source: ESRI Business Analyst, 2020.

Table 3.2.2-2 Piermont by Employment Industry

Industry Grouping	2010		2020	
	Count	Percent of total	Count	Percent of total
Civilian employed population 16 years and over	1,534	-	1,607	-
Agriculture, forestry, fishing and hunting, mining	0	0.0%	0	0.0%
Construction	75	4.9%	79	4.9%
Manufacturing	81	5.3%	223	13.9%
Wholesale trade	116	7.6%	32	2.0%
Retail trade	92	6.0%	142	8.8%
Transportation and warehousing, and utilities	71	4.6%	21	1.3%
Information	70	4.6%	86	5.4%
Finance and insurance, and real estate and rental and leasing	143	9.3%	70	4.4%
Professional, scientific, and management, and administrative and waste management services	209	13.6%	237	14.7%
Educational services, and health care and social assistance	476	31.0%	487	30.3%
Arts, entertainment, and recreation, and accommodation and food services	157	10.2%	73	4.5%
Other services, except public administration	44	2.9%	92	5.7%
Public administration	0	0.0%	65	4.0%
Source: 2010 and 2020 American Community Survey, Five-Year Estimate.				

Table 3.2.2-3 displays employment by occupational category in the Village of Piermont. Approximately 66 percent of Village residents work in management, business, and financial occupations; occupations related to education, legal, community services, arts, and media; or sales and office occupations. Of note, management, business & financial occupations have declined in the last decade, from 27.8 percent in 2010 to 21.7 percent in 2020 while Healthcare practitioners and technical occupations have increased from 1.8 percent in 2010 to 9.9 percent in 2020. Other occupational categories have remained relatively constant since 2010.

Table 3.2.2-3 Piermont Employment by Occupational Category

Industry Grouping	2010		2020	
	Count	Percent of total	Count	Percent of total
Civilian employed population 16 years and over	1,534	-	1,607	-
Management, business, and financial occupations	426	27.8%	348	21.7%
Computer, engineering, and science occupations	103	6.7%	95	5.9%
Education, legal, community services, arts, and media occupations	261	17.0%	332	20.7%
Healthcare practitioners and technical occupations	27	1.8%	159	9.9%
Service occupations (Health care support, law enforcement, firefighting, etc.)	129	8.4%	111	6.9%
Sales and office occupations	395	25.7%	380	23.6%
Natural resources, construction, and maintenance occupations	90	5.9%	49	3.0%
Production, transportation, and material moving occupations	103	6.7%	133	8.3%

Source: 2010 and 2020 American Community Survey, Five-Year Estimate.

Table 3.2.2-4 displays the top commuting destination for Piermont residents in 2019 according to data from the U.S. Census OnTheMap tool. The most common commuting cities were New York City (26.1 percent) and New City, New York (3.0 percent). In general, 15.1 percent of Piermont residents are employed in Rockland County. **Figure 3.2.2-4** shows these population commuting destinations in map-form.

Table 3.2.2-4 Piermont 2020 Commuting Destinations

Commuting Destination	Count	Percent of Total
New York City, NY	274	26.1%
New City, NY	32	3.0%
Piermont, NY	31	3.0%
Yonkers, NY	28	2.7%
Orangeburg, NY	25	2.4%
Nanuet, NY	20	1.9%
Nyack, NY	18	1.7%
Pearl River, NY	18	1.7%
Harrison, NY	17	1.6%
Blauvelt, NY	15	1.4%
All other locations	572	54.5%

Source: 2020 U.S. Census, OnTheMap Tool

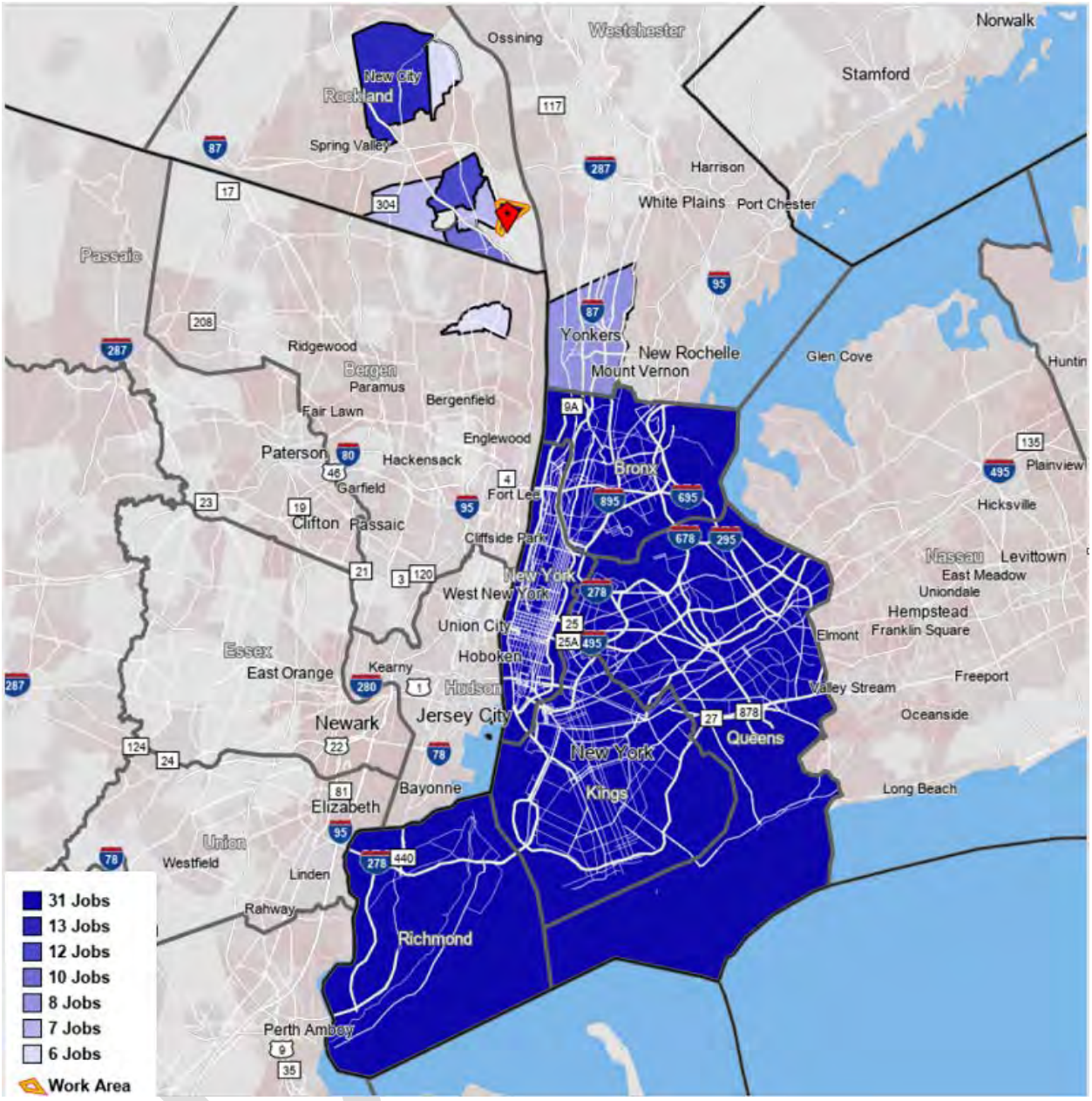


Figure 3.2.2-4. A map showing where Piermont residents commute to work
Source: U.S. Census OnTheMap.

The U.S. Census Bureau collects and maintains information on the "means of transportation to work by selected characteristics." As per the 2020 American Community Survey data, **Table 3.2.2-5** provides information on the commuting patterns of the residents of Piermont. The majority of residents drove alone to work (64.5%), whereas only 8.3 percent carpooled. Approximately 3.1 percent walked to work, and 11.5 percent used public transportation. An additional 15.3 percent worked from home, but this number does not fully reflect the shift in working from home due to the COVID pandemic.

Table 3.2.2-5. Means of Transportation to Work

Means of Transportation	2020 ACS 5-Year Estimate	
	Persons	Percent
Workers 16 years and over	1,602	100%
Car, truck, or van - drove alone	1034	64.5%
Carpooled	133	8.3%
Public transportation (excluding taxicab)	130	8.1%
Walked	57	3.6%
Other means	28	1.7%
Worked from home	220	13.7%

Source: 2016 – 2020 American Community Survey 5-Year Estimates.

The ACS 5-year estimates also provide information on the resident's travel time to work. A detailed breakdown of this information is given in **Table 3.2.2-6**. In the Village, the average travel time to work was 31.9 minutes. Commuting time of 90 or more minutes is the most common at 16.0 percent, followed by a commute of 20 to 24 minutes. Approximately 49% of residents have a commuting time of less than 30 minutes.

Table 3.2.2-6. Travel Time to Work One-Way

Travel Time	Percent
Less than 10 minutes	13.2%
10 to 14 minutes	9.3%
15 to 19 minutes	9.0%
20 to 24 minutes	14.0%
25 to 29 minutes	3.4%
30 to 34 minutes	5.9%
35 to 44 minutes	5.9%
45 to 59 minutes	8.1%
60 to 89 minutes	12.4%
90 or more minutes	16.0%
Mean travel time (minutes)	31.9

Source: 2016 – 2020 American Community Survey 5-Year Estimates.

3.2.3 Housing

The 2010 and 2020 U.S. Census Bureau decennial censuses were used to estimate total housing units and occupied housing units for the Village of Piermont and Rockland County. As per **Table 3.2.3-1,** the total number of housing units in the Village has been in decline, experiencing a 2.9 percent decrease in the last decade from 1,484 to 1,441 housing units. This is the highest ten (10) year decrease in housing units within the last 30 years. In 1990, Piermont had 975 housing units and in 2000 it had 1,320 housing units.

Table 3.2.3-1 demonstrates that the Village of Piermont has a smaller percentage of renter-occupied housing (54.1 percent) when compared to Rockland County (64.4 percent). In 2020, the percentage of occupied housing reduced from 88.3 percent in 2010 to 84.9 percent in 2020 reflecting both the reduction in housing units and expansion of vacant housing within Piermont Village.

Table 3.2.3-1 Town and County Housing Units and Occupancy

	Rockland County					Village of Piermont				
	2010		2020		Rate of Change	2010		2020		Rate of Change
	Units	Percent of total	Units	Percent of total		Units	Percent of total	Units	Percent of total	
Total housing units	102,553	___	106,621	___	4.0%	1,484	___	1,441	___	-2.9%
Occupied housing units	97,557	95.1%	101,167	94.9%	3.7%	1,310	88.3%	1,224	84.9%	-6.6%
Owner occupied	69,300	67.6%	68,703	64.4%	-0.9%	887	59.8%	779	54.1%	-12.2%
Renter occupied	28,257	27.6%	32,464	30.4%	14.9%	423	28.5%	445	30.9%	5.2%

Source: 2020, 2010 American Community Survey 5-Year Estimates.

Table 3.2.3-2 provides an estimate of the total number of housing units and housing units in a structure in the Village of Piermont. From 2010 to 2020, the U.S. Census estimates show significant decrease in the total number and share of single-family detached dwelling units in the Village. This is another indication that the Village has a more diverse housing stock which is oriented towards multi-family uses. Townhomes (single-family attached housing units) account for 7.1 percent of the housing stock and two-family homes account for 8.3 percent Over Half (50.6 %) village's housing stock consists of housing structures with three units or greater.

Table 3.2.3-2. Number of Units in a Structure

	2010	Percent of Total	2020	Percent of Total
Total Housing Units	1,484	___	1,441	___
1-unit, detached	626	42.2%	489	33.9%
1-unit, attached	128	8.6%	103	7.1%
2 units	116	7.8%	120	8.3%
3 or 4 units	77	5.2%	90	6.2%
5 to 9 units	209	14.1%	203	14.1%
10 to 19 units	77	5.2%	111	7.7%
20 or more units	251	16.9%	325	22.6%
Mobile home	0	0.0%	0	0.0%
Boat, RV, van, etc.	0	0.0%	0	0.0%

Source: 2020, 2010 American Community Survey, Five-Year Estimate.

Table 3.2.3-3 displays housing units in Piermont by year built. Approximately 75 percent of Village's housing stock was built before 1980, with thirty-eight (38) percent constructed before 1960. About ten (10) percent of the housing stock was built since the year 2000. ESRI Business Analyst estimates that the median year a housing unit was built was in 1971. This indicates that the overall housing stock in Piermont is older, with a median age of 52 years. However, the Village of Piermont has about the same median housing year when compared to Rockland County which has a median housing year built of 1970. This indicates that the housing stock, in general, is on par with the rest of the County.

The data displayed in **3.2.3-3** show that the Town's development expanded after 1960 but there remains a sizable number of housing units developed before 1939.

Table 3.2.3-3. Housing Units by Year Built

	2020	Percent of Total
Total	1,441	___
Year Built		
2010 or later	15	1.0%
2000 to 2009	135	9.3%
1990 to 1999	205	14.2%
1980 to 1989	211	14.6%
1970 to 1979	124	8.6%
1960 to 1969	191	13.3%
1950 to 1959	40	2.8%
1940 to 1949	65	4.5%
1939 or earlier	456	31.6%

Source: 2020 American Community Survey, Five-Year Estimate.

Table 3.2.3-4 displays the owner-occupied housing values within the Village in 2020. The median value is $566,800. Approximately 82.2 percent of Piermont's owner-occupied housing is valued at greater than $300,000, with a significant portion (46.3 percent) valued between $500,000 to $999,999. In 2020, Rockland County had a median housing value of $452,500.[7]

Home prices have fluctuated since 2020 due to the pandemic and increased housing demand in the Hudson Valley. However, recent increases in mortgage rates are likely to reduce housing prices or stabilize the market.

[7] 2020 American Community Survey, Five-Year Estimate

Table 3.2.3-4. Village of Piermont Owner-Occupied Housing Units by Value

	2020	Percent of Total
Total	484	___
Less than $50,000	0	0.0%
$50,000 to $99,999	0	0.0%
$100,000 to $149,999	0	0.0%
$150,000 to $199,999	107	13.7%
$200,000 to $299,999	31	4.0%
$300,000 to $499,999	193	24.8%
$500,000 to $999,999	361	46.3%
$1,000,000 or more	87	11.2%
Median Value	$566,800	

Source: 2020 American Community Survey, Five-Year Estimate.

The median monthly owner-occupied housing costs for households with and without a mortgage are $3,120 and $1,500, respectively (**Table 3.2.3-5**). The median household income of an owner-occupied household is $152,634. By contrast, the median monthly rent is $1,864 (**Table 3.2.3-6**), and the median household income for renters was $87,625.[8]

[8] 2020 American Community Survey Five-Year Estimate

Table 3.2.3-5. Village of Piermont Owner-Occupied Housing Units by Monthly Costs

	2020	Percent of Total
Occupied units paying mortgage	484	
Less than $500	0	0.0%
$500 to $999	0	0.0%
$1,000 to $1,499	85	17.6%
$1,500 to $1,999	31	6.4%
$2,000 to $2,499	18	3.7%
$2,500 to $2,999	91	18.8%
$3,000 or More	259	53.5%
Median (dollars)	$3,120	
Occupied units without a mortgage	295	
Less than $400	0	0.0%
$400 to $999	49	16.6%
$1,000 to $1,499	69	23.4%
$1,500 or more	177	60.0%
Median (dollars)	$1,500	

Source: 2020 American Community Survey, Five-Year Estimate.

Table 3.2.3-6. Village of Piermont Renter-Occupied Housing Units by Rent Paid

	2020	Percent of Total
Occupied units paying rent	445	
Less than $500	0	0.0%
$500 to $999	122	27.4%
$1,000 to $1,499	8	1.8%
$1,500 to $1,999	127	28.5%
$2,000 to $2,499	72	16.2%
$2,500 to $2,999	93	20.9%
$3,000 or more	23	5.2%
Median (dollars)	$1,864	

Source: 2020 American Community Survey, Five-Year Estimate.

While Piermont is identified within the Rockland Consolidated Plan as having higher median home values than the typical municipality in Rockland County, it does appear as if Piermont has a lower housing cost burden than the rest of the County. In reviewing the Comprehensive Housing Affordability Strategy Data from the United States Housing and Urban Development plan 42 percent of households spend 30 percent or more of their income on housing costs including 36 percent of homeowners and 55 percent of renters in Rockland County, while only 35.5 percent of households spend more 30 percent or more of their income on housing costs in Piermont including 30.7 percent of homeowners and 45 percent of renters[9]. These values are lower than Rockland County overall, representing that the Village is not as burdened as other communities within the County even if the cost of housing is higher in Piermont than other sections of the County.

Although the HUD data is instructive, the data is limited as it was gathered before the Pandemic. Upon a recent review of the available housing on Zillow in May of 2023, of the 20 residential units which are for sale in Piermont, 17 are priced for over $500,000. As a result, the topic of Housing Affordability should be further discussed and reviewed.

[9] **U.S Department of Housing & Urban Development CHAS data 2015-2019**

3.2.4 Current Business and Market Conditions

The Village of Piermont is a residential community that supports basic commercial uses and services, including a downtown area with smaller boutique marketplaces which support the locals as well as a tourism industry based around the restaurants, marinas and piers.

Based on data from ESRI Business Analyst, the Village of Piermont has approximately 116 businesses that employ approximately 647 persons (Table 3.2.4-1). ESRI's listing of businesses is obtained through "Yellow Pages and business white pages; annual reports; 10-K and Securities and Exchange Commission (SEC) information; federal, state, and municipal government data; business magazines; newsletters and newspapers; and information from the U.S. Postal Service." Major employment sectors in the Village include general services and retail trade. This employment category includes food stores, restaurants, automotive services, health services, and educational services.

Table 3.2.4-1 Businesses and Employees in the Village of Piermont

Business Classification	Business Count	Employees
Services	44	294
Retail Trade	31	205
Construction	7	16
Agriculture & Mining	0	0
Government	5	44
Finance, Insurance, and Real Estate	11	44
Manufacturing	2	15
Transportation	3	15
Wholesale Trade	2	8
Communication	0	0
Unclassified Establishments	11	6
Utility	0	0
TOTAL	**116**	**647**

Source: ESRI ArcGIS Business Analyst Online, 2022.

Many local businesses are part of the Piermont Chamber of Commerce. The benefits of becoming a member include business exposure and internet presence through the

Chamber's website, social media program and promotional campaign as well as inclusion in all the major events throughout the year.[10]

The workers that are employed within the Town are from many areas in New York and New Jersey as documented in **Table 3.2.4-2**. The top three resident locations of Piermont employees are New York City, The Village of Piermont, and New City which, when combined, contribute 25.9 percent of all the employees within the Village of Piermont.

Table 3.2.4-2: Job Counts by Places (Cities, CDPs, etc.) Where Piermont Workers Live, All Jobs

	2020	
Employee Origination	**Count**	**Share**
New York City, NY	31	10.7%
Piermont Village, NY	31	10.7%
New City CDP, NY	13	4.5%
Blauvelt CDP, NY	12	4.1%
Tappan CDP, NY	10	3.4%
Yonkers City, NY	8	2.8%
Orangeburg CDP, NY	7	2.4%
Pearl River CDP, NY	7	2.4%
Closter Borough, NJ	6	2.1%
Congers CDP, NY	6	2.1%
All Other Locations	159	54.8%

Source: U.S. Census, OnTheMap, 2022.

The commercial center of Piermont is primarily centered along Piermont Avenue in a concentrated downtown which spans about 3 blocks along Piermont Avenue. There is also a concentration of commercial areas that surround the Flywheel Park to the south and east of the park. Most of the commercial areas have retail on the first floor with a mix of residential and office above. **Figure 3.2.4-1** shows the main section of the downtown area as well as the businesses located along flywheel park. The business mix within the downtown is tailored towards tourists visiting the area as well as to the locals and consists of a few niche shops which are typical of a downtown of a municipality of this size. Along the center of the corridor is a community market and café along with a number of bistros, coffee shops, restaurants, small clothing, and personal service boutiques. There are also some art galleries which are in the commercial section, which flanks flywheel park along with restaurants, bicycle shops, restaurants, and other small eateries. Beyond the

[10] http://www.piermontchamber.org/about-us

downtown to the north are some restaurants which are located near the Marinas which are along Piermont Avenue along the Hudson River.

Figure 3.2.4-1 : Downtown Piermont

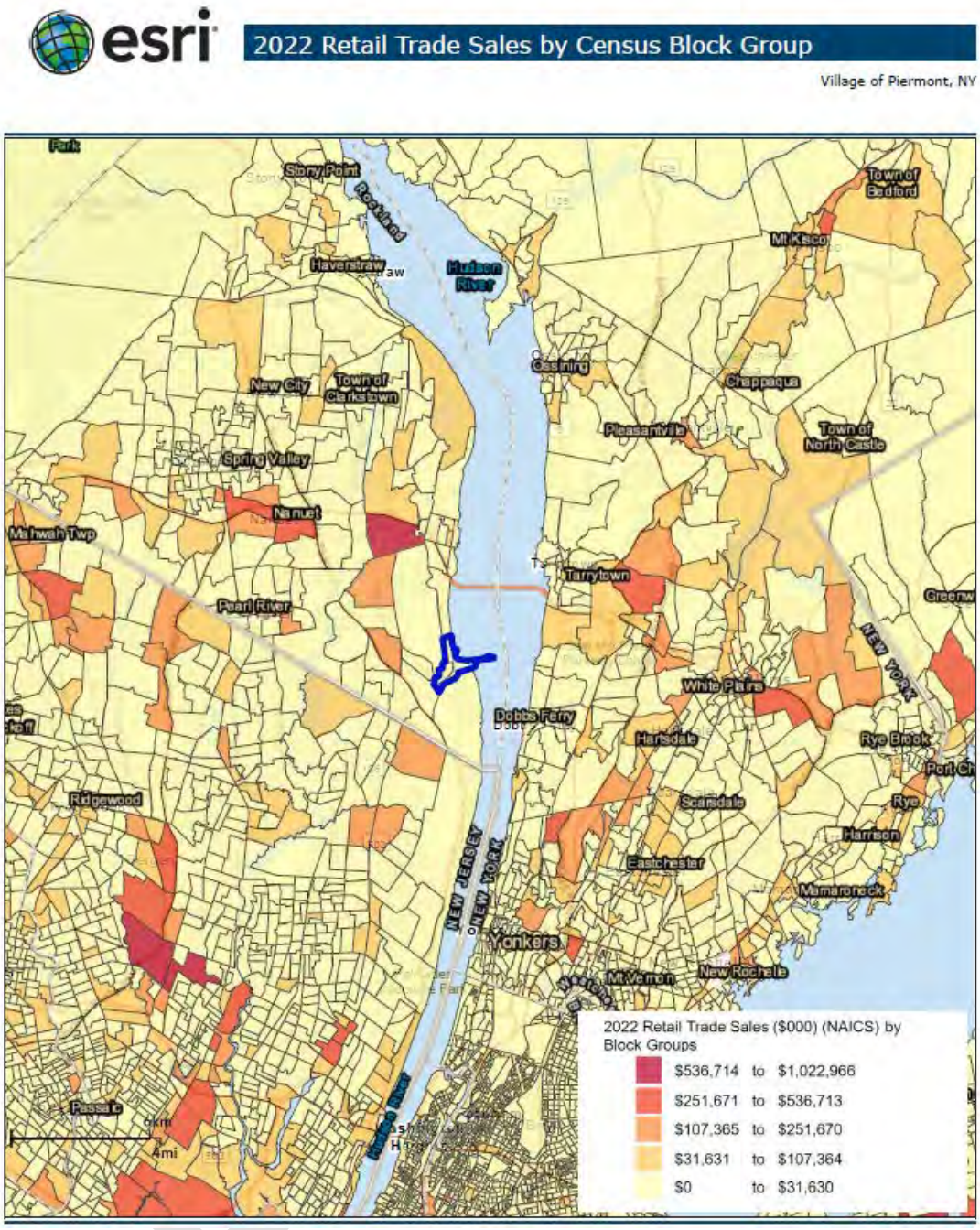
Source: Google Earth, May 2023.

3.2.5 Retail Trade Conditions

The Village of Piermont's consumer commercial uses are concentrated within a traditional mixed-use downtown centered along Piermont Avenue which serves as the principal concentration providing a range of retail, service restaurant, bank, and business offices. The village has a median household disposable income of $101,208 and a per capita income of $81,979[11]

The U.S. Census Annual Retail Trade Survey (ARTS) produces industry-level estimates of sales, expenses, and other items for the retail sector in the United States each year. The ARTS sample covers employer businesses that are classified in the retail trade sector and located in the 50 states and the District of Columbia and can be viewed as an indicator of retail density within a census block group.[12] **Map 3.2.5-1** displays retail trades sales by census block group for 2022. There are a number of census block groups outside of the village which reported much higher annual retail trade sales numbers. Several block groups within the region reported approximate annual retail trade sales numbers over $251,671,000 as well as higher than $536,714,000. These areas include the area surrounding the Palisades Mall in Central Nyack, along Route 59 in Nanuet as well as in downtown White Plains and in Bergen County along Route 17 and Route 4, which all have downtowns, strip malls and shopping centers.

[11] ESRI Business Analyst, 2022
[12] "About the Annual Retail Trade Survey." US Census Bureau. Accessed November 2022. https://www.census.gov/programs-surveys/arts/about.html



Map 3.2.5-1 : Retail Trade Sales by Census Block Group

Source: ESRI Business Analyst, 2023

Map 3.2.5-2 shows the approximate drive time areas within 10 minutes, 20 minutes, and 30 minutes from the Village Hall of Piermont.

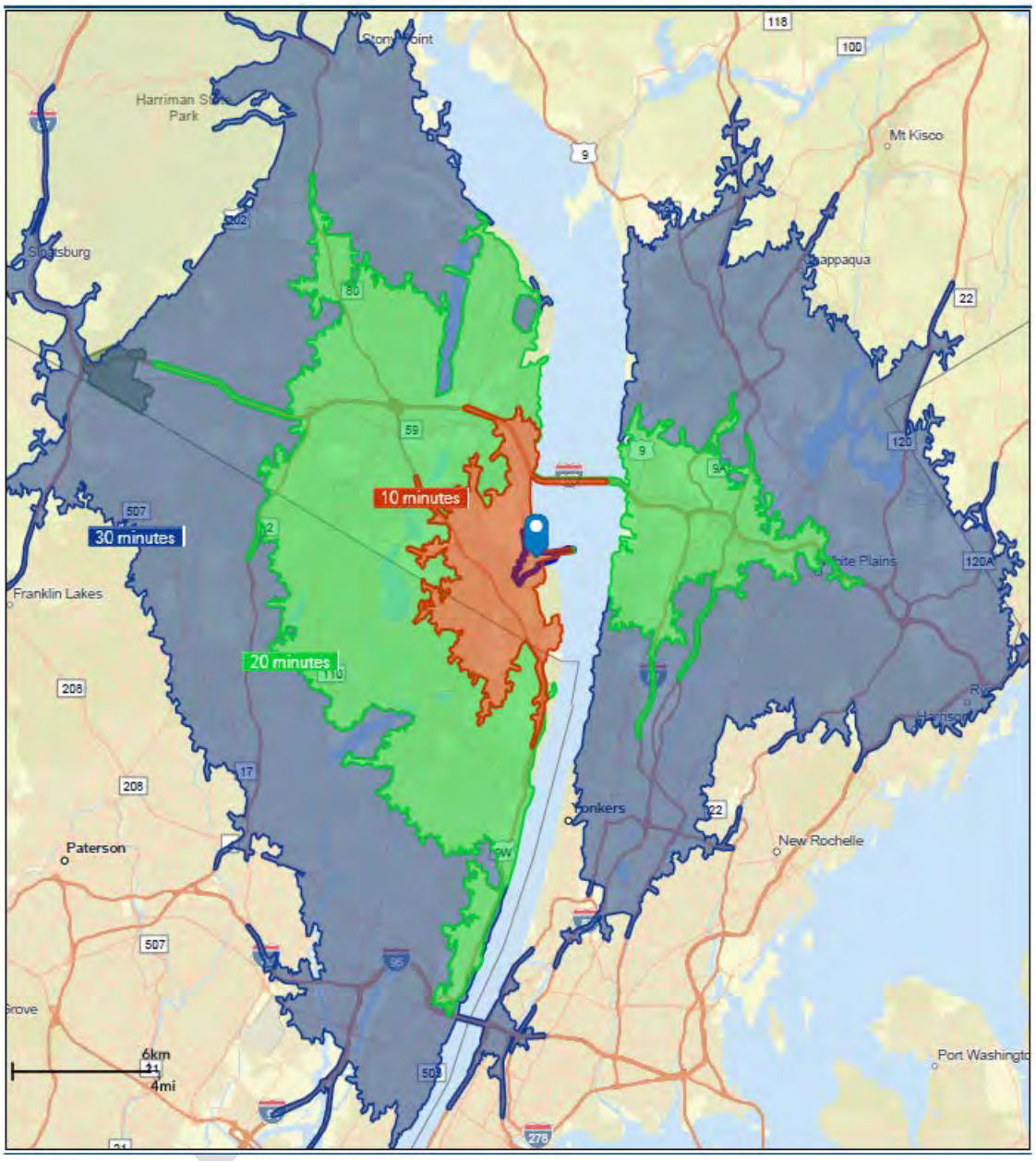
A ten-minute drive time is descriptive of the "neighborhood" trade area, which is consistent with how far a consumer with an automobile is willing to drive to visit preferred providers of readily available goods and services purchased frequently. Examples include fast-casual restaurants, bars, delis, barbers, salons, gasoline, etc. For Piermont, this trade area includes the Route 303 corridor along the Villages of Orangeburg, Blauvelt, Tappan heading into the New Jersey Boroughs of Northvale, Norwood, and Old Tappan. There is a mix of big box retailers including Lowe's and several strip malls, containing national retailers and pharmacies as well as multiple "super" grocery stores which provide significant competition in this trade area.

A 20-minute drive time is descriptive of the local trade area, which is consistent with how far most people are willing to travel to receive products they purchase occasionally, such as clothing, sporting goods, pet supplies, etc. It also corresponds with an additional distance that people are willing to travel in order to receive particularly preferred or value-priced merchandise or services that are also readily available closer to home, such as favored restaurants, spas, specialty foods, etc. The local trade area for Piermont includes the commercial areas in Nanuet, including the Palisades Center Mall, New City, Upper Nyack, Pearl River, and Congers; it extends across the Hudson River into Dobbs Ferry, Tarrytown, Elmsford, and Ardsley; and further down into the Boroughs of Closter, Cresskill, Hillsdale, and park Ridge in New Jersey.

A 30-minute drive time is descriptive of the regional trade area, which is consistent with how far most people are willing to travel to receive products and services purchased rarely and usually for high prices. This includes automobiles, auto repair, appliances, electronics, and furniture. This trade area includes most of Rockland County; a significant portion of Westchester County towards the border with Greenwich, Connecticut along the Long Island Sound into portions of Portchester and Rye and up towards Chappaqua, Ossining and Armonk; and in New Jersey extending to Ramsey, Ridgewood and touching the major retail corridor along Routes 17 and 4 in Paramus extending down to Edgewater and Fort Lee. While during high traffic periods, much of Bergen and Westchester Counties would become less accessible within 30 minutes due to traffic congestion.

Generally, businesses seeking a regional trade market seek locations near highways that are more accessible, so it is unlikely that Piermont could compete in a regional market other than with particularly unique, rare, or high-quality offerings, such as in the restaurant, bar, specialty foods, catering, hospitality, and miscellaneous retail industry sectors.

This trend is also further exacerbated by the increase in e-commerce overall where there are similar focuses to focusing on highway accessibility and large lot developments in order to house warehouses at a scale and scope that is above the available land and accessibility of the Village of Piermont.



Map 3.2.5-2 : 10, 20 and 30 Minute Drives from Piermont Village Hall

Source: ESRI Business Analyst, 2023

3.3 Land Use, Zoning and Codes Inventory and Analysis

3.3.1 Introduction

Key Takeaways

- **Most of the land in Piermont is dedicated to Residential Uses**
- **There is a significant amount of land classified as "Parks and Open Space Land" and "Land Dedicated to Community Services and Cultural Facilities."**
- **While there are few commercial areas within the Village, they are centrally located within the Downtown areas.**
- **There are fourteen (14) zoning districts which are in text of the Village Code although only twelve (12) districts have physical boundaries within the district that are currently mapped.**
- **Most of the land within the Village is zoned residential which falls in line with the established development patterns for the Village.**

In New York State, municipalities regulate land use through zoning regulations, enabled by New York State Town Law §262. The intent of zoning is to ensure the "health, safety and welfare" of the community by encouraging or discouraging how land is used in the various areas of a community. The way that land is used affects the health and safety of residential neighborhoods, the ability for businesses to locate within the Village, and what important natural resources will be protected.

The Village of Piermont regulates land uses and development primarily through Chapter 210, Zoning, of the Village of Piermont Code. The zoning establishes the purposes of the land use regulations, which are intended to promote the health, safety, morals, and general welfare of the community by conserving land and building values and encouraging the most appropriate use of land throughout the Village of Piermont.

Uses that are allowed throughout the Village are regulated by zoning districts, which are shown spatially on the Village of Piermont Zoning Map and further regulated by Chapter 210. The map shows where zoning districts are in the Village, and, therefore, where certain land uses are permitted or not permitted. Based on Chapter 210, there are Fourteen (14) zoning districts:

- R-80: Single-Family Residential District; 80,000 Square Feet Lot Area Minimum
- R-40: Single-Family Residential District; 40,000 Square Feet Lot Area Minimum
- R-20: Single-Family Residential District; 20,000 Square Feet Lot Area Minimum
- R-15: Single-Family Residential District; 15,000 Square Feet Lot Area Minimum
- R-10: Single-Family Residential District; 10,000 Square Feet Lot Area Minimum
- R-7.5: Single-Family Residential District; 7,500 Square Feet Lot Area Minimum
- R-1.25: Single-Family Residential District; 1,250 Square Feet Lot Area Minimum

- RM: Multifamily Residential District
- WF-1: Waterfront District
- WF-2: Waterfront District
- BB: Business B District
- BA: Business A District
- RD: Riverfront District
- CBM: Central Business Multi-Use

These zoning districts regulate land uses listed in the Schedule of Regulations. Uses are allowed by right, by special permit, or as accessory uses to a principal use. Special permit uses are intended to authorize a specific land use that is permitted in the zoning chapter, subject to requirements imposed by same to assure that the proposed use is in harmony with the zoning and will not adversely affect the neighborhood if the requirements are met. Special permit uses, which are enabled by NYS Town Law, are applied for, reviewed, and acted upon by the Planning Board, with several exceptions for uses which are under the purview of the Board of Appeals. Village zoning is described in more detail below.

In New York, one method of classifying land uses is through a review of the property type classification code, which is a statewide uniform classification system for assessment administration. Parcel data available from Rockland County identifies a parcel's land use based on the property classification codes. The general categories include agriculture, residential, vacant, commercial, recreation and entertainment, community services, industrial, public services and wild, forested and conservation lands/public parks.

The Comprehensive Plan looks at the distribution of land uses within the Village, and how those land uses correspond with the adopted zoning regulations. This analysis can show whether land uses and the zoning district within which they are located are consistent, as well as what may need to be changed, to best facilitate the Comprehensive Plan vision statement.

3.3.2 Existing Land Use Patterns

For the purposes of this section, parcel mapping data was obtained through Rockland County's GIS data download portal and combined with property tax parcel data also provided by Rockland County and the Town of Orangetown Assessor's Office. The data was then mapped and analyzed. **Table 3.3.2-1** identifies the acres, parcel counts, and percentage of area within the Village for each land use category. This data is shown graphically on **Map 3.3.2-1**.

The Village of Piermont encompasses approximately 1.12 square miles, of which 0.67 square miles are land, and 0.44 square miles are water. Of this total, 0.67 square miles (433.09 acres) are within the tax assessment records and the remaining lands (approximately 0.44 square miles) are within road rights-of-way and any other area that does not fall within a tax parcel. This also includes waterbodies within the Village. A large portion of the Village is not within a tax

parcel boundary, as much of Piermont is on the Hudson River. Portions of the River and the land buffers are not within any tax parcels but are located within the Village's boundaries.

As is evident from the data displayed in **Table 3.3.2-1**, Piermont is overwhelmingly residential in character. In the Village, residential land uses represent over 41 percent of the land area and nearly 84 percent of the tax parcels. Single-family homes (attached and detached dwelling units) represent 32.4 percent of the land area and 56.6 percent of the Village tax parcels while the two-family and multi-family (more than two-dwelling units on a property) residential land use categories represent 8.9 percent of the Village land area and 27.2 percent of the Village tax parcels.

Parks and Open Space constitute the second largest area of land use in the Village at 29.5 percent of the Village's land area across 127.71 acres. However, this land use only accounts for 1.1 percent of the Village's total tax parcels, indicating that some of the parcel sizes are very large.

Table 3.3.2-1: Existing Land Use Patterns by Parcels and Acreage and Percentages

Land Use	Acres	Number of Tax Parcels	% Acres in Village	% Tax Parcels in Village
Single-Family Residential (attached or detached)	140.3	663	32.4%	56.6%
Parks and Open Space	127.7	13	29.5%	1.1%
Community Services and Cultural Facilities	52.1	12	12.0%	1.0%
Vacant Land	45.5	103	10.5%	8.8%
Two-Family Residential	24.7	87	5.7%	7.4%
Multi-Family Residential	14.1	232	3.3%	19.8%
Commercial & Services	12.8	14	3.0%	1.2%
Parking	7.5	3	1.7%	0.3%
Public Utilities	3.3	16	0.8%	1.4%
Office	2.8	5	0.6%	0.4%
Mixed Use	2.3	24	0.5%	2.0%
VILLAGE TOTAL	433.1	1,172	100.0%	100.0%

Source: Town of Orangetown Assessor's Office 2023.
Note: Numbers may add up to more than 100% due to rounding.

Vacant land represents the fourth largest area of land use in the Village at 10.5 percent of the Village's land area across 52.1 acres, as well as representing 8.8 percent of the Village's total tax parcels. This includes residential vacant land, vacant land adjacent to several of the Village's lakes, rural vacant land, vacant land located in commercial areas, and other types of vacant land. Some of the vacant land may have conservation easements or may have environmentally constrained lands that would prevent the property from being developed.

The Village contains 12.8 acres of commercial land, which makes up 3 percent of land area in the Village, while 12 percent of the land area is dedicated to community services and cultural facilities such as churches, schools, libraries, and government facilities.

A detailed description of the land use breakdown and distribution throughout the Village is provided below.

Residential Areas

Table 3.3.2-2 provides the breakdown of residential land use within the Village of Piermont as determined by the available land use and property tax code data. As with most communities, housing accounts for the majority of the land in the Village. In Piermont, 41.3 percent of the land area and 83.8 percent of tax parcels are dedicated to residential use. This includes housing types such as single-family (attached and detached dwelling units), two- and three-family housing, and apartment buildings as shown on **Table 3.3.2-2**.

Table 3.3.2-2. Village of Piermont Residential Land Use

			% Area		% Tax Parcels	
Land Use	**Acres**	**# Tax Parcels**	**% Residential**	**% Village**	**% Residential**	**% Village**
Single-Family Residential (attached or detached)	140.4	669	78.4%	32.4%	68.1%	57.1%
Two-Family Residential	24.7	87	13.8%	5.7%	8.9%	7.4%
Three-Family Residential	5.1	18	2.8%	1.2%	1.8%	1.5%
Apartments	8.9	208	5.0%	2.1%	22.1%	17.7%
TOTAL RESIDENTIAL	**179.0**	**982**				
VILLAGE TOTAL	**433.1**	**1,172**				
% TOTAL	**41.3%**	**83.8%**				

Source: Town of Orangetown Assessor's Office 2023.

Table 3.3.2-2. Village of Piermont Residential Land Use

			% Area		% Tax Parcels	
Land Use	**Acres**	**# Tax Parcels**	**% Residential**	**% Village**	**% Residential**	**% Village**
Single-Family Residential (attached or detached)	140.4	669	78.4%	32.4%	68.1%	57.1%
Two-Family Residential	24.7	87	13.8%	5.7%	8.9%	7.4%
Three-Family Residential	5.1	18	2.8%	1.2%	1.8%	1.5%
Apartments	8.9	208	5.0%	2.1%	22.1%	17.7%
TOTAL RESIDENTIAL	**179.0**	**982**				
VILLAGE TOTAL	**433.1**	**1,172**				
% TOTAL	**41.3%**	**83.8%**				

Source: Town of Orangetown Assessor's Office 2023.

Single-family residences are the predominant land use in the Village of Piermont with approximately 669 tax parcels covering over 140.4 acres. This accounts for 32.4 percent of the land area in the Village and 57.1 percent of the parcels in the Village. For the purposes of this analysis, single-family residences include one-family year-round residences (667 tax parcels), one-family year-round residence with accessory apartment (1 tax parcel) and Estates (1 tax parcel). Single-family residences also include any townhomes. The next largest residential land use category is Two-Family Residences, encompassing 24.7 acres or 5.7 percent of the Village within 87 tax parcels. Apartments are the third largest residential category encompassing 8.9 acres in the Village.

Non-Residential Areas

Apart from residential use, the Village also exhibits non-residential land uses such as public utilities, community services and cultural facilities, and commercial & Services. The largest non-residential land use area is land dedicated to parks and open space which encompasses 13 tax parcels across 127.7 acres, or 29.5 percent of the Village's land area. Community Services and Cultural Facilities, which includes 12 tax parcels covering 52.1 acres, is the second largest land use area in the non-residential land use category and covers 12 percent of the Village's land area. Vacant land uses follow with 103 parcels at 45.5 acres, consisting of 8.8 percent of the Village's land area. Next, Commercial & Services land uses comprise 14 parcels across 12.8 acres, or 3.0 percent of the Village's land area. Parking land uses occupy 1.7 percent of the Village's land area, and public utilities, office and mixed use all occupy less than 1 percent of the villages land area.

- **Community Services and Cultural Facilities:** Community services and cultural facilities land uses include schools and educational uses, religious institutions, police and fire protection, and government functions. The Piermont Village Hall is located along Piermont Avenue in the Center of the Commercial District and the Piermont Library is located due east of Flywheel Park. Additional information on community facilities can be found in **Chapter 3.7, Community Facilities and Services**.

- **Public Utilities:** Public utilities such as water supply, telephone, sewage treatment, water pollution control, and electric distribution fall under this category. More information on community facilities can be found in **Chapter 3.8, Utilities**.

- **Commercial:** The Majority of Commercial Uses are contained within the downtown area along Piermont Avenue and surrounding Flywheel Park. Commercial uses include retail sales and personal services, office buildings, restaurants, and small boutiques. More information on community facilities can be found in **Chapter 3.2.4, Current Market and Business Conditions**.

Parks and Open Space (State, or Village)

The Village's public/private recreation areas and conserved lands cover a total land area of 127.7 acres. Of this, 127.56 acres are conservation lands, public parks, and preserves and 0.40 acres are private recreation and private conservation easements. More information on municipal parks and conserved land can be found in **Chapter 3.4, Natural Resources** and **Chapter 3.7, Community Services and Facilities**.

Vacant and Undeveloped Land

The fourth-largest land use category behind residential uses, community services and cultural facilities and Parks and Open Space is vacant land (245.5 acres). These lands include properties that are not conserved and do not have any structures or other uses occurring on site. However, some of the properties may have conservation easements. These 103 parcels account for 10.5 percent of the Town's land area. There is 1 vacant parcel out of 103 that, when rounded, encompasses ten (10) or more acres which is the underlying area for Flywheel Park and the parking lots behind the commercial and mixed-use buildings which surround the park.

3.3.3 Recent Development Activity and Approvals

The Village of Piermont over the last five years has experienced some development. **Table 3.3.3-1** shows the number of building permits which have been issued in the Village of Piermont within the last five (5) years. Over the last five years, the largest types of building permits which were obtained were for One Family & Two-Family Dwellings and for Townhouses and specifically for alterations of additions, alterations, and repairs. The second largest number of permits have been issued for Other Permits such as pools, sheds and other interior systems modifications which show that much of the development within the Village centers around the modification

of the existing housing stock which significantly outpaces the permits issued for either Multifamily Residential Developments or nonresidential development almost 10 fold within the last five years (308 permits versus 45 permits).

Within the last five years, there have been five (5) permits issued for new construction, all for One Family Dwellings, Two Family Dwellings and Townhouses, which shows the relative lack of development within the Municipality which is generally built out. While there are some lots which are available for development within the municipality which are classified as vacant and undeveloped land, much of the development activity will be the result of the development of single-family residential lots. According to the building inspector, a developer is working on a four (4) Lot subdivision along Piermont Avenue to construct single family residential homes which is located on vacant land which will be discussed further in Chapter 3.9 for Development Potential.

Table 3.3.3-1. Building Permits Issued*

Zoning District	2018	2020	2021	2022	TOTAL
New Construction					
One Family Dwellings, Two Family Dwellings and Townhouses	**1**	**2**	**2**	**0**	**5**
Other Residential Occupancies	**0**	**0**	**0**	**0**	**0**
Nonresidential Buildings	**0**	**0**	**0**	**0**	**0**
Addition, Alteration or Repair of Existing.					
One Family Dwellings, Two Family Dwellings and Townhouses	**91**	**73**	**83**	**61**	**308**
Other Residential Occupancies	**6**	**1**	**5**	**6**	**18**
Nonresidential Buildings	**12**	**1**	**3**	**9**	**25**
All Other Permits (Pools, Sheds, Decks, Plumbing, HVAC ETC.)	**0**	**44**	**65**	**61**	**170**
Certificates of Occupancy or Compliance Issued for all occupancies	**43**	**78**	**118**	**106**	**345**

Source: Piermont Building Inspector.

**** - Data from 2019 not available***

3.3.4 Zoning

The Village of Piermont regulates land uses and development primarily through Chapter, 220, Zoning, of the Village of Piermont Code. The Zoning chapter sets forth the purposes of zoning, intended to protect public health, safety, and welfare. Uses of land that are allowed or prohibited throughout the Village are regulated by zoning districts, which are shown spatially on the Village of Piermont Zoning Map and further regulated through the text of Chapter 220. The zoning map shows where zoning districts are located in the Town and where certain land uses are permitted or not permitted. **Map 3.3.3-1, Zoning** depicts twelve (12) zoning districts, and

the zoning districts are listed in **Table 3.3.3-1** and shown in **Map 3.3.3-1, Zoning**. Note that the code text reflects fourteen (14) zoning districts including the R-80 Single Family Residential Zone and BA Business A District, which have text regulations within the code but do not have any geographic zoning districts shown on the zoning map. The total acreage of **Table 3.3.3-1** differs from the total land use calculations. Unlike the land use data, the zoning data includes road rights-of-way and other land areas that do not fall within a tax parcel.

Table 3.3.4-1. Village of Piermont Zoning Districts

Zoning District	Acres	% Acres in Village
R-40: Single-Family Residential; 40,000 S.F. Min Lot Area	74.0	10.4%
R-20: Single-Family Residential; 20,000 S.F. Min Lot Area	37.1	5.2%
R-15: Single-Family Residential; 15,000 S.F. Min Lot Area	30.3	4.2%
R-10: Single-Family Residential; 10,000 S.F. Min Lot Area	92.4	12.9%
R-7.5: Single-Family Residential; 7,500 S.F. Min Lot Area	120.5	16.9%
R-1.25: Single-Family Residential; 1,250 S.F. Min Lot Area	1.5	0.2%
R-M: Multifamily Residential District	20.8	2.9%
WF-1: Waterfront District	192.0	26.9%
WF-2: Waterfront District	100.1	14.0%
BB: Business B District	3.6	0.5%
RD: Riverfront District	34.6	4.8%
CBM: Central Business Multi-Use District	7.6	1.1%
TOTAL AREA	**714.5**	**100%**

Source: Rockland County GIS 2022.

Residential Zoning Districts

Most of the land in the Village of Piermont is zoned for residential uses – these zones encompass almost 80 percent of the Villages' area. There are nine (9) different residential zoning districts, with eight (7) being one-family residential districts ranging in minimum lot areas from 1,250 Square Feet to 80,000 Square Feet, and one (1) multi-family residential district. Within these districts, the following land uses are permitted by right:

Uses permitted by right in Single-Family Residential District (R-80, R-40)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.
- * Keeping of no more than two horses.

Uses permitted by right in Single-Family Residential District (R-20, R-15)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.

Uses permitted by right in Single-Family Residential District (R-10)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- Wharves and docks.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.
- * Boathouses, and similar recreational facilities fronting on the Hudson River and the Sparkill Creek.
- * Community centers, libraries, museums, publicly owned art galleries and similar public facilities.

Uses permitted by right in Single-Family Residential District (R-7.5)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- Wharves and docks.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.
- * Boathouses, and similar recreational facilities fronting on the Hudson River and the Sparkill Creek.
- * Community centers, libraries, museums, publicly owned art galleries and similar public facilities.
- * Fire, police, ambulance, and similar public uses.
- * Service, fraternal, and social clubs.

Uses permitted by right in Single-Family Residential District (R-1.25)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- * One-family dwellings.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.

Uses permitted by right in Multifamily Residential District (R-M)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.
- * Boathouses, and similar recreational facilities fronting on the Hudson River and the Sparkill Creek.
- * Community centers, libraries, museums, publicly owned art galleries and similar public facilities.
- * Garden apartments and condominiums

Uses permitted by right in Waterfront District (WF-1)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- Wharves and docks.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.
- * Boathouses, and similar recreational facilities fronting on the Hudson River and the Sparkill Creek.
- * Community centers, libraries, museums, publicly owned art galleries and similar public facilities.
- * Wharves, docks, bulkheads, and pilings beyond 100 feet from the shoreline.

Accessory uses or structures are those that are related to the primary land use and are customarily incidental to any permitted principal use. The following accessory uses are permitted in the Village's residential districts:

- Uses involving the following private structures: greenhouses, toolsheds, garages, tennis courts, swimming pools, cabanas, recreational facilities, and other similar structures that are clearly subordinate to the principal use.
- The keeping of not more than one unoccupied trailer, boat, or commercial vehicle.
- Customary home occupations, such as professional offices, conducted by the resident, provided that there is no external evidence of such use.
- Accessory parking.
- Accessory loading.
- Accessory signs.
- Indoor and outdoor recreational facilities incidental to schools.
- Temporary sales offices and temporary structures for storage of equipment and materials used in connection with construction for which a building permit has been issued and has not expired, and not to exceed one year. Storage of any other items, things or objects shall not be allowed in such temporary structure. Such use shall be renewable by permit issued by the original issuing authority.
- Passive dish antennas greater than one meter in diameter.
- The keeping of not more than two non-transient boarders or roomer

Single-family dwellings in the Village of Piermont are permitted in the various one-family residential districts at a density of one unit per 80,000[1], one unit per 40,000 Square Feet, one unit per 20,000 Square Feet, one unit per 15,000 Square Feet, one unit per 10,000 Square Feet, one unit per 7,500 square feet or one unit per 1,5000 square feet. Of the approximately 663 single-family residential parcels in Town, the average parcel size is 0.21 acres with a median parcel size of 0.9 acres.

Articles II, III, IV, V, VI, VIA, VII and VIII of the Zoning chapter contain district regulations including the permitted uses, accessory uses, additional use requirements and general bulk regulations. Within the general bulk regulations are the special permit use bulk regulations for the items above which require special uses.

[1] Within the Ordinance but not on the Zoning Map.

Non-Residential Zoning Districts

There are five (5) non-residential zoning districts enumerated in the Town code. These districts encompass just 145.9 of the Village's 714.5 acres, or only 20.4 of the Village's total area. These non-residential zoning districts are as follows:

- WF-2, Waterfront District
- B-B, Business District
- B-A, Business A District
- CBM, Central Business Multi-Use
- RD, Riverfront District

Uses permitted by right in Waterfront District (WF-2)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- * Marinas, boatyards, and clubs.
- * Art studios, art galleries and antique shops.
- * Restaurants, tearooms, and taverns.
- * Boat sales, repair, and service.
- * Boat moorings and anchorage.
- * Wharfs, docks, bulkheads, and pilings.
- * Professional and business offices.
- * One- and two-family detached dwellings.

Uses permitted by right in Business B District (B-B)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- Professional, governmental, and business offices.
- Funeral parlors.
- Art studios, art galleries and antique shops.
- Restaurants, tearooms, and taverns.
- Fire, police, ambulance, and similar public buildings.
- * Professional offices and dwelling units over commercial uses.
- * Dry-cleaning establishments and coin-operated laundry establishments.
- * Automobile sales and services in completely enclosed buildings.
- * Indoor theaters.
- * Trailers for business office and commercial purposes on temporary permit not to exceed one year and to be renewable thereafter on a six-month basis.
- * Telephone exchanges.
- *Semipublic or private clubs, fraternity houses or lodges, except where the principal activity is one customarily carried on as a business.

- *Conversion of the rear of stores and shops for the conduct of retail business or personal services into apartments, subject to the following conditions:
    1) Stores and shops prior to conversion must not be less than 450 square feet.
    2) Apartments must not be less than 250 square feet after conversion.
    3) The front of the store or shop must be of a transparent surface to permit a view of the interior of the store or shop from the street at all times.
    4) The occupant of the apartment and the proprietor of the store or shop must be one and the same person.
- *Stores and shops for the conduct of retail businesses or personal services.

Uses permitted by right in Central Business Multi-Use District (CBM)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval.

- One-family detached dwellings with not more than one principal building on a plot having a frontage on a public street or private street approved by the Board of Trustees.
- Professional, governmental, and business offices.
- Funeral parlors.
- Art studios, art galleries and antique shops.
- Restaurants, tearooms, and taverns.
- Fire, police, ambulance, and similar public buildings.
- Two-Family Residences
- * Professional offices and dwelling units over commercial uses.
- * Dry-cleaning establishments and coin-operated laundry establishments.
- * Automobile sales and services in completely enclosed buildings.
- * Indoor theaters.
- * Trailers for business office and commercial purposes on temporary permit not to exceed one year and to be renewable thereafter on a six-month basis.
- * Telephone exchanges.
- *Semipublic or private clubs, fraternity houses or lodges, except where the principal activity is one customarily carried on as a business.
- *Conversion of the rear of stores and shops for the conduct of retail business or personal services into apartments, subject to the following conditions:
    1) Stores and shops prior to conversion must not be less than 450 square feet.
    2) Apartments must not be less than 250 square feet after conversion.
    3) The front of the store or shop must be of a transparent surface to permit a view of the interior of the store or shop from the street at all times.
    4) The occupant of the apartment and the proprietor of the store or shop must be one and the same person.
- *Stores and shops for the conduct of retail businesses or personal services.
- *Multiple Dwellings, subject to the following conditions:
    1) The architectural appearance of the proposed structure incorporates common architectural elements present throughout the downtown. At a minimum, the horizontal spacing, vertical to horizontal proportions and alignment of windows should be

harmonious and compatible with adjacent structures fronting on Piermont Avenue. Additionally, buildings with front facades that are wider than 50 feet should be broken up into segments no wider than 50 feet, each differentiated by articulation of setbacks, roofline or roof style, cladding materials, colors, or architectural style.

Uses permitted by right in Business A District (B-A)

NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval

- Professional and business offices.
- Research and development laboratories.
- Water-dependent commercial uses.
- *Light industrial uses, including fabrication, processing, reprocessing, recycling, converting, altering, assembling, testing or other handling of products. All the foregoing uses shall be conducted solely within a building or group of buildings and will not cause or result in:
    - Dissemination of dust, smoke, observable gas or fumes, odor, noise, vibration, or excessive light beyond the immediate site of the building or buildings in which such use is conducted.
    - Menace by reason of fire, explosion, or other physical hazard, including radiation.
    - A harmful discharge of waste materials.
    - Traffic hazards or traffic congestion due to the number and type of vehicles required.
    - The arrival at or departure of vehicles from a site on a regular basis between the hours of 11:00 p.m. and 7:00 a.m. to disturb the tranquility of residential properties abutting and adjacent to the routes of ingress and egress to the site.
- * Public and parochial schools, public parks, and playgrounds.
- * Churches and similar places of worship, Sunday school buildings, parish houses and rectories.
- * Keeping of no more than two horses.
- * Marinas, boatyards, and clubs.
- * Art studios, art galleries and antique shops.
- * Restaurants, tearooms, and taverns.
- * Boat sales, repair, and service.
- * Boat moorings and anchorage.
- * Wharfs, docks, bulkheads, and pilings.
- * Professional and business offices.
- * One- and two-family detached dwellings.
- * Wholesaling, warehousing, and distribution businesses.
- * Recording studios for the production or reproduction of music, television and radio studios and the fabrication of products associated with such studios, including but not limited to, audio and video cassette tapes, phonograph records and other similar products.

RD: Riverfront:

The purpose of the RD, Riverfront zoning district, is to provide performance criteria in the context of flexible use and design regulations, incorporating a variety of compatible residential and nonresidential uses which are planned and developed as a comprehensive development plan. It is the objective of this district to permit a variety of riverfront-enhanced uses and to encourage a mix of such uses to maximize

the potential of the site. It is the intent to ensure that development in this area will be an asset to the Village as a whole. The RD District shall be divided into two areas, RD-East and RD-West. To achieve these objectives, performance criteria are provided to allow for flexibility for the developer to create a development plan without regard to unnecessarily rigid lot and bulk regulations. Among the objectives which should be achieved by development in this zone are the following:

- A development pattern that is in harmony with the Village and is a natural extension of the existing Village.
- A creative use of land to establish a more desirable living environment than would be possible through the strict application of other sections of this chapter.
- The preservation of outstanding natural features, significant geological and historical features and other features of scenic and ecological value and the prevention of soil erosion and the minimization of flood hazard and the preservation of major stands of trees.
- Innovation, flexibility and variety in the type, design, and layout of residential housing to permit a variety in the choice of housing type, living environment, occupancy, tenure, and housing cost.
- The maximum provision of community, recreational and other facilities, such as open space, as integral parts of the community.

The following uses are permitted uses in RD-East District:

- Detached, attached and semiattached dwelling units.
- Multi-family dwellings.

The following uses are permitted uses in RD-West District:
NOTE: * Indicates use is subject to special permit approval as set forth in Article XIII and must conform to any additional requirements in connection with such approval

- Fishing equipment and marine-related supply stores.
- Household appliances and electronic equipment stores (not requiring delivery from the facility).
- Establishments for the sale of musical instruments, sheet music, manuscripts, records, and audio tapes.
- Retail dry-cleaning establishments (no cleaning to be done on premises).
- Coin-operated laundry facilities.
- Beauty parlors and barbershops.
- Banks and financial institutions.
- Florist and garden shops.
- Professional and business offices.
- Pharmacies.
- Stationery stores.
- Clothing and apparel stores.
- Bookstores.
- Hardware and garden supply stores.
- Establishments for the sale of wine and liquor.
- Travel and insurance agencies.
- Jewelry, novelty, and handicrafts stores.
- Art and antique stores.
- Parks and playgrounds.
- * Multifamily dwelling units above commercial uses.
- * Automotive supplies (no gasoline, tires, or repair services).

- * Auctions of any kind.
- * Boat and marine sales, rental, repairs, and services.
- * Home-furnishing stores.
- * Establishments for the sale of food and beverages, including catering establishments and restaurants (not including supermarkets or fast-food establishments).
- * Luncheonettes (not including fast-food establishments)
- * Government offices and public buildings.

Off-Street Parking.

The municipal zoning sets standards and requirements for accessory off street parking where it is permitted in each district. The requirements for parking are based on the uses which is represented in the table below:

Table 3.3.4-2. Parking Requirements

Use	Required Number of Parking Spaces
Art studios, art galleries and antique shops	1 for every 150 square feet of total floor area
Boatels and motels	1 per room, plus 1 per 3 employees
Boat sales, repair and service	1 for every 150 square feet of floor area devoted to retail or service activities, plus 1 for each two-boat dry-docking facility
Churches, places of worship, Sunday school buildings, parish houses and rectories	1 for every 200 square feet of floor area, but not less than 1 for every 5 seats, where provided
Community centers, libraries, museums, publicly owned art galleries and similar public facilities	1 for every 200 square feet of floor area, but not less than 1 for every 5 seats, where provided
Dwellings	1 for each dwelling unit, plus 2 for any accessory home occupation
Fraternal and social clubs	1 for every 200 square feet of floor area, but not less than 1 for every 5 seats, if provided
Funeral parlors	1 for every 2 employees, plus at least 10
Heliports	1 for every 2 employees, plus 1 for each private aircraft parking space and 5 per scheduled aircraft arrival or departure within the peak three-hour period
Indoor theaters	1 for every 5 seats
Light industrial research and development laboratory use or public utility facilities	1 for every 300 square feet of gross floor area or 2 for every 3 employees, whichever is less
Marinas	1 for each boat-mooring facility or 3 seats in commercial craft or 3 employees
Multifamily dwellings	1 1/2 per dwelling unit
Professional, business and governmental offices	1 for each office, plus 1 for every 150 square feet in floor space in such use
Public or private clubs, fraternity houses or lodges	1 for every 2 members or accommodations such as lockers, whichever is greater
Public utility facilities	1 for every 2 employees or 300 square feet of floor area, whichever is greater
Restaurants, tearooms, taverns or places serving food or beverage	1 for every 3 seats
Retail or service business of floor area devoted to retail or service activities	1 for every 150 square feet

Public or parochial schools or schools of special instruction	1 for every 12 seats or students of elementary grades and 6 seats or students for other schools
Telephone exchanges	1 for every 2 employees or 300 square feet of floor area, whichever is less
Wholesaling, warehousing, distribution business	2 for every 3 employees; however, additional area should be allocated on the basis of 1 space per 300 square feet of floor are

Source: Village of Piermont Code, §320-68

There are exemptions which the Village of Piermont provides for within the Business B zoning district. Within the B district:

A. The required number of off-street parking spaces for "Retail or service business of floor area devoted to retail or service activities" in Business B is modified as follows: There is no required number of off-street parking spaces for "Retail or service business of floor area devoted to retail or service activities" under a threshold floor area of 600 square feet; the required number of parking spaces for floor area above 600 feet is one space for every additional 150 square feet.

B. "Restaurants, tearooms, taverns or places serving food or beverage" (hereinafter "food/beverage service establishment") and retail and/or service businesses, in Business B, that cannot provide the required number of parking spaces on site may use leased or rented spaces from a different site (i.e., "off-site") to satisfy the off-street parking regulation, subject to the restrictions and conditions set forth below. Such food/beverage service establishment that is leasing or renting off-street parking spaces off site is hereinafter referred to as "the food/beverage service establishment lessee." The owner of the real property that is the situs of the leased or rented off-street parking spaces (that are being utilized off-site by the food/beverage service establishment lessee) is hereinafter referred to as "the lessor."

   (1) Off-site leased or rented off-street parking spaces must either be within the Business B Zoning District or (if not in Business B) be within 250 feet of the food/beverage service establishment lessee's business.

   (2) Annual evidentiary proof of continued lease or rental of the off-site, off-street parking spaces must be provided by the food/beverage service establishment lessee to the Building Inspector by January 31 of each year, which evidentiary proof must be satisfactory to the Village Board of Trustees.

   (3) If, during the year, the off-site, off-street parking spaces lease agreement or rental contract has expired, or is cancelled, terminated or no longer in effect, the food/beverage service establishment lessee must communicate such status to the Building Inspector within 30 days of such expiration, cancellation or termination.

   (4) If a food/beverage service establishment lessee's access to the off-site leased or rented off-street parking spaces is not on a 24-hour basis, the

leased or rented spaces must be available for the primary business hours of the food/beverage service establishment lessee.

(5) A lessor of off-street parking spaces shall be subject to the requirements of this Article XII, even if the lessor is a preexisting nonconforming use or nonconforming as to its bulk (at the time of the adoption of this section). The lessor shall satisfy the minimum quantity of off-street parking spaces that are required for the lessor's use, and the lessor's parking lot shall also be adequate to fulfill the quantity of off-street parking spaces that are being leased or rented to all lessees of the lessor.

(6) Leasing or renting of parking spaces in single-family residential lots (whether improved or vacant) is prohibited.

C. Businesses, commercial establishments and residences in existence at the time of the adoption of this section shall be considered preexisting nonconforming buildings as to their bulk regarding the off-street parking requirements of this Article XII, except that any restaurant, business or commercial establishment which utilized the fee-in-lieu-of-parking provisions set forth in the moratorium known as "Local Law No. 5 of 2010" shall not be considered preexisting nonconforming as to their bulk regarding off-street parking requirements, such uses must comply with this Article XII.

D. If a commercial establishment located in the Business B Zoning District cannot satisfy, on site, or in the case of a restaurant use, by the lease of off-site parking as provided under § 210-68.1(B), its required minimum number of off-street parking spaces, then a portion of the requirement may be satisfied by paying to the Village of Piermont a fee in lieu of parking ("FILOP"), subject to the following restrictions and conditions.

(1) The owner or operator of a commercial establishment in the Business B Zoning District may satisfy the off-street parking space requirement by using FILOP parking spaces which are permitted by right as set forth in this section, or otherwise to the extent that the use of additional FILOP spaces are approved by the Village Board of Trustees ("VBT").

(2) The fees for FILOP spaces shall be established by resolution of the VBT on an annual basis.

(3) Partial-year fees shall be pro-rated on a per diem basis.

(4) The FILOP fee shall not be refundable.

(5) Each applicant may, by right (i.e., no VBT review shall be necessary), utilize up to three FILOP spaces, and the applicant shall pay the required FILOP fee to the Village of Piermont, as established by the VBT, for such "by right" FILOP spaces.

(6) An applicant may also submit an application to the VBT requesting approval of a special permit granting more than three "by right" FILOP spaces for the purpose of satisfying the required minimum quantity of off-street parking spaces. If the said special permit is approved, the applicant

shall pay the required fees as established by the VBT. The quantity of such additional FILOP special permit spaces shall not exceed a number determined by the VBT to be assigned to the particular applicant based on the available inventory of FILOP spaces. In the event that the VBT grants a special permit which approves in excess of nine FILOP spaces to a single applicant, such special permit shall be renewed annually and specifically reference that the FILOP spaces in excess of nine spaces were granted due to available inventory of FILOP spaces at the time of the application, and that such spaces may not be available when the special permit is renewed.

(7) FILOP shall not be available to a commercial establishment unless all lot area available on the commercial establishment's premises that may feasibly be utilized as off-street parking spaces in accordance with the Zoning Code has been allocated to parking by the owner or occupant of the premises.

(8) Subject to the provisions of § 210-68.1(6), commercial establishments with FILOP spaces shall have the right of first refusal to the FILOP spaces that have been issued to them, which right must be exercised by January 31 of each year. However, the approval of FILOP spaces are not transferrable and does not run with the land.

(9) If the Building Inspector shall determine that the supply of available Village-owned off-street parking spaces is exhausted, no new commercial establishment shall be entitled to FILOP spaces.

E. The Village Board of Trustees shall adopt, by resolution, before January 1 of each year, the following regulations:

(1) Establishing the number of off-street parking spaces (i.e., inventory) available for FILOP in the Village for the following year.

(2) Establishing the annual fee for FILOP spaces.

F. Change of use, ownership or occupancy; new or expanded establishments.

(1) If a change of use, ownership or certificate of occupancy of a commercial establishment that is preexisting nonconforming as to its bulk, located in the Business B Zoning District, results in the same (or less) off-street parking space requirement for the new business operation, as compared to the prior use or occupancy, the change may be maintained as a preexisting nonconformance as to bulk.

(2) If a change of use, ownership or certificate of occupancy of a commercial establishment that is preexisting nonconforming as to its bulk, located in the Business B Zoning District, results in a greater off-street parking requirement, the net increase of required spaces shall be satisfied by: on-site off-street parking spaces; private off-street parking space lease or rental at a different situs than the commercial establishment; or FILOP

(unless the maximum number of FILOP spaces has already been issued to the commercial establishment).

(3) For new, or expansion of existing, commercial establishments located in the Business B Zoning District, additional off-street parking space requirements shall be satisfied by: on-site off-street parking spaces; private off-street parking space lease or rental at a different situs than the commercial establishment; or FILOP (unless the maximum number of FILOP spaces has already been issued to the commercial establishment).

G. In its review of an application seeking approval of an area/bulk variance from the Zoning Code's off-street parking requirements, the Zoning Board of Appeals should note that it is the principal responsibility of the VBT to balance the availability of off-street parking spaces with the needs of the business and residential community, as enacted in the annual parking plan analysis.

The FILOP program has been very popular amongst businesses within the Downtown area to relieve the parking requirements within the business district. In 2022, there were 24 businesses who participated in the program which satisfied the requirements for 136 spaces. More information about the FILOP program will be discussed in the transportation section of the plan.

3.3.5 Land Use and Water Boards

The following Boards ensure that all processes and services related to land use and development in the Village of Piermont are supported as envisioned by the Comprehensive Plan. Policies that influence planning are implemented at three levels within Piermont:

- The Village Board approves laws that set planning policy.
- The Planning Board assists in the formulation of and carrying out of the Village policy.
- The Zoning Board of Appeals may grant variances from the Village's Zoning Chapter.
- The Architectural Review Commission additionally reviews Site Plan and Subdivision Application of Major Projects to protect the quality of development in the Village.

Descriptions of these land use boards are below.

Planning Board

The powers and duties of the Village of Piermont Planning Board are defined by state and local codes, specifically Chapter 64, Article 7 §7-718 of the Village Code. The Village Planning Board consists of five members appointed in terms that range from one year to five years. The board may also appoint two alternate members for terms of one year each. The Board of Trustees shall designate a member of said Planning Board to act as Chairman. Upon failure of the board to appoint such Chairman, the planning board shall elect a chairman from its own members. The Planning Board shall have the power and authority to employ experts, clerks, and a secretary and to pay for their services and such other expenses as may be incurred for such Planning Board. The Board of Trustees is hereby empowered and authorized to make such appropriation

as it may see fit for such expenses. The Planning Board may adopt rules and regulations with respect to procedure before it and with respect to any subject matter over which it has jurisdiction, after public hearing and approval by the Board of Trustees.

The Planning Board shall have all the powers and perform all the duties of a Planning Board as provided in Article 7 of the Village Law. In addition, the Board of Trustees hereby authorizes and empowers the Planning Board to approve plats showing lots, blocks or sites with or without streets or highways, to conditionally approve preliminary plats and to approve the development of plats, entirely or partially undeveloped and which have been filed in the office of the County Clerk in which such plat is located prior to the appointment of such Planning Board and the grant to it of the power to approve plats. Before such approval is given, a public hearing shall be held by the Planning Board. Comprehensive or master plans and the open space index provide inputs to Board considerations.[2] The Village of Piermont Planning Board is engaged in the following primary functions of reviewing and approving applications for subdivisions and site plans.

Zoning Board of Appeals (ZBA)

The Village of Piermont's Zoning Board of Appeals is Zoning Board of Appeal (ZBA) is an administrative body designed to interpret and to ensure the validity of Piermont Zoning Code and to make determinations on applications for variances from the Code.

Piermont zoning code is the community's guide to its future development and affords the residents and property owners within the community protection from undesirable development.[3] The Board of Appeals consists of Five members and the Board of Trustees may appoint two alternates. The Board of Appeals shall have all the powers and duties prescribed by law and as more particularly specified below:

A. Upon request by any official, board or agency of the Village, the Board of Appeals shall hold a public hearing and decide any of the following questions:
    (1) To determine the meaning of any portion of the text of this chapter or of any condition or requirement specified or made under the provisions of this chapter.
    (2) To determine the exact location of any district boundary shown on the Zoning Map.
B. To determine the possible adverse effect on the surrounding area of any proposed manufacturing uses in business districts.

The Board of Appeals shall, upon application by any aggrieved party, hear and decide appeals from any order, requirement, decision or determination made by any administrative official.

[2] Code of the Village of Piermont, Chapter 30 Planning Board
[3] Zoning Board| Village of Piermont New York (www.piermont-ny.gov)

The Board of Appeals may also authorize, upon appeal in special cases, such variance from the terms of the code as will not be contrary to the public interest where, owing to exceptional and extraordinary circumstances, there are practical difficulties or unnecessary hardships in the way of the carrying out the strict letter of the village code, subject to terms and conditions to be fixed by the Board under the law; provided, however, that no such variance shall be granted unless the board finds that:

A. There are physical conditions, fully described in the findings of the Board, applying to the land or buildings for which the variance is sought, which conditions are peculiar to such land or building and have not resulted from any act of the applicant or any predecessor in title; and
B. For reasons fully set forth in the findings of the Board, the aforesaid circumstances or conditions are such that the strict application of the provisions of this chapter would deprive the applicant of the reasonable use of such land or building, that the granting of the variance is necessary for the reasonable use of the land or buildings and that the variance as granted by the Board is the minimum variance that will accomplish this purpose; and

The granting of the variance under such conditions as the Board may deem necessary or desirable to apply thereto will be in harmony with the general purpose and intent of this chapter, will not represent a radical departure therefrom, will not be injurious to the neighborhood, will not change the character thereof and will not be otherwise detrimental to the public welfare.

The needs or desires of a particular owner or tenant or of a particular prospective owner or tenant shall not, either alone or in conjunction with other factors, afford any basis for the granting of a variance. The fact that the improvements already existing at the time of the application are old, obsolete, outmoded or in disrepair or the fact that the property is then unimproved shall not be deemed to make the plight of the property unique or to contribute thereto.

Where the Board of Appeals finds the zoning classification of a particular property to be conducive to the deprivation of the reasonable use of the land or building by the owner thereof, and where the Board deems the same condition to apply generally to other land or buildings in the same neighborhood or district, said Board may call this condition to the attention of the Board of Trustees.

In all cases where the Board of Appeals grants a variance from the strict application of the requirements of the code, it shall be the duty of such Board to attach conditions and safeguards as may be required in order that the result of its action may as nearly as possible be in accordance with the spirit and intent of this code.[4]

[4] Code of the Village of Piermont, Article XVII Board of Appeals, §210-94 through §210-96

Architectural Review Commission

The powers granted to the architectural review commission were granted by the Village Board of Trustees to promote and protect the health, safety, and general welfare of the community.. The Commission shall consist of Five members and the board holds the following duties and functions:

A. The Commission shall hold regularly scheduled meetings monthly and at such other times as the Chairman may designate. A majority of said Commission shall constitute a quorum for the transaction of business. Any report or recommendation made by the Commission must be adopted by a majority and shall be officially filed with the Village Clerk and the referring board or department within 30 days of its adoption.
B. Where changes or modifications on any submission are recommended, there shall be set forth the specific changes and the reason(s) for the same. An applicant may be requested to appear to review with the Commission any submission to it. The powers of the Commission are advisory. Requests for the opinion and recommendation of the Commission may be made by the Village Board, the Planning Board, the Zoning Board of Appeals and any other board, commission, agency or department of the Village.
C. The jurisdiction of this Commission shall be limited to site plan and subdivision applications involving three or more residential lots or units and to all applications relating to the WF-2, Business A and Business B Zoning Districts involving a request for a variance. This Board shall have no jurisdiction whatsoever over one- or two-family dwellings, except with respect to site plan and subdivision applications filed subsequent to the enactment of this section and involving three or more lots.

The commission shall base its recommendations on the following criteria: No building or structure or land development shall be so detrimental to the desirability, property value or development of the surrounding area as to provoke one or more of the harmful effects set forth by reason of:

A. The repeated and adjacent use of identical or nearly identical facades or structures arranged without respect to natural features of terrain or other existing structures.
B. Inappropriateness of a structure or land development in relation to any other structure or land development existing or for which a permit has been issued or to any other structure or land development included in the same application with respect to one or more of the following features:
    (1) Cubical contents.
    (2) Gross floor area.
    (3) Height of building or height of roof.
    (4) Other significant design features such as material or quality of architectural design, roof structures, chimneys, exposed mechanical equipment and service, service and storage enclosures, signs, landscaping, retaining walls, parking areas, service and loading docks, dividing walls, fences and lighting posts, provided that a finding of

inappropriateness existed to provoke beyond reasonable doubt one or more of the harmful effects. [5]

Parks Commission

The parks commission was adopted by the Board of Trustees on April 25, 1977 and consists of five members. The commission has the following duties:

A. To make recommendations for the development of existing parks.
B. To make recommendations for the development of additional parks, if such seem necessary or desirable.
C. To encourage property owners by offering, if requested to, suggestions for planting, paths, maintenance, etc., to beautify their holdings; to encourage the owners to improve, or at least give permission to have improved, any unattractive properties.
D. In the case of vacant lots, to report to the Village any hazardous condition.
E. To enlist volunteer help whenever possible, whether labor or materials, in the furtherance of this project.
F. To suggest paths for walking or bicycling which would encourage appreciation of the natural beauty of our community.
G. To awaken the interest of our young people in growing things; to help them develop an awareness of natural loveliness.
H. To become aware of and utilize whatever town and county resources or state and federal funds are available in the furtherance of this project.
I. To do whatever else seems appropriate to the spirit of improvement and beautification in Piermont.[6]

Recreation Commission

The recreation commission was adopted by the Board of Trustees on July 31, 1979 and consists of seven members. The commission has the following duties:

A. Advise the Board of Trustees and all appropriate boards and commissions on matters affecting the development and maintenance of recreational programs within the Village
B. Conduct surveys and studies, when needed, to make the total recreational concept in the Village more effective.
C. Obtain and maintain in an orderly fashion a census of existing recreational groups and their current, past and future activities in the Village.
D. Cooperate with, and coordinate when possible, the efforts of private groups and individuals within the Village, in accordance with the purposes of this chapter.
E. Make recommendations for the development of future recreational programs, keeping in mind changing population patterns, economic fluctuation and age variation.

[5] Code of the Village of Piermont, Chapter 4 Architectural Review Commission
[6] Code of the Village of Piermont, Chapter 27 Parks Commission

F. Maintain liaison with public and private agencies and organizations of local, state and national scope whose programs and activities may have an impact on the recreational life of the community.
G. Maintain liaison with public and private agencies and organizations of local, state and national scope whose programs and activities may have an impact on the recreational life of the community.
H. Carry out such other duties as may be assigned from time to time by the Board of Trustees.[7]

Harbor Advisory Commission

The Harbor Advisory Committee was adopted by local law number 1-1986 and consists of as a 15-member board who are residents of the village appointed by the Board of Trustees in the Village of Piermont. The Chairman of the Commission is designated by the members of the village board annually with each member of the committee serving for three (3) years. The trustees shall seek recommendations for Harbor Advisory Commission members from the following bodies: the Planning Board, Zoning Board of Appeals, Conservation Advisory Commission, The Parks Commission, the Recreation Commission, the Empire Hose Underwater Rescue unit, marina operations, commercial fisherman and Village Civic associations. The commission shall have the following powers and duties:

A. To develop the Piermont Harbor Management Program, including detailed site plans for the projects outlined in the Piermont Local Waterfront Revitalization Program, and to submit engineering and cost proposals along with the site plans to potential sources of funding
B. To consult with the Planning Board, the Zoning Board of Appeals, the Conservation Advisory Commission, the Parks Commission, the Recreation Commission and the Architectural Review Commission on all appropriate matters, and to consult with and advise the Board of Trustees on all matters relating to the harbor, including but not limited to:
    (1) The operation of watercraft in the harbor.
    (2) The construction of marine structures and dredging in the harbor.
    (3) The mooring of vessels in the harbor.
    (4) Pollution in the harbor.
    (5) The ecology of the harbor.
    (6) All recreational activities in the harbor.
C. To recommend to the Board of Trustees long-range plans relating to the harbor.
D. To recommend to the Board of Trustees adoption or amendment of ordinances and the taking of other official action relating to the harbor.

[7] Code of the Village of Piermont, Chapter 36, Recreation Commission

E. In the cases of all applications made by any person to the United States Army Corps of Engineers or the New York State Department of Environmental Conservation, to recommend whether the Village should support or oppose such application and, upon authorization, to present statements and take other action on behalf of the Village in supporting or opposing such application.
F. To consult with and advise the Chief of Police and Chief of the Fire Department on all matters of public safety in the harbor.
G. To review applications for marine structures upon referral by other Village agencies as required by local law and to make recommendations to the referring agency or person. The purpose of such review shall be to evaluate proposed marine structures as to size, location and construction to verify that there is no impingement on the rights of others for the use of navigable waters and that the structures are suitable and appropriate for their intended use.
H. To advise and assist individual property owners to obtain all necessary permits to properly maintain bulkheads and seawalls.
I. To maintain liaison and consult with and advise appropriate federal, state and county officials on matters relating to the harbor
J. To submit to the Board of Trustees an annual report of the Commission's activities.[8]

Waterfront Resilience Commission

The Waterfront Resilience Commission was established by local law number 3-2016. The commission consists of 5 commissioners, two members at large and a chair who are residents of the Village and shall be appointed by the mayor. The commissioner roles shall be science and strategy, emergency management, funding and development, outreach and engagement and land use planning. The Mayor shall, to the best of their ability, appoint members reflective of socioeconomic diversity existing in the village. Each term of office of the members shall be three years and Members may be reappointed upon the end of their respective terms. The board serves without compensation and shall annually proposed a chairman and select a Secretary from its own members.

The commission shall have the following powers and duties:

A. To develop and recommend to the Village Board of Trustees steps necessary for the Village of Piermont to develop and implement ongoing resiliency strategies for the Village, to advise the Village Board on steps necessary to implement the recommendations generated by the Piermont Waterfront Resilience Task Force in 2014, and to identify potential sources of funding to assist in the implementation of the recommendations.
B. To consult with and advise the Board of Trustees on all matters relating to waterfront resilience, including but not limited to:
   (1) Improving emergency communications in the Village of Piermont.

[8] Code of the Village of Piermont, Chapter 15 Harbor Advisory Commission

(2) Developing a comprehensive emergency management plan.

(3) Work with local utilities, in particular electric, gas, water, sewer, and telecommunications, to improve resilience.

(4) Advocating and coordinating with Rockland County and Orangetown to increase infrastructure, access, and stormwater resilience.

(5) Conducting a risk and engineering review to analyze adaptation, relocation, building, and decommissioning options for municipal infrastructure.

(6) Working through the Rockland County Multi-Jurisdictional Natural Hazard Mitigation Plan to position Piermont for resiliency actions and funding opportunities.

(7) Working with the Village's Floodplain Administrator to coordinate proceeding with an application to the National Flood Insurance Program's Community Rating System (CRS), and evaluating other options to reduce the impact of increasing flood insurance rates on the community.

(8) Creation and implementation of a floodplain management plan.

(9) Incorporate the findings and recommendations of the Piermont Waterfront Resilience Task Force into the new Local Waterfront Revitalization Program.

(10) Identification of properties which may be of high priority for acquisition/relocation in long-term resiliency plans and establishing a fund to acquire such properties upon their availability.

(11) Exploring long-range adaptation possibilities for the Village of Piermont, including structurally and economically viable solutions that offer a long-term pathway that can help guide wise near-term investments.

(12) Creating a Municipal Village Master Plan that incorporates flood resilience, adaptation planning, and other land use issues.

(13) Sea level rise and flood projections recommended by New York State and FEMA for municipal decision making and planning purposes.

(14) Training of municipal staff and emergency managers in the use of the Task Force's risk and vulnerability assessments, sea level rise projection maps, and changing coastal hazard risks, such as storm surges.

(15) Research of financing options to support flood adaptation, mitigation, and protection measures.

(16) Integration of Village departments' budget requests into a Village-wide capital improvement plan.

(17) Consideration of cost-benefit analysis and long-term risk due to sea level rise and stronger storms in asset design and prioritization of strategies to manage key municipal assets.

(18) Initiate Climate Smart Communities actions and participate in the program's new certification program.

(19) Post flood preparedness, flood-resilient building, and mitigation resources on the Village website.

(20) Provide presentations and public training opportunities to inform the public of flood-related issues and solutions.

(21) Design and install high-water mark signs throughout the one-hundred-year / five-hundred-year floodplain areas to educate the community about flood risk and refer interested residents/property owners to additional sources of flood preparedness information.

(22) Share the findings of the Piermont Waterfront Resilience Task Force and collaborate with other communities to improve understanding of and planning for coastal hazards, such as sea level rise and storm surge.

(23) Advocate to New York State on climate change and flooding resilience issues.

C. To recommend to the Board of Trustees the adoption or amendment of ordinances and the taking of other official action relating to the waterfront resilience.

D. To consult with and advise the Chief of Police and Chief of the Fire Department on matters of emergency management and public safety as relate to flood events.

E. To maintain liaison and consult with and advise appropriate federal, state and county officials on matters relating to waterfront resilience in the Village of Piermont.

F. To submit to the Board of Trustees an annual report of the Commission's activities.[9]

[9] Code of the Village of Piermont, Chapter 50 Waterfront Resilience Commission

3.4 Natural Resources

Key Takeaways

- **Piermont's topography slopes dramatically from Route 9W to the Hudson River shoreline, with the Village framed by Tallman Mountain to the south and Mount Nebo to the northwest.**
- **Wooded steep slopes and extensive tidal wetlands provide a variety of natural habitats.**
- **Sparkill Creek runs in a deep valley through the Village, with some freshwater wetlands along its western end.**
- **Piermont's code promotes the preservation and protection for wetlands and waterbodies, especially in regard to new development.**
- **The Hudson River and Sparkill Creek watersheds support various ecosystems that provide habitat for both endangered and non-endangered species, and are the primary hosts for Piermont's aquatic recreation.**
- **The Piermont Marsh is one of Piermont's most environmentally significant features within the Village as it provides many ecologic services for the area and Hudson River.**

3.4.1 Topography

The Village of Piermont sits at the bottom of both Mount Nebo and Tallman Mountain, and its primary topography rises on the west side of the Village beginning along the Erie Rail Trail up to Route 9W, as shown in Map X. Piermont Ave, originally the coastline, sits at an elevation of roughly 25 feet above sea level.

Piermont and the surrounding area has significant topographic features that make up the landscape of the area. Some landmark elevations are as follows:

Table X.X Elevations

Location	Elevation (ft.)
Mount Nebo	656
9w (Bridge over Sparkill)	42
Tallman Mountain	170
Ferry Road	5
Piermont Ave	25
Erie Path	100-168
Tweed Boulevard	375

Piermont has a number of properties that are particularly subject to downslope flooding and erosion, especially those along stream corridors and steep slopes. According to Piermont's code, "no land having a slope equal to or greater than 40% shall be developed or disturbed except for conservation measures or measures intended to remove debris which inhibits the functioning of a swale. Natural vegetation and topography shall be retained to stabilize soils and reduce the volume of stormwater flow." Protection of Steep Slopes is a large matter of concern for the entire Village of Piermont as disturbance of these slopes can increase stormwater volume and velocity, aggravate erosion, and sedimentation beyond natural processes. Most of the Villages

undeveloped areas exhibit slopes of 25% to 70%, and construction and development in these areas is often difficult.

In Chapter 210-116 of Piermont's code, regulations for development for avoidance of adverse environmental impacts are identified. "The gross lot area of a site shall be reduced to the net lot area by subtracting a certain percentage from the gross lot area for purposes of calculating the net lot area and floor area ratio, as follows:

Slope Category	Gross Lot Area Reduction
I (0% to 24.99%)	Not applicable
II (25% to 34.99%)	50%
III (35% to 39.99%)	75%
IV (40% and greater)	100%

The disturbance of sloped areas, however, is additionally limited by restricting disturbance to a certain percentage of the square footage of the land area comprising a steep slope category. This percentage shall constitute the total permissible proportion of square footage allowed for disturbance of steep slope within that slope category, as follows:"[1]

Slope Category	Gross Lot Area Reduction
I (0% to 24.99%)	Not applicable
II (25% to 34.99%)	33%
III (35% to 39.99%)	15%
IV (40% and greater)	0%

3.4.2 Wetlands

Wetlands are prominent especially throughout the southern-most area of Piermont, and mainly serve as a link between the Sparkill Creek and the Hudson River. In the Village of Piermont, wetlands are regulated at the federal, state, and local levels. Knowledge of such water bodies is important given Piermont's relation to the Hudson River and other federal and state regulated wetlands. Map X, Water Resources, show the locations of these wetlands throughout the Village, as well as the locations of floodplain areas.

a. NWI Wetlands

The National Wetlands Inventory is the official secondary source to identify the potential presence of federal wetlands. Specific wetland boundaries and presence are also determined through a wetland delineation on site in the field. There are multiple classifications of wetlands present in the Village of Piermont per the National Wetlands inventory. The three main classifications are the Hudson River Estuary (Estuarine and Marine Deepwater), Estuarine and

[1] https://ecode360.com/12269630?highlight=wetlands&searchId=44833466492930468#12269630

Marine Wetland, and Riverine. Per Map X, NWI Wetlands, the following classified wetlands exist within the Village of Piermont: [2]

Table X.X Wetlands Classifications

Wetland Classification	Description
EIUBL	Estuarine and Marine Deepwater
E1UBL6	Estuarine and Marine Deepwater
E2EM1N	Estuarine and Marine Wetland
E2EM5P	Estuarine and Marine Wetland
E2SS1P	Estuarine and Marine Wetland
PSS1F	Freshwater Forested/Shrub Wetland
PUBHh	Freshwater Pond
R1UBV	Riverine
R2UBH	Riverine

b. DEC Wetlands

Throughout New York State, two main types of wetlands are identified for the purpose of protection; tidal and freshwater. Within Piermont, the wetlands that are present are primarily tidal, as they are located along the coast of the Hudson River and within the estuary. These wetlands are primarily salt marshes, typically found in the lower Hudson River areas, which are adapted to the rise and fall of the tides and salt water being brought in. Per Map X, DEC Wetlands, the following classified tidal wetlands exist within the Village of Piermont: [3]

Wetland Classification	Description
Fresh Marsh	The tidal wetland zone found primarily in the upper tidal limits of the riverine systems where significant fresh water inflow dominates the tidal zone.
High Marsh	The normal upper most tidal wetland zone is usually dominated by salt meadow grasses. This zone is periodically flooded by spring and storm tides and is vegetated.
Intertidal Marsh	The vegetated tidal wetland zone lying generally between average high and low tidal elevation in saline waters.
Littoral Zone	The vegetated tidal wetland zone lying generally between average high and low tidal elevation in saline waters.
Coastal Shoals, Bars, and Mudflats	The tidal wetland zone that at high tide is covered by saline or fresh tidal waters, at low tide is exposed or is covered by water to a maximum depth of approximately one foot, and is not vegetated.

[2] https://www.fws.gov/program/national-wetlands-inventory/classification-codes
[3] https://www.dec.ny.gov/lands/5120.html

c. Wetlands Criteria

Section 210 of Piermont's Village Code identifies Environmentally Sensitive Sites or Features and defines criteria for each. In section 210-113, "Wetlands" is defined as "any area which meets one or more of the following criteria:

1. Lands and waters of the state that meet the definition provided in § 24-0107, Subdivision 1, of the New York State Freshwater Wetlands Act [Article 24 of the New York State Environmental Conservation Law ("ECL")] but without regard to the minimum size standards set forth in the ECL.
2. Lands and waters of the state that meet the definition of "wetlands" provided in a report dated January 10, 1989, and entitled "Federal Agency Committee for Wetland Delineation, 1989, Federal Manual for Identifying and Delineating Jurisdictional Wetlands, U.S. Corps of Engineers, U.S. Environmental Protection, U.S. Fish and Wild Life Service and U.S.D.A. Soil Conservation Service, Washington, D.C., Cooperative Technical Publication."
3. Lands and waters of the state that meet the definition of "wetlands" provided in the Tidal Wetlands Act, New York Environmental Conservation Law Article 25, and the implementing regulations in 6 NYCRR Part 661." [4]

To avoid adverse environmental impacts, wetlands are locally protected in Piermont's code. The Village requires that for any new development, "a buffer of 50 feet outside of and surrounding the perimeter of all wetlands shall be maintained adjacent to surface waters and wetlands to preserve and protect Piermont's natural wetlands." [5]

As mentioned above, Piermont's wetlands are identified based on the definition of wetlands provided in the Tidal Wetlands Act, New York Environmental Conservation Law Articles 24 and 25. There are important upcoming changes to article 24 specifically, which may change wetlands jurisdiction within Piermont. Article 24, the NYS Freshwater Wetlands Act, was amended in 2022 with provisions going into effect in 2025 and 2028 that may bring some [additional] freshwater wetlands in the [Town, Village, City] under the jurisdiction of NYSDEC. In 2025, the jurisdictional nature of the existing state freshwater wetlands maps will be eliminated by removing "as shown on the freshwater wetlands maps" in the definition of Freshwater wetlands in § 24-0107.1. As a result, it will be more important to contact NYSDEC to determine whether a wetland is 12.4 acres or larger or of unusual importance and therefore subject to NYSDEC regulation. In 2028, the threshold for state regulated wetlands will be reduced from 12.4 acres to 7.4 acres (also in § 24-0107.1), potentially bringing more wetlands under NYSDEC's jurisdiction.

[4] https://ecode360.com/12269607?highlight=wetland,wetlands&searchId=48637526282882981#search-highlight-12269607-0

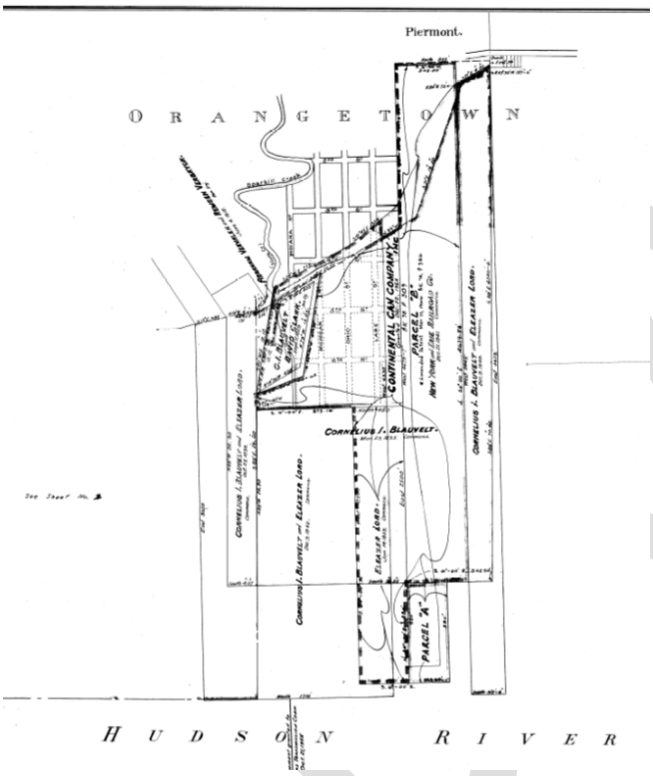
[5] https://ecode360.com/12269630?highlight=wetlands&searchId=44833466492930468#12269630

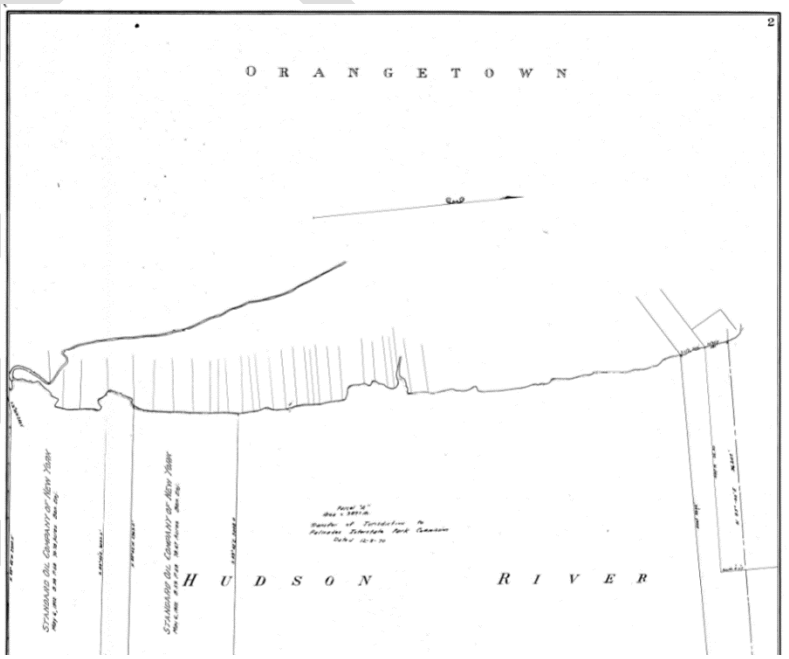
3.4.3 Waterbodies and Floodplains

a. Hudson River

The Hudson River is the prominent water body adjoining Piermont, and provides economic, cultural, and environmental attraction to the area. The Village has roughly 2.5 miles of riverfront property along the shoreline, that contain environmentally significant wetlands, as well as residential, commercial, and recreational uses. The Village of Piermont has extensive underwater rights in the Hudson River that go from the north of the Piermont Pier that extends to east of Parelli Park, as well as the North Shore Walkway that adjoins the underwater property.

These rights can be utilized to increase public access to the Hudson River, and to generate economic potential for the Village, which has been a goal since the North Shore Walkway was deeded to the Village by Continental Can Corporation in 1973.





The Hudson River falls under the Public Trust Doctrine, a set of American property law principles that define the nature of public and private interests on lands beneath “navigable waters”. The doctrine serves two functions; to define geographic extents of public ownership of lands under water, and to define the nature of the State’s ownership interest in these lands. This allows for public enjoyment of the lands, that are used for recreation, boating, fishing, swimming, and scenic pleasure.

The titles for the beds of numerous bodies of water, including the Hudson River, are held in trust for the people of New York State under the jurisdiction and administration of the Office of General Services. This includes lands located in, on, or above state-owned lands underwater, and they are regulated under the Public Lands Law.

Before any consideration of development activity or land purchases along the waterfront area, prospective developers and owners are advised to check the ownership of the adjacent underwater lands at the HYS Office of General Services (OGS). OGS administrates State lands and maintains "Water Grant Index Maps" that identify lands within State ownership, and grants, easements, and leases previously issued by the State. This includes underwater lands, which are used for things like marinas in the Village of Piermont. [6]

The Hudson River coastline within the Village was changed in the 1850's, as Piermont Ave served as the original marsh shoreline for the Village. During this time, land that would be just north of the Pier was dredged, and the Pier was filled in 1.5 miles into the Hudson River. Currently, Piermont Ave stands at about 25ft. above sea level, where it was previously was the coastline.

b. Sparkill Creek

The Sparkill Creek and marsh, a tributary to the Hudson River, includes 0.3 miles of marsh shoreline, 0.9 miles of tidal waters, and 0.6 miles as a freshwater stream. The creek flows through the Sparkill Gap in the Hudson Palisades in Bergen County, New Jersey and is present in Piermont beginning in undeveloped marshland of the National Estuarine Research Reserve, where it eventually joins the Hudson River on the northern border of Tallman Mountain State Park. Within Piermont, the Sparkill runs through the valley of Mount Nebo and Tallman Mountain, forming a gap in the escarpment. The creek is also responsible for feeding much of Piermont's wetlands, which are shown on Map X, Water Resources.

c. Floodplains

[6] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://cms9files1.revize.com/piermont/document_center/Forms%20&%20Applications/Piermont%20Waterfront%20Resiliency%20Committee/LWRP%20June%202018.pdf

Due to the unique location of the Village along the Hudson River waterfront, the community has a high risk of flood damage during severe weather events and as the risks of climate change and sea level rise increase. As sea levels rise and severity and frequency of storm events increase, the floodplain will continue to extend further into inland Piermont, limiting opportunities for new development and putting existing structures at risk. The Village is subject to and has experienced both estuarine and tributary flooding, as it lies at the bottom of the drainage basin of the Sparkilll Creek and Hudson River, where tides greatly impact stormwater runoff and can create backup when downhill flow is pushed back by incoming tides.

The Federal Emergency Management Agency (FEMA) consistently updates Special Flood Hazard Areas (SFHA) for both the 100 year floodplain (1% annual chance of flood) and the 500 year floodplain (0.2% annual chance of flood) [7], which are both present in Piermont, as shown on Map X, Water Resources. In general, these floodplains are located within the areas closest to wetlands, the Sparkill Creek, and the Hudson River shoreline.

The Village of Piermont has adopted code (Chapter 112) intended to promote the public health, safety, and general welfare of the public, as well as to minimize public and private losses due to flood damages. This chapter of code is designed to:

A. Regulate uses which are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
C. Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
D. Control filling, grading, dredging and other development which may increase erosion or flood damages;
E. Regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and
F. Qualify for and maintain for participation in the National Flood Insurance Program[8]

3.4.4 Waterways and Water Quality Classifications

a. Hudson River Watershed

The Hudson River Watershed covers about 13,400 square miles and includes the Upper Hudson, Mohawk River, and Hudson River estuary watersheds. It is almost entirely located in New York State, with smaller portions located in Vermont, Massachusetts, Connecticut, and New Jersey. The watershed populates 25% of New York State's land area, hosts numerous species of flora and fauna, as much of the watershed originally consisted of tidal marshes. Water flows from land into

[7] https://www.fema.gov/glossary/flood-zones
[8] https://ecode360.com/28095319

the watershed by a network of rivers and streams, as well as underground through groundwater aquifers. [9]

The entirety of the Village of Piermont is located in the Hudson Watershed, and benefits from the various nearby tributaries and streams that are a part of the Hudson River network. This also results in the various wetlands that appear south of the Piermont Pier, as well as the Sparkill Creek Watershed.

b. Sparkill Creek Watershed

The Sparkill Creek Watershed begins on Clausland Mountain and eventually ends up in north-west New Jersey, where it circles back to the Piermont Marsh. The watershed is approximately 12 quare miles, and flows through six New York municipalities (Blauvelt, Orangeburg, Tappan, Palisades, Sparkill, and Piermont) and one New Jersey borough (Northvale). In total, the watershed's area is 47% urban, 45% forested, and 8% wetlands. [10] Within Piermont, the watershed exists mainly at the south most portion of the Village, surrounding the Piermont Marsh where it exists as Freshwater Forested/Shrub wetland and into the Village.

c. Groundwater

Although individual wells are not a common water source for the Village of Piermont, 70% of the water in the supply region comes from underground wells located throughout Rockland County.[11]

As shown on Map X, Piermont hosts a portion of the Newark Basin aquifer located at the south-west portion of the Village. The Newark basin aquifer is a fractured-bedrock aquifer, in which roughly 300,000 individuals reside. Because 70% of the region's water supply comes form underground wells throughout Rockland County, the aquifer experiences high summer pumping rates, annual withdrawals that have approached or exceeded previous estimates of aquifer recharge, and numerous contamination problems that have caused shut downs of production wells. [12]

d. Water Quality and Classifications

Water quality is a major concern within Piermont, as Village is located on the Hudson River and contains the Sparkill Creek, a major tributary. Per the New York State Department of Environmental Conservation (DEC), the Sparkill Creek is a C classified waterbody in all portions. This indicates that the Sparkill's best uses are primarily fisheries and non-contact uses such as

[9] https://hudsonwatershed.org/hudson-watershed/
[10] www.sparkillcreek.org
[11] https://mywater.veolia.us/new-york/water-in-my-area/about-my-water
[12] https://www.usgs.gov/publications/water-resources-rockland-county-new-york-2005-07-emphasis-newark-basin-bedrock-aquifer

boating and kayaking, as the two major pollutants found in the creek have been identified as dissolved oxygen and fecal coliform per 2010 DEC data. [13]

The Hudson River has been classified as an SB waterbody, meaning they are best used for fishing and primary and secondary recreation, and are suitable for fish propagation and survival. Activities are not as limited as they were roughly 50 years ago; however bathing, swimming, fish consumption, recreation, are all impaired and caution is promoted. Per the DEC, the most recent known pollutants found in the Hudson River are cadmium, PCBs, contaminated sediment, sewer overflows and urban/stormwater runoff. [14]

Within Piermont, fecal coliform is a major concern in the Sparkill Creek and Hudson River, and past studies have proven its presence in almost all parts of the Sparkill. However, testing from Riverkeeper, a local non-profit organization, indicated that in 2016, water quality is improving due to mitigation measures implemented by properties and communities upstream. [15]

3.4.5 Geology

a. Geologic Features

The geological history of Piermont dates back millions of years, primarily being influenced by the retreat of glaciers during the last Ice Age, which left a lasting impact on the landscape and topography. These glacial deposits from the surrounding area formed the geologic foundation of the area, and reshaped the land and soil contents to what it stands as currently.

The bedrock that underlies the Village of Piermont is a part of the Newark Basin, which is a sedimentary basin formed during the Triassic Period around 200 million years ago. This bedrock consists of sedimentary rock formations including sandstone, shale, and conglomerate, and the rock layers present were deposited into a costal plain environment that now makes up Piermont's coast with the aid of tectonic movement.

The Hudson River, which borders Piermont, also plays an integral role in Piermont's geology through erosion and sediment transport. The river's path, over time, has contributed to the formation of various riverbanks, floodplains, and tidal marshes within the area. Sediments that are carried by the river, such as sand, silt, and clay, have also been deposited along the course of the Hudson River, including any local geology in its path.

One of the most significant geological features near the Village of Piermont is the Palisades Ridge, which is a prominent igneous intrusion that forms the cliffs along the western shore of the

[13] https://www.dec.ny.gov/data/WQP/PWL/1301-0088.html
[14] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.dec.ny.gov/data/WQP/PWL/1301-0094.pdf
[15] https://www.riverkeeper.org/water-quality/hudson-river/rockland-westchester/piermont-pier/

Hudson River. The ridge consists primarily of basalt, which is a dark volcanic rock formed roughly 200 million years ago during the Jurassic Period, and was formed via magma forcing its way into sedimentary rocks, where it solidified underground and was later exposed via erosion. [16]

3.4.6 Ecology

b. Endangered Species and Critical Habitats

The area within and surrounding the Village of Piermont experience tidal influences as the Hudson River's tide rises and falls, affecting water levels and nearby wetlands. This interaction between the fresh and salt water creates unique ecological habitats that include the tidal marshes and estuarine environments present in the Village of Piermont.

Due to its geographical location and proximity to wetlands, marshes, and the Hudson River, Piermont has a number of endangered species known to be present in the area. They are as follows:

Table X.X Endangered Species

Species	Scientific Name	Status
Plants		
Late Flowering Boneset	Eupatorium serotinum	NY-E
Birds		
Golden Eagle	Aquila chrysaetos	NY-E
Bald Eagle	Haliaeetus leucocephalus	NY-T
Peregrine Falcon	Falco peregrinus	NY-E
Osprey	Pandion haliaetus	NY-SC
Sharp Shinned Hawk	Accipiter striatus	NY-SC
Cooper's Hawk	Accipiter cooperii	NY-SC
Red-Shouldered Hawk	Buteo lineatus	NY-SC
Northern Goshawk	Accipiter gentilis	NY-SC
Northern Harrier	Circus cyaneus	NY-T
Pied-Billed Grebe	Podilymbus Podiceps	NY-T
Common Loon	Gavia immer	NY-SC
Mammals		
Indiana Bat	Myotis sodalis	US-E

[16] https://www.dec.ny.gov/docs/remediation_hudson_pdf/hrnerrmanagementplan.pdf

New England Cottontail	Sylvilagus transitionalis	US-C
Reptiles and Amphibians		
Bog Turtle	Clemmys (glyptemys) muhlenbergii	US-T, NY-E
Eastern Box Turtle	Terrapene carolina	NY-SC
Spotted Turtle	Clemmys guttata	NY-SC
Marbled salamander	Ambystoma opacum	NY-SC
Southern leopard frog	Rana sphenocephala	NY-SC

c. Significant Habitats

The Piermont Marsh is the prominent Significant Coastal Fish and Wildlife Habitat (SCFWH) within Piermont, and encompasses 1,017 acres total and two miles of shoreline south of the Piermont Pier. It lies at the southern edge of the Village, south of Nyack and on the western shore of the Tappan Zee. The significant fish and wildlife portion of the marsh, which is approximately 780 acres, hosts a large, intertidal, predominantly brackish marsh with extensive tidal shallows. Within the marsh, vast amount of estuarine wildlife are present. The marsh supports many different species of nesting birds, as well as thousands of migratory birds that use the marsh as a 'pit stop' in the spring and fall. As listed above, the marsh also hosts a large range of endangered and threatened species which is important to their preservation.

The majority of the marsh, which is steep, undeveloped, forested land, is located within Tallman Mountain State Park which is owned by the Palisades Interstate Park Commission. A 100-acre portion of a northern section of the marsh is also owned by the NYSDEC, where it provides ecological value for a large portion of Piermont. Overall, as a salt marsh, it plays a crucial role in maintaining the overall health of the surrounding environment and has a variety of key ecosystem functions.

Salt marshes act as a natural buffer against flooding by absorbing and storing excess water during flooding and storm events, or during the Hudson River's high tides. The high density of vegetation helps to reduce the effects of these events, protecting the adjacent land from erosion and flooding. Erosion is also prevented by the dense root systems of plants and vegetation, increasing shoreline stability and preserving the integrity of adjacent areas.

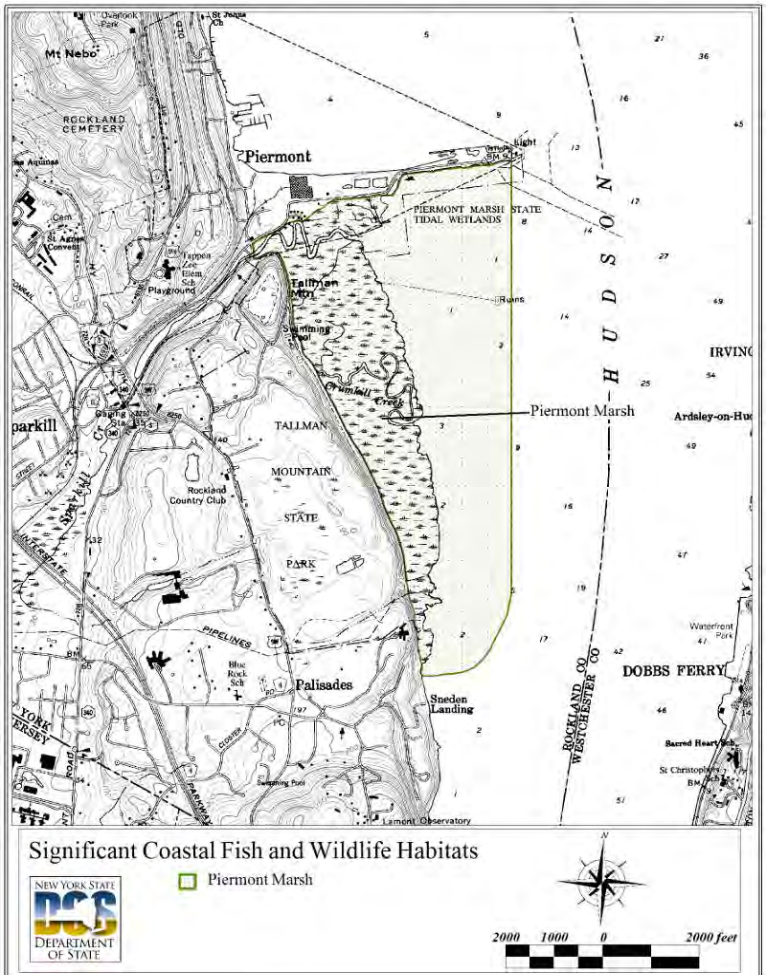
The Piermont Marsh also acts as a natural filter for all water that flows through it, particularly that from the Sparkill Creek and Hudson River. The complex root systems of marsh plants and the sediment present in the marsh are able to trap and remove various pollutants and excess nutrients that pass through, including nitrogen and phosphorus. This improves overall water quality in the area, and reduces the negative impacts of runoff into the Hudson River. Aside from water quality, salt marshes are highly efficient at carbon sequestration as the large density of vegetation in the marsh convert carbon dioxide to organic matter, which is then stored in the marsh's sediments, aiding in the reduction of greenhouse gas emissions.

Aerial View of Piermont, Source: Google Earth, 2023

Aside from the marshy regions of the Village of Piermont, the pockets of forested vacant land are essential habitats that contribute to the areas natural beauty and biodiversity. As shown on the aerial image, these are primarily located within the southern portion of Piermont. The forests areas consist of a mix of deciduous and evergreen trees such as oaks, maples, pines, and hemlocks, which aid in promoting habitat for a wide range of understory plants and wildlife. Aside from the endangered species listed above that are present in Piermont, the forests lands host a variety of plant and animal species that contribute to the overall biodiversity of the region. These include red fox,

Opossum, chipmunks, racoons, Cottontail rabbits, Grey Squirrels, white tailed deer, coyotes, songbirds and raptors, bears, among many others. [17]

Any potential activities that would have adverse impacts on the Piermont Marsh should be consistent with the research and management programs of the Hudson River National Estuarine Research Reserve to preserve the marsh and its ecosystem functions. Elimination of the marsh area, littoral zones, shallow areas, or mudflats associated with the Sparkill Creek and marsh would result in the direct loss of valuable fish and wildlife habitat. As a part of regulation efforts for the marsh, a habitat impairment test must be met for any activity that is subject to consistency review under Federal and State laws, or under applicable local laws contained in an approved local waterfront consistency program. The Piermont Marsh SCFWH Rating form, last revised August 2012, provides assessment criteria for the test. [18]



Map of Piermont Marsh SCFWH

d. Critical Environmental Areas

A Critical Environmental Area is an area within New York State that has been designated by a local or state agency to recognize specific geographical areas with characteristics such as a feature that benefits or threats human health, an exceptional or unique natural setting, an exceptional or unique social, historic, archaeological, recreational, or educational value, or an inherent ecological, geological, or hydrological sensitivity to change that may be adversely affected by physical disturbance. [19]

The Village of Piermont is the host to served identified conservation areas that host specific natural features that are vital for providing habitat for Piermont's biodiversity. In Piermont's 2018

[17] https://www.dec.ny.gov/outdoor/84516.html
[18] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://dos.ny.gov/system/files/documents/2020/03/piermont_marsh_final.pdf
[19] https://www.dec.ny.gov/permits/6184.html

and original LWRPs, the following areas were identified as Critical Environmental Areas within the Village:

1. The Palisades Interstate Park Marsh – part of Tallman Mountan State Park and owned by the Palisades Interstate Park, located south of the Sparkill Creek.
2. Paradise Avenue DEC Conservation Marsh
3. DEC Conservation Marsh- a former landfill, located south of Ferry Road on the Pier, owned by the DEC.
4. Parts of Piermont Bay- the marshy area on the north side of the Pier.
5. Brookside Sanctuary- A Village leased property located north of the pump station on Sparkill Creek.

Additionally, the DEC identified other Critical Environmental Areas within the Village as of 1985, which have upheld their classification to present day. They are as follows:

1. Palisades Slope- Protected for open space and aesthetic beauty, located on the southern 'tail' of Piermont west of the Sparkill Creek
2. Sparkill Creek- Protected for open space and aesthetic beauty, located throughout the southern-most section of Piermont throughout the Sparkill Creek and Piermont Marsh
3. Piermont Pier- Protected for open space and aesthetic beauty, located from Tate Ave to the end of the Piermont Pier. [20]

e. Preserved Lands and Open Space

As mentioned in **Chapter 3.3, Land Use and Zoning Analysis**, the Village consists of 127.7 acres of recreation areas and conserved lands, with only 0.40 acres being private recreation areas and conservation easements. Additionally, there are 245.5 acres of vacant land within the Village.

The Piermont Marsh and adjoining lands are a part of the Piermont Marsh section of the Hudson River National Estuarine Research Reserve, which is also known as the Piermont Marsh Reserve. The reserve is part of the National Estuarine Research Reserve System, which consists of 29 estuarine areas across North America. These areas are reserved for long term research, education, and coastal stewardship, and are the result of a partnership between NOAA and the coastal states and territories. The Hudson River National Estuarine Research Reserve is currently managed by the DEC in partnership with the NYS Parks and Palisades Interstate Park Commission, as well as local organizations.

[20] https://gisservices.dec.ny.gov/gis/dil/index.html?cat=LR

3.5 Scenic and Historic Resources Inventory and Analysis

3.5.1 Summary of Historic Resources

The following chapter is based on applications submitted to the National Register of Historic Places accessed through the Cultural Resource Inventory System (CRIS)[1], the Village of Piermont's June 2018 LWRP[2], and the Piermont Historical Society's website[3].

Key Takeaways

1. Historic Resources Potential

The Village of Piermont has a rich history that dates back as far as the 17th and 18th centuries, with earliest settlements near Rockland Road Bridge. In the 19th century, the creation of the Erie Railroad as well as the extension of Piermont into the Hudson caused more people to move to the area. When the railroad days ended, the 20th century brought with it a new industry of the Piermont Paper Company. Around the same time, soldiers were looking to Piermont as a principal embarkation point and ultimately as a returning point at the end of World War II.

2. NRHP Sites

The Village of Piermont has 18 sites and one (1) building district that are listed on the National Register of Historic Places (NRHP). The Village of Piermont has one (1) site which is eligible for National Register of Historic Places (NRHP) designation, in addition to numerous undetermined eligibility locations. The Village can view these locations as possibilities for future historic recognition.

3. Local History

The Village of Piermont has numerous locations that are locally recognized as historically relevant, although not officially registered though the National Register of Historic Places. These locally significant historic locations help to build the sense of community and connection to the past with the Village.

4. Scenic Vistas and Landscapes

Due to its location, the Village of Piermont offers residents and visitors alike scenic vistas and landscapes. The Village has identified five (5) scenic views that are especially prevalent to the area.

Existing Conditions

The location of the Village of Piermont—adjacent to the Hudson River at a break in the Palisades—was an attractive location for settlement. This is true for both the Lenape, or "the original people", who frequented the area as well as colonial settlers starting in as early as the 17th century. The Sparkill Creek provided access to the interior from the Hudson River, resulting in the first commercial settlement of Tappan Slote, with a few buildings around the present-day

[1] Cultural Resource Information System (CRIS) (ny.gov)
[2] Village of Piermont LWRP June 2018
[3] Piermont Historical Society (piermonthistorysociety.org)

Rockland Road Bridge. During the 18th century, the Onderdonk House was the home of patriots and fired upon by many British ships.

The 19th century brought industrial developments to the rea, as the Erie Railroad was constructed and provided access from New York City to Lake Erie. This construction resulted in the expansion of Piermont into the area it is today. The pier was extended into the Hudson River to provide access to barges to NYC that could not otherwise be accessed from the existing shoreline. Tappan Slote became Piermont, as Eleazar Lord, owner of the Erie Railroad wanted to rename the area to recognize the Erie Pier and the mountain where he was building his estate. As regulations changed with regards to the railroads in America, the demand for Piermont as a railroad location diminished.

The early 20th century brought a new industry to Piermont, as the Piermont Paper Company built a new industrial complex on the old rail yards. This company later merged with the Robert Gair Company of Brooklyn, expanding to reach nearly 1,200 employees. In the mid-20th century Gair merged with the Continental Can Company, and in the 1970s Federal Paperboard and Clevepak were still operating in some of the original buildings. Just as had happened with the railroad industry, the paper industry became obsolete as mills were forced to close due to unprofitability.

During World War II, Piermont pier was taken over by the U.S. Government to be used as a principal embarkation point for soldiers heading to Europe. Piermont became know as "Last Stop USA" to many soldiers, as over 40,000 soldiers per month marched from nearby Camp Shanks out to the end of the pier to ships that were going to take them to France in support of the D-Day invasion forces. This same pier was used by other half a million men on their return home after the war.

Ultimately, the late 19th and early 20th centuries showed a growth of tourism to the Piermont area. People from the city journeyed to the Hudson Valley, looking to escape to nature. The Fort Comfort Inn and Realty Company converted an old mansion along the west side of Piermont Avenue into a hotel, providing visitors with a place to stay when visiting the area. The "Fort Comfort Resort", also know as "Old Fort Comfort Park", was located on the peninsula between Piermont Avenue and the river, southeast of the hotel in 1903. This recreational enterprise included an ice cream parlor, bathing beach, merry-go-round and shooting gallery. Tweed Boulevard was planned and developed by Boss Tweed to be a "modern" roadway to access the mansions built for his wealthy acquaintances. Tweed's political career's demise was also coupled with the demise of the project.[4]

Inventorying the Village's historic resources is a critical component in the analysis of Piermont's existing conditions. Historic resources are not only a source of identity for the community but

[4] Village of Piermont LWRP June 2018

can additionally provide enhanced economic opportunities, strengthen the community's social fabric, and more. The National Register of Historic Places is a federally sponsored inventory of sites and districts of historic significance in the United States. Similarly, the New York State Historic Preservation Office (NYSHPO) inventories sites significant to the State as well, with many sites often overlapping with those listed on the National Register. Sites and districts may be eligible for listing on the State or National Register of Historic Places if they meet one of four criteria. These criteria are:

i. Associated with events that have made a significant contribution to the broad patterns in history;
ii. Associated with the lives of persons significant in the past;
iii. Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;
iv. Have yielded or may be likely to yield information important in prehistory or history.

Under Federal law, owners of private property listed in the National Register are free to maintain, manage, or dispose of their property as they choose, provided that there is no Federal involvement. Owners have no obligation to open their properties to the public, to restore them or even to maintain them, if they choose not to do so. However, recognition on the Register does provide benefits. Owners of properties listed in the National Register may be eligible for a 20% investment tax credit for the certified rehabilitation of income-producing certified historic structures such as commercial, industrial, or rental residential buildings. Grant money is widely available to not-for-profit organizations and municipalities for historic preservation purposes.

18 sites and one (1) district are listed in the State and National Registers of Historic Places within the Village of Piermont. Additionally, 1 (one) other site has been granted eligibility for listing on the Register. The sites that have been listed and many of the eligible sites are located within the recognized historic district. Several sites are tied to the Revolutionary, Industrial and World War II Eras. In addition, a large number of the listed sites are private residential homes displaying unique architectural features of historic importance. The summary table below, **Table 3.5.1**, provides all listed and eligible sites and districts within the Village's boundaries. **Figure X: XX** shows the locations of all of the NRHP sites and districts that are listed, eligible, or undetermined in the Village of Piermont. The NHRP identified eight (8) sites of undetermined eligibility including Lord's Castle, St. John's Rectory, the Palisades School, the Sneden House, the Virginia Johnson Estate, 390 Piermont Ave, 712 Piermont Ave, and 127 Piermont Ave. Please note that ineligible locations have *not* been shown on this figure; there are five (5) locations that were investigated and deemed not eligible.

Table 3.5.1: National Register of Historic Places Listed and Eligible Sites and Districts

Listed Building District - National Register of Historic Places
1. Rockland Road Bridge Historic District
Listed Sites - National Register of Historic Places
1. Rockland Road Bridge
2. Haddock's Hall
3. Ferdon Hall
4. 272 Piermont Avenue
5. 269 Piermont Avenue
6. 265 Piermont Avenue
7. 264 Piermont Avenue
8. 254 Piermont Avenue- Canzona's Deli
9. 250 Piermont Avenue
10. 239 Piermont Avenue
11. 236 Piermont Avenue
12. Sparkill Pump House and Dam
13. 20 Rockland Road
14. Sparkill Creek Drawbridge
15. Onderdonk House
16. Piermont Railroad Station
17. House at 352 Piermont Avenue
18. First Reformed Church of Piermont
Eligible Sites - National Register of Historic Places
1. 54 Paradise Avenue

Table 3.5.2: Locally Significant Historic Locations

1. The Flywheel
2. Fort Comfort Inn & Resort
3. The Mine Hole
4. Lord's Castle
5. The Piermont Pier

3.5.2 Inventory-NRHP

Listed Building Districts- National Register of Historic Places

1. Rockland Road Bridge Historic District

- Location: Ferdon Avenue, Rockland Road, and South Piermont Avenue
- Period of Significance: ca. 1785- ca. 1940
- Summary of Significance

The Rockland Road Bridge Historic District encompasses a small but locally significant collection of buildings and structures where share important ties to the village's historic development from the late 18th century to the early 20th century. At the center of the district, the Rockland Road Bridge is a masonry arch bridge created in 1874 to span across the Sparkill Creek immediately south of the impoundment which defined the western-most navigable portion of the watercourse. Piermont's development was closely connected to the Sparkill previously known as Tappan Slote. It was at this location that the village's first commercial and light industrial enterprises were established. Two of the oldest remaining building stock in Piermont are included in the historic district, as well as Haddock Hall, a large mixed-use commercial and civil building from the 1870s and Ferdon Hall, a large Greek Revival Style residence, erected ca. 1835 for William Ferdon. Haddock Hall, Ferdon Hall, and Rockland Road Bridge were listed sites on the NRHP before the listing of the district.

Listed Sites[i]- National Register of Historic Places

1. Rockland Road Bridge

- Construction Year: 1874
- Summary of Significance: The Rockland Road Bridge is a single-span brick arch structure, with a length of 22 feet, width of 30 feet, and a four-foot-wide walkway, and carries two lanes of traffic over the Sparkill Creek between Ferdon Avenue and South Piermont Avenue. The arch is brick, while the spandrel and wing walls are uncoursed and roughly dressed stone, bedded in mortar. The brick was restored in 2011, and is the only surviving stone and single-span brick-arched bridge in Rockland County and one of only three remaining in New York State.

Image 3.5.2.1: View of Sparkill Creek from Rockland Road Bridge

2. Haddock's Hall

Image 3.5.2.2: Haddock's Hall from Rockland Road Bridge

- Address: 300 Ferdon Avenue
- Construction Year: 1875-76
- Architecture Classifications: Neo-Greco inspiration
- Physical Summary: Haddock Hall is a two-story, mixed used brick commercial and civil building of with a three-story tower at the south west end. Window openings have segmental-arched heads, the bays separated vertically by brick pilasters. First and second story windows are separated by a corbelled brickband. Windows are original and consist of two over two units. A paneled brick parapet terminates the main block and shields the roof line from view.
- Summary of Significance: The building was erected for Roger Haddock by builder W.H. Hand, and originally functioned as Haddock's store with village offices and the village library occupying the second floor. In 1900 it became Hasbrouck Motor Works, making motors for yachts. And then from 1926 to 1975 it was a textile mill. During World War II, ripcords for parachutes and ribbons for good conduct medals were made at Haddock's Hall. It has since then become a private residence and is locally referred to as the Silk Mill.

3. Ferdon Hall

- Address: 277 Ferdon Avenue
- Construction Year: ca. 1835
- Architecture Classifications: temple form, Greek Revival-style
- Physical Summary: Ferdon Hall was originally built as a self-contained frame house on a square shaped plan; the swelling was aggrandized ca. 1921 with the addition of a multi-story addition to the west elevation and likewise a modest rear porte-cochere; two additional minor renovations were due to augment these additions but in total the additions have since been removed. The house was recently enlarged with the addition of multi-story flanker wings and the construction of a new rear verandah, with Grecian Doric elements. The house is distinguished by a monumental

Image 3.5.2.3: Ferdon Hall, photo from Piermont Historic Society

freestanding portico of eclectic neoclassical conception, including six Ionic columns and a Doric order entablature.

- Summary of Significance: This dwelling was erected for prominent 19th century Piermont resident and mill proprietor William Ferdon. In fact, the house was oriented with its monumental portico facing north towards Ferdon Avenue and the Sparkill Creek, where William Ferdon's business interests were located. The house is arguably the foremost remaining example of temple-front residential architecture from this era in Rockland County.

4. 272 Piermont Ave

- Address: 272 Piermont Avenue
- Construction Year: ca. 1785
- Physical Summary: The house is one and a half stories of coursed sandstone construction, gable ended, with three-bay façade and centrally located door. Windows are fitted with six-over-six wood sash and housed in wood frames with molded architraves. The front pitch of the gabled roof is punctuated by three evenly spaced dormers fitted with two-over-two wood windows. The gable fields on the side elevations are fitted with clapboard and the building has two chimneys on either end.

Image 3.5.2.4: 272 Piermont Avenue

- Summary of Significance: The three-bay façade with center entrance is consistent with 18th century two-room house models in Rockland County, NY and Bergen County, NJ. The presence of chimneys at both ends were likely later modifications to the property. Most importantly, this is thought to be the oldest house in Piermont, with some assertions dating the erection of the house to ca. 1730.

5. 269 Piermont Ave

Image 3.5.2.5: 269 Piermont Avenue

- Address: 269 Piermont Avenue
- Construction Year: ca. 1854
- Physical Summary: This building is a two-story brick structure, two bays wide with a side entrance plan, with a two-story frame rear section and a single-story brick wing to the east. The façade of the main block is laid up in stretcher bond, the side elevation is said up in common bond, and the façade of the wing is laid up in common bond. The façade shows reworking done to the building, as a previous layout accounted for a large bay for a fire engine.
- Summary of Significance: The building is shown on the 1877 Sanborn fire insurance map as a firehouse referred to as "Protection Engine Company." This first company began operations in 1851, under the direction of James Westervelt. A 1927 map shows the location as a dwelling with the adjacent garage.

6. 265 Piermont Ave*

- Address: 265 Piermont Avenue
- Physical Summary: A small single-story brick house of modern construction with saltbox roof profile.
- Summary of Significance: This location was identified as a non-contributing building in the NRHP application for the Rockland Road Bridge Historic District. Despite it being noted as "non-contributing" in the application, the location is listed on the NRHP list.

7. 264 Piermont Ave

- Address: 264 Piermont Avenue
- Construction Year: ca. 1800
- Physical Summary: A three-story stone and frame building, gable ended with a five-bay façade with center entrance. The structure was originally a two-story stone dwelling, with the third story added on at an unknown date. The stone bearing walls are laid up in coursed ashlar with grapevine mortar joints, while the gable ends have brick keyed into the stonework. Windows are currently fitted with

Image 3.5.2.7: 264 Piermont Avenue

replacement sashes with a six-over-six applied muntin profile, with historic photos showing 12-over-12 sashes in the past. The interior retains some of the ca. 1800 finish work, but it has been changed to apartment units.

- Summary of Significance: According to tradition, Aaron Burr was at this building, a tavern at the time, after his July 1804 duel with Alexander Hamilton.

8. Canzona's Deli*

- Address: 254 Piermont Avenue
- Construction Year:
- Physical Summary: A two-story frame building, gable ended, with brick veneer at first-story level.
- Summary of Significance: This building's position and footprint is closely related to the cobbler's shop and storage building depicted on the 1877 Sanborn map that abutted the house at 250 Piermont Avenue. According to tradition, this was likely a stable early in the 20th century. Despite the close relation between the existing building and the past buildings and uses, the physical integrity of the resource may it a non-contributing factor for the Rockland Road Bridge Historic District consideration.

9. 250 Piermont Ave

Image 3.5.2.9: 250 Piermont Avenue

- Address: 250 Piermont Avenue
- Construction Year: ca. 1800
- Physical Summary: A two and a half story, end-gabled brick house with side entrance plan with a two story, three-bay brick addition added ca. 1840 and a smaller frame addition. The façade of the original three-bay house features Flemish bond brickwork with cut brownstone dressings including splayed window lintels with central keystones and a cut brownstone watertable. Windows are fitted with replacement sash with applied muntins in a six-over-six configuration and are flanked by paneled wood shutters. The entrance frontispiece is of a Greek Revival-style type, as is the ca. 1840 addition. The original section has a boxed cornice with concealed cornice gutter, reworked, while the addition has a deep frieze with molded architrave. Some of the ca. 1840 additions suggest additional modifications ca. 1860.
- Summary of Significance: The interior of the earliest section of the building has original features including its open-stringer staircase. This feature seems to have been derived from Asher Benjamin's *Country Builder's Assistant* of 1797.

10. 239 Piermont Ave

Image 3.5.2.10: 239 Piermont Avenue

- Address: 239 Piermont Avenue
- Construction Year: ca. 1856
- Physical Summary: A two-story building with bell-cast mansard roof, built on a square shaped plan. The primary elevation Fronting Piermont Avenue includes a large bay fitted with double-leaf wood doors, each approximately 10 feet tall, which are hung on case-iron strap hinges. These doors support the conclusion that the building was used as a livery stable in the 19th century. In addition, the structure has a smaller four aneled entrance door and a dormer with pedimented crown and double-leaf doors that were likely used to convey materials from the road to an upper level storage area. A bracketed wood cornice marks the transition between the brick walls of the superstructure and the mansard roof. The elevation facing the Sparkill Creek includes a large open bay at the second story level and an associated balcony.
- Summary of Significance: Locally, this location is referred to as "The Store." Abraham Mabie, the first known storeowner in the area, operated a general store that was ultimately taken over by Major Peter Taulman. The store was later rebuilt at this location and later converted to stables by Roger Haddock.

11. 236 Piermont Ave

- Address: 236 Piermont Avenue
- Construction Year: ca. 1870
- Architecture Classifications: Gothic Revival-style
- Physical Summary: Two-story frame gable-front dwelling with two-story wing. The main block has a side entrance is clapboard sided and has Gothic Revival verge board trimming the roof rake. A porch aligns with the façade elevation, sustained by four square piers. Windows are fitted with replacement sash with applied muntins in a six-over-six configuration. The steeply pitched roof is clad with asphalt. The wing is brick at the first-story level and frame with clapboard sheathing at the second story level.

Image 3.5.2.11: 236 Piermont Avenue

- Summary of Significance: The building's footprint is the same as depicted on the 1877 Sanborn map, excluding the garage.

12. Sparkill Pump House and Dam

- Location: southeast of the Rockland Road Bridge, along Piermont Avenue
- Construction Year: ca. 1940
- Physical Summary: The pump house is a flat roofed utilitarian building with brick walls, steel casement windows and a cast stone cornice. The dam is a reinforced concrete structure built in the early 19th century to replace an earlier stone dam. In the mid-20th century, it was made taller to the existing height.

Image 3.5.2.12: Sparkill Pump House

13. 20 Rockland Road

- Address: 20 Rockland Road
- Construction Year: ca. 1835
- Physical Summary: This property has a two-story frame dwelling, gable ended, with five-bay façade and center entrance place. The façade has an intersecting gable corresponding with the three central bays. Most windows are hung with six-over-six windows with pedimented crowns a, while the main entrance has a trabeated Greek Revival-stye treatment with pilasters, three-quarter length sidelights and transom lights. The building is clapboard sided and the roof is covered with metal shingles. The round-arched pared windows with four-over-four sash, intersecting façade gable and bracketed cornice are modifications dated ca. 1860.
- Summary of Significance: The property was owned in 1891 by W.L. Lawrence. It was later a home and lab for Sparhawk renowned chemist and perfumiest.

14. Sparkill Creek Drawbridge

Image 3.5.2.14: Sparkill Creek Drawbridge

- Location: Bridge Street, over the Sparkill Creek
- Construction Year:
- Architecture Classifications
- Physical Summary: The bridge is a single-leaf moveable metal bridge comprised of a Pratt Pony truss deck built of metal angles riveted to gusset plates at each panel point. The timber deck is supported on metal floor beams and diagonal cross braces.
- Summary of Significance: The Sparkill Creek Drawbridge is listed on the National Register as an uncommon surviving example of a small-scale, late nineteenth century mechanical and structural engineering feature and remains a functioning historic transportation structure in its community.

15.Onderdonk House

Image 3.5.2.15: Onderdonk House

- Address: 758 Piermont Avenue
- Construction Year: 1737
- Architecture Classifications: Red sandstone Dutch Colonial
- Physical Summary: A 1.5-story stone (brownstone or sandstone) house in a rural setting. Dutch heritage related features include a porch. The property is historically known as the Onderdonk-Haring house.
- Summary of Significance: This was the site of a meeting on May 6, 1783, between George Washington and Lord Carleton before leaving for Tappan to arrange for the final evacuation of British troops at the end of the Revolutionary War. The British Navy saluted General Washington and the American nation in a 17- gun salute for the first time.

16.Piermont Railroad Station

Image 3.5.2.16: Piermont Railroad Station and Museum

- Address: 50 Ash Street.
- Construction Year: 1873
- Architecture Classifications: Late Victorian
- Physical Summary: A one and one-half story building of light frame construction, built above a stone foundation with stylistic treatments reflecting the contemporary popularity of the Stick Style.
- Summary of Significance: The Piermont Railroad Station is listed on the National Register for its historical significance as the place of operation of the former Northern Railroad, which established a commuter line in 1869 from this region to Jersey City. The station reflects the distinctive physical attributes of the Stick Style as well as typical period railroad station features.

17.House at 352 Piermont Avenue

- Address: 352 Piermont Avenue
- Construction Year: ca. 1780
- Architecture Classifications: Colonial
- Physical Summary: A 2-story stone (brownstone or sandstone) house in a rural setting. Dutch heritage related features include a banked basement and porch. The property is historically known as the Briggs house.
- Summary of Significance: The House at 352 Piermont Avenue is listed on the National Register as an example of an early vernacular sandstone building in the Village of Piermont. The building is also a relatively rare example of a two-story stone house in a region where one-and-a-half story homes dominated.

Image 3.5.2.17: 352 Piermont Avenue

18.First Reformed Church of Piermont

- Address: 361 Ferdon Avenue
- Construction Year: 1956

- Physical Summary: A one-story frame church building covered in white-painted shingles. The church has a central entry tower capped by a smaller square section and steeple. The front-gabled church building extends from the rear of the tower. The entry tower features a set of double doors capped by an elliptical transom with leaded glass. The hexagonal steeple extends from the roof. The side-gabled parish hall connects at the rear of the church.
- Summary of Significance: The church was originally founded as the Protestant Dutch Church in 1839 by Eleazar Lord, Cornelius Blauvelt, Abraham D. Vervalen, and William Lawrence. The church location was obtained in 1855, but the church that was built at the time was lost to fire in 1944. In 1946, the church as it stands today was erected.

Image 3.5.2.18: First Reformed Church of Piermont

NRHP Eligible Site

b. 54 Paradise Ave

- Address: 54 Paradise Avenue
- There is very little available about the property regarding how it was identified as an eligible site.

3.5.3 Locally Significant Historic Locations

The local historically significant locations and information below, although not recognized by the National Register of Historic Places, show the past existence of the Village of Piermont in a different light. The locations and information provided below do not include all of the possible historically relevant locations throughout the Village, as the connection between the Village the past is vast. Some other locations that may demand further investigation include Village Hall, the previous location of the Piermont Library on Hudson Terrace, and numerous other buildings as listed in the June 2018 LWRP. Additionally, some of the locations discussed below have been highlighted as undetermined for eligibility with the NRHP.

1. The Flywheel

Located near the center of the Village, the Flywheel is an immense reminder of the industrial past of the Village. In 1902, the Piermont Paper Company established a steam driven electrical system in its paper mill, dependent on the momentum of the flywheel. The location of the mill in Piermont was ideal, given the easy access to the Sparkill Creek for the water needed to produce the paper, as well as the nearby location of the railyards for supplies. Additionally, the mill

provided numerous jobs within the Village, growing the area into a commercial and industrial strength for over 80 years.

Image 3.5.3.1: The Flywheel

The Piermont Paper Company merged with the Robert Gair Company of Brooklyn in 1920, adopting with the merger its new method of cardboard production. The change in the production of the cardboard shortened the time needed to produce what had previously been a day's work. Moreover, cardboard changed the retail world by increasing the attractiveness of displays and improved public health. It is important to note that although highly successful and profitable for the area, the paper mills were not a picture-perfect example of safe working conditions as the mill was extremely hot with poor air conditions.

In 1956, the Robert Gair Company sold to the Continental Can Company. Then in 1971 Federal Paperboard bought the box factory and leased the paper mill, subleasing the latter two years later to Clevepak. Ultimately in 1982, the mill finally closed. There was no industry to replace the previous paper industry, so the mills were town down and later replaced by condos, art galleries, restaurants, and shops. During this demolition, the workers found that the flywheel was defying removal, as the wrecking ball bounced off it. As a result, the flywheel remains in the Village of Piermont, located in a park bearing its name.

Image3.5.3.2: Flywheel Park

2. Fort Comfort Inn & Resort

In the early 20th century, the Fallon Mansion was converted into the Fort Comfort Inn by the aptly named Fort Comfort Realty Company. This inn, offering "high class service; beautiful surroundings, caters especially to tourists; open all year" was the first time Piermont was used as a major tourist destination, as opposed to its various industrial focus. As the inn succeeded, it was expanded, maintaining its three-story height and doubling its length.

The first tragedy of the inn struck on September 6, 1912, when the building was destroyed by fire. It was soon rebuilt as two separate buildings. Unfortunately, the September fire was only the first of many, as a final fire in June 1931 ended the inn. All that remains are two pillars that had previously served as gateposts.

Owned by the same company as the Fort Comfort Inn, the Fort Comfort Resort and Pavilion erected in the early 1900s was located where the current Tappan Zee Marina and restaurant is. The resort was viewed as an "upper class" establishment with a beach. It later grew under ownership of William Thompson who turned the location into an amusement park of sorts. The Fort Comfort Resort, also know as "Old Fort Comfort Park" included lots of recreational opportunities including an ice cream parlor, the aforementioned bathing beach, merry-go-round and shooting gallery. Unfortunately, the resort came to a similar end as the inn, through a series of fires with the final one in 1975 ending it entirely.

3. The Mine Hole

Located across the street from 175 S. Piermont, this mine hole provides an important glimpse into the History of Piermont. The mine consists of two shafts, with one serving as a fresh water spring until it was contaminated in the 1940s and the other described as a straight, narrow excavation through bedrock. From Rockland Road Bridge to Valentine Avenue on the north side of the creek is also established locally as the Mine Hole District. Notably, this area was established by African Americans long before the Revolution.

4. Lord's Castle (1 Castle Road)

In the 1840's, Erie railroad baron, Eleazar Lord, built this 30 room, 15,000 square foot castle, which he named "The Cedars". It was then and continues to be referred to by locals as the Castle. Lord's Castle was influenced by a Gothic revival sentiment that had begun sweeping the eastern seaboard in the 1830s and was said to be modeled after the manor house on Sir Walter Scott's Scottish estate, Abbotsford. When Lord died, the house was passed to his daughter and her husband who struggled to afford it.

Alexander Blair Thaw ended up buying the house in 1890 and completed numerous alterations to it. These included an expansion as well as an interior remodel in the Beaux-Arts ornate style. Decades later, Thaw's half brother killed architect Stanford White because of jealousy over the relationship between White's wife, chorus girl Evelyn Nesbit, and White. This ultimately lead to what was known as "The Trial of the Century."

5. The Piermont Pier

The section of the Village of Piermont that juts into the Hudson River is interestingly enough a man-made peninsula created to encourage the railroad use in the area. In the mid 1800s, almost 100 acres of the Hudson River was filled to construct a 4000- foot long pier out into the river. First, people would travel by train along the Erie Railroad to the Piermont Pier, the last stop of the line from Dunkirk. Once at the pier, people were then able to board steamboats and travel down the Hudson River to New York City. In addition, the pier allowed the nearby mills and factories with easier access for supplies and product movement.

Image 3.5.3.3: Last Stop USA Memorial

During World War II, the pier adopted military used in addition to its civilian and industrial uses. Over half a million soldiers embarked from the Piermont Pier heading to New York Harbor and ultimately Europe to fight. Piermont was then referred to as "Last Stop USA" as this was the last time many of the soldiers would touch US soil before going off to fight. After the war had ended, this same pier became a central place of return for the soldiers.

Since 1987, as a tradition started by the Vietnam Veterans, a massive watch fire is created at the end of the pier every Memorial Day. The watch fire is one of many lit along the ridge of the Palisades. These fires symbolically light the way home for the soldiers who have died throughout the years in conflicts and wars of the US, and were originally used by George Washington as a warning system and ultimate signal of the ceasefire at the end of the Revolutionary War.

Two Railroads

It is important to note that there were in fact *two* railroad lines that ran to and from Piermont—the Erie Railroad and the Northern Railroad. These railroad lines allowed Piermont to flourish, bringing people and cargo alike into the area.

The Erie Railroad, developed by Eleazar Lord, ended at the Pier of Piermont. In 1832, New York State charted the New York Erie Railroad and in 1838 the pier was extended. The Eire Railroad created a strong and stable foundation for the railroad buildings, tracks and pier. This strong foundation allowed for the future construction of the paper mill and other development in the area. The Erie Railroad, totaling 447 miles, stretched from the pier of Piermont all the way to Dunkirk on Lake Erie, making it the longest railroad in the world at the time. In 1852, the restrictions on the railroad were lifted that had not allowed for lines across different states. Resultingly, in 1853 the railroad moved terminus points from Piermont to Jersey City, New Jersey.

The North Railroad, built in 1856 by the Northern Railroad of New Jersey, was a commuter rail line that ran from Jersey City to Sparkill to Piermont, with the goal of creating a connection between the Erie Railroad and New York City. In 1870, the railroad was extended from Sparkill to Nyack. Initially, the Piermont station was located across the street from the present-day Village Hall, but in 1883 moved locations to the still standing Piermont Railroad Station. In 1966, the Northern Railroad ceased operations.

3.5.4 Scenic Vistas and Landscapes

Given the location of Piermont, it is important to recognize the scenic resources ever present throughout the boundaries of the Village. In general terms, these scenic vistas and landscapes stretch throughout the Village, along Route 9W, the Erie Path, and even directly in downtown. Additionally, the many views become seasonally available as the trees in the area lose their leaves. In their June 2018 LWRP[5], the Village

Image 3.5.4: View of Piermont Bay from the North Shore Walkway

[5] Village of Piermont LWRP June 2018

identified five (5) viewsheds that should be protected. They can be seen in **Figure X: XX**, and were described as follows:

1. along Route 9W at the southern end of the Village from the viaduct over the Sparkill Creek, an aerial-like view of the Sparkill Creek Valley including the Brookside Sanctuary and Tallman Mountain with the Hudson Rive r and Tappan Zee Bridge in the distance.

2. along the Erie Path a little south of Ash Street from an overlook where the Sparkill Creek Valley opens out onto the Hudson River, an aerial-like view of the tidal portion of the Sparkill Creek including the Piermont Marsh and Tallman Mountain, the dwellings along Paradise Avenue dating from c. 1800, the base of the Piermont Pier, the end of the Piermont Pier, and the Tappan Zee across to Irvington and Dobbs Ferry.

3. along the Erie Path from an overlook a little upstream of the Silk Mill bridge, an aerial-like view of the freshwater Sparkill Creek and dwellings including some dating from c. 1700 with Tallman Mountain in the background.

4. along Hudson Terrace by the Community Center Park and from the Half Moon Park walkway down to Piermont Avenue, a view of the Piermont waterfront including the marinas provided with several benches and floral plantings.

5. along Piermont Pier and the North Shore Walkway are views both out to the river and towards the Tappan Zee Bridge and inland views to the Village upland areas to the northeast and Tallman State Park to southeast.

It is also important to note that the Village of Piermont lies within the Tappan Zee Scenic District, which extends from the New York- New Jersey border up to Hook Mountain. This district is in place to encourage included municipalities to protect, manage, and enhance the scenic and historic qualities present.

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[i] **All of the sites provided are listed on the NRHP, but some of the properties were designated as "non-contributing" during the application process for the Rockland Road Bridge Historic District. These locations are noted with a "*" to designate that although they are listed, they are not necessarily historically relevant.**

3.6 Transportation

Key Takeaways

- **Piermont has an influx of traffic (bicyclists, pedestrians, and vehicles) on weekends, in the summer and during special events. Weekdays are typically not a problem.**
- **The Old Erie Path trail provides off-road bicycle and pedestrian access to adjacent communities in Rockland County and appears under-utilized.**
- **There is limited wayfinding within the Village for visitors to find parking, parks, access to the Old Erie Path, and information about the central business area. Congestion could be relieved by better visitor management through improved wayfinding.**
- **Sea level rise is anticipated to inundate low-lying roads in the future and will require decisions to be made regarding elevating or otherwise floodproofing the transportation system to make it more resilient.**
- **Transit access is limited, both within Piermont and connecting to other communities.**

3.6.1 Tactical Complete Streets Plan Summary

The *Tactical Complete Streets Plan* was created to advance Complete Streets initiatives in the Village. As part of the planning process, demonstration projects were implemented that addressed intersection safety, placemaking, and traffic calming. Pilot locations were identified for Ash Street and Piermont Avenue Intersection Upgrades, Ohio Street, Gair Street, and Piermont Avenue Intersection Upgrades, and Pedestrian Plazas at Village Hall and Ash Street Plaza. Since the pilot project, the Checkers Park was installed.

The Plan notes that the Village of Piermont adopted a Complete Streets Policy in 2019 that included the following statements:

- *This policy commits the Village to viewing all transportation improvements as opportunities to improve safety, access, and mobility to all travelers in the Village in the effort to make walking and cycling a viable alternative to driving.*

- *This policy commits the Village to ensuring the needs of all users [are] incorporated into all planning, design, approval and implementation processes for any construction or renovations of streets.*

The Plan recommends a number of Complete Streets tactics including installing additional bike racks on Piermont Avenue, considering adjusting Piermont Avenue traffic flow and adjusting parking on weekends to allow for bicycle traffic. The Plan also recommends redesigning the following intersections: Piermont Avenue and Ash Street; Piermont Avenue, Gair Street, Ohio Street, and Tate Avenue; Ash Street and Hudson Terrace; and Ash Street, Tate Avenue and Kinney Street. At the existing intersection of Piermont Avenue with Tate Avenue, Ohio Street, and Gair Street, the Plan recommends that Ohio Street be closed, and a pedestrian plaza be created. At the intersection of Ash Street and Hudson Terrace, the Plan recommends that Ash Street be extended, and the hairpin turn be removed. Access to the Old Erie Path is discussed for the Ash Street/Hudson Terrace intersection as well as other parts of Ash Street, Tate Avenue, and Kinney Street. Other recommendations include creating a wayfinding signage plan and automobile parking regulations, which include adding metered parking on Piermont Avenue between Ash Street and Tate Avenue and changing on-street parking to reverse angle parking on Piermont Avenue directly adjacent to Gair Street.

3.6.2 Existing Conditions

Functional Classification

Functional classification is defined by the New York State Department of Transportation (NYSDOT) as:

the process by which roads, streets, and highways are grouped into classes according to the character of service they provide.

There are seven functional classifications including Principal Arterial – Interstate, Principal Arterial – Other Freeway/Expressway, Principal Arterial – Other, Minor Arterial, Major Collector, Minor Collector, and Local. These classifications:

…describe the importance of a particular road or network of roads to the overall system…Functional classification is also used to determine which roads are eligible for project funding under the Surface Transportation Program (STP) administered by the Federal Highway Administration.[1]

The NYSDOT provides an online functional classification map viewer that shows functional classification of the seven categories of roads within New York State.[2] The following are the Village of Piermont's functional classification categories:

- Urban Minor Arterial: Valentine Avenue (NY 340), Highland Avenue, Main Street, Orangeburg Road, Hickey Street
- Urban Major Collector: Piermont Avenue, Ferdon Avenue, Tweed Boulevard, Kings Highway
- Urban Principal Arterial - Other: Route 9W
- Local: All other roads within the Village

Route 9W is also classified as a Mainline on the National Highway System. These classifications are shown on the Transportation Map X.

Traffic Volumes

As noted in Section 3.2 of this Plan, the majority of Piermont residents drive to work. The Village of Piermont undertook daily traffic counts from mid-December to late May 2023. One count location included South Piermont Avenue where the speed limit is 25 mph. This count effort identified a day in March as having the highest daily volume – 3,060 total vehicles, and a day in late May having the lowest daily volume – 652 total vehicles. During the entire count time period, the counter recorded just under 247,000 total vehicle trips with an average daily count of 1,551 trips.

The NYSDOT provides traffic data through their online Traffic Data Viewer.[3] The Viewer provides several data points including Average Annual Daily Traffic (AADT), vehicle volume, classification and speed data, truck counts, and count locations. Data from the Traffic Data Viewer for road

[1] https://www.dot.ny.gov/gisapps/functional-class-maps
[2] https://gis.dot.ny.gov/html5viewer/?viewer=FC
[3] https://www.dot.ny.gov/tdv

segment average speed (where available) and AADT within the Village of Piermont are detailed in the chart below.

Most Recent NYSDOT Village Traffic Counts and Speeds

Location	AADT	Average Speed (mph)	Date	Data Source
Stevenson Street from Piermont Avenue to Dead	84	-	2019	NYSDOT
Piermont Avenue from Village Line N to Ritie Street	1,747	-	2016	NYSDOT
Piermont Avenue from Ritie Street to Ferdon Avenue (southbound)	1,007	-	2019	NYSDOT
Piermont Avenue from Ritie Street to Ferdon Avenue	1,976	23	2019	NYSDOT
Piermont Avenue from Ferdon Avenue to Rockland Road (westbound)	1,483	-	2018	NYSDOT
Piermont Avenue from Ferdon Avenue to Rockland Road	1,669	-	2019 (Estimate)	NYSDOT
Ferdon Avenue from Piermont Avenue to Village Line	3,101	-	2019 (Estimate)	NYSDOT
US9W from Route 340 Spur Irvington to Rt 187 Under	8,571	-	2016	NYSDOT
US9W from Route 340 Spur Irvington to Rt 187 Under	16,482	39	2019	NYSDOT
Rockland Road from Piermont Avenue to Ferdon Avenue	761	-	2019	NYSDOT
Piermont Avenue from Rockland Road to NY 340	1,787	26	2019	NYSDOT

Source: NYSDOT

Crash Data Analysis

An analysis of crashes along roads within the Village was undertaken utilizing CLEAR data provided through a request made to the New York State Department of Transportation (NYSDOT) in the summer of 2023. The data query covers January 1, 2020, through December 31, 2022, and only crashes recorded as taking place in the Village of Piermont were analyzed. The analysis identified 134 total reported crashes, 5 with a bicycle and 1 with a pedestrian. The details follow below:

Collision Type	Count of Collision Type
REAR END	45
OTHER	34
OVERTAKING	19
RIGHT ANGLE	16
LEFT TURN (AGAINST OTHER CAR)	9
SIDESWIPE	4
LEFT TURN (WITH OTHER CAR)	2
UNKNOWN	2
HEAD ON	2
RIGHT TURN (AGAINST OTHER CAR)	1
Grand Total	**134**

Crash Severity	Count of Crash Severity
PROPERTY DAMAGE	113
INJURY	21
Grand Total	**134**

Crash Type	Count of Crash Type
COLLISION WITH MOTOR VEHICLE	110
COLLISION WITH BICYCLIST	5
COLLISION WITH ANIMAL	5
COLLISION WITH DEER	4
COLLISION WITH BUILDING/WALL	3
COLLISION WITH TREE	2
COLL. W/LIGHT SUPPORT/UTILITY POLE	2
COLLISION WITH PEDESTRIAN	1
COLLISION WITH FENCE	1
COLLISION WITH GUIDE RAIL	1
Grand Total	**134**

Crash Type - Collision with bicyclist

Location	Light Conditions	Traffic Control	Fatality/ Injury	Contributing Factors (vehicle)	Direction of Vehicle Travel	Year
Ferdon Ave near Rockland Road	Daylight	None	None	Failure to Yield right of way	West	2020
Route 9W near Broadway	Daylight	Stop Sign	Injury (Serious)	Failure to Yield right of way	North	2021

Paradise Avenue near Ferdon Ave	Daylight	Traffic Signal	Injury	None	Northwest	2021
Route 9W near Hickey St	Daylight	Traffic Signal	Injury	None	Southeast	2021
Piermont Ave. near Gair St.	Daylight	None	Injury	Driver Inattention	West	2022

Crash Type – Collision with Pedestrian

Location	Light Conditions	Traffic Control	Fatality/ Injury	Contributing Factors (vehicle)	Direction of Vehicle Travel	Year
Route 9W near Broadway	Dark – Road Lighted	None	Injury	View obstructed/ limited	North	2021

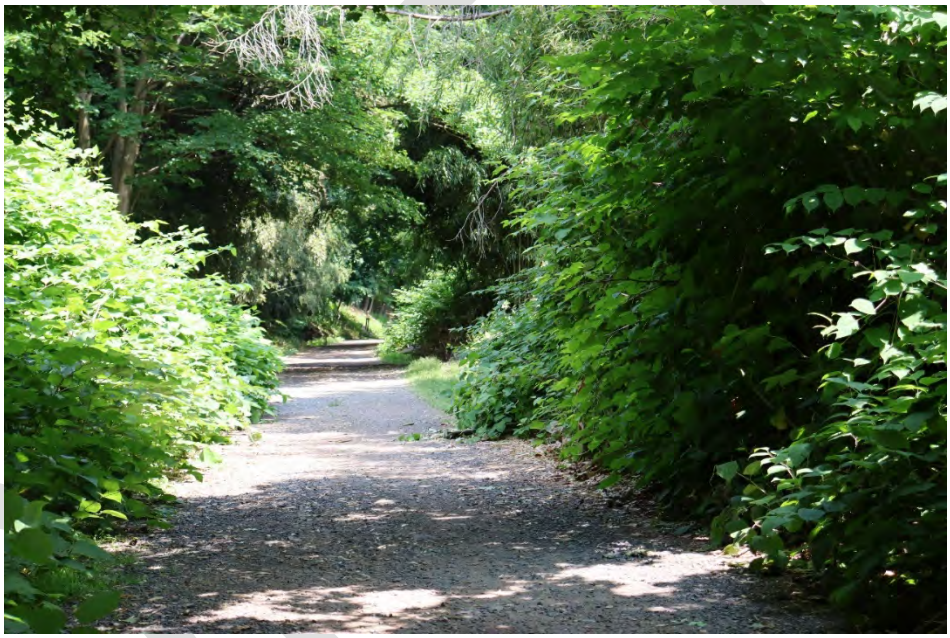
Pedestrian Infrastructure

Sidewalks are located throughout the Village though not on all property frontages. Sidewalks are generally narrow (4 feet) with cobblestone curbs, although they are wider between 12-18 feet in the core shopping and dining area. Sidewalks are not continuous along the river side of Piermont Avenue to destinations like Pier 701. There is a sidewalk connection from Parking Lot D to Piermont Avenue, along only one side of Gair Road, but no sidewalk connections to shopping along the eastern leg of Roundhouse Road, closest to Lot D. Sidewalks are lacking along Pier Road/Ferry Road from Paradise Avenue to Gair St. Crosswalks are found at major intersections but are not always present in pedestrian destinations such as from the River Lot (Firehouse) across Piermont Avenue. The sidewalk infrastructure in some locations is overgrown with bushes and shrubs that have not been cut back, thereby narrowing the effective walkway width, and preventing full use and accessibility to some segments of the sidewalk system in the Village.

Existing Sidewalk Conditions – Note the narrow width in one location and encroachment in another.

The Old Erie Path, a rail trail along an alignment of the former Northern Railroad of New Jersey line, traverses the Village as an unpaved (dirt and gravel) path that connects to the Joseph B. Clarke Rail Trail south of the Village and the Raymond G. Esposito Memorial Trail north of the

Village. The Old Erie Path was dedicated as a park in the Village in 1975. The 3-mile Old Erie Path goes through the woods above the Sparkill Creek, passes the 1873 railroad station/Piermont Historical Society museum, and continues through forested land between existing residential homes to Grand View-on-Hudson. Along the trail, there are opportunities to take in views of the Hudson River Valley.[4] Properties above and below the Old Erie Path have access to the trail via staircases in some cases and there is a parking area past the station for property access. An existing residential property approximately 100' north of the station also has vehicular access utilizing the path. A shortcut on Tate Avenue (part of the Long Path) takes you to the crosswalk at Ash Street in front of the station. In South Nyack, the trail becomes the Raymond G. Esposito Trail, ending at Franklin Street Park. In Sparkill, the Old Erie Path meets the 4.3-mile Joseph B. Clarke Rail Trail at Depot Square which connects southwest to Tappan and northwest to Blauvelt.[5]



Old Erie Path north of the Piermont Railroad Station

In the Village, the Long Path (connecting New York City at the West 175th Street subway station near the George Washington Bridge to the Adirondack State Park in Northville, NY) passes Kane Park after leaving Tallman Mountain State Park, follows Ferdon Avenue to Piermont Avenue, goes up Tate Avenue and onto an off-street connection to the Old Erie Path at Ash Street across the street from the Station, then follows Ash Street to Piermont Place, and then proceeds to Crescent Road, and on 9W for a short distance before turning onto Castle Road and connecting to Clausland Mountain Park in the Town of Orangetown.[6]

[4] https://www.traillink.com/trail/old-erie-path/
[5] https://www.traillink.com/trail/old-erie-path/
[6] https://www.nynjtc.org/book/2-nynj-state-line-nyack

Long Path connection (along fence) from Tate Avenue (in the background) to the Old Erie Path

Ferry Road is located along the southern side of the mile-long pier which was built into the Hudson River in 1838 by the New York & Erie Railroad. Access to the pier via Ferry Road is closed to cars on Sunday. Ferry Road is a popular destination for walking, bicycling, fishing, and passive recreation along the shore of the Hudson River.

Ferry Road just west of Art Rittenberg Field

The North Shore Walkway extends from Parelli Park adjacent to the River Lot, along the north side of the pier to Ferry Road where the pier narrows. It is a popular pedestrian route providing access to the north side of the pier immediately adjacent to the Hudson River. According to signage on the North Shore Walkway, bicycles, skateboarding, rollerblades are prohibited, and it is open from 8:00 AM to 5:30 PM. Map # shows the park, recreation, and greenway opportunities in the Village.

North Shore Walkway

Bicycle Infrastructure

The Village is a frequent cycling destination for cyclists heading north out of New York City to Rockland County and beyond. The Village of Piermont's bicycle infrastructure includes State Bicycle Route #9 which utilizes Piermont Avenue/Ferdon Avenue for bicycle travel. This segment is part of a much larger 345-mile signed, on-road State Bicycle Route that connects New York City to Rouses Point, NY.[7] It then connects to the Velo, Quebec bicycling routes in Canada. It also connects with the New York City bicycle network and State Bicycle Routes 5, 11, 17, and the NYS Empire State Trail which is a 345 mile mostly off-road trail from New York City to Buffalo.[8] The *Hudson Valley River Greenway Trail Connections Plan* from 2020 notes that NYS Bike Route #9 is difficult and geared toward experienced cyclists and recommends improving signage, adding paved shoulders, bike lanes, and bike parking for the route.[9] The State bicycling routes can be viewed on the NYSDOT *NYS Bike Routes Viewer.*[10] The Old Erie Path described above, while not a dedicated bicycle facility, is an off-road path utilized and available to cyclists. The Old Erie Path is unpaved and rough, and because of this hybrid or mountain bikes are recommended; however, road bikers do use the connection.

Also, a bicycle repair station is located in the Village at the Piermont Bicycle Connection shop, and bike racks are available throughout the Village.

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7 https://www.dot.ny.gov/portal/pls/portal/MEXIS_APP.DYN_BIKE_TRAIL_DETAIL_MAIN.show?p_arg_names=p_trail_id&p_arg_values=145#:~:text=State%20Bicycle%20Route%209%20is%20a%20signed%20on-road,Quebec%20cycling%20routes%20in%20Quebec%20and%20eastern%20Canada.

8 https://www.dot.ny.gov/portal/pls/portal/MEXIS_APP.DYN_BIKE_TRAIL_DETAIL_MAIN.show?p_arg_names=p_trail_id&p_arg_values=145#:~:text=State%20Bicycle%20Route%209%20is%20a%20signed%20on-road,Quebec%20cycling%20routes%20in%20Quebec%20and%20eastern%20Canada.

9 https://hudsongreenway.ny.gov/system/files/documents/2018/06/closing-gaps-report-web-part-7_0.pdf

10 https://gisportalny.dot.ny.gov/portalny/apps/webappviewer/index.html?id=e1f0619b174740fabdcd13667888b1ed

Cyclists on Piermont Avenue (and bike racks)

Because the Village is so hilly, cyclists typically use the low-lying areas including Piermont Avenue and Ferdon Avenue. This area is known as the Piermont Trail on the Hudson Valley Greenway network. During a Site Visit in June, it was observed that most cyclists are following the Piermont Trail rather than using the Old Erie Path. The cycling route in the Village follows State Bike Route #9 and shows connections along Paradise Avenue, Ferry Road, and to the Old Erie Path with access via Tate Avenue, First Street, and Upper Ritie Street.[11]

Common cycling routes to/from the Village include connections to the multiuse trail on the Governor Mario M. Cuomo Bridge (formerly the Tappan Zee Bridge), the trails described above, and connections to parks along the Hudson River including Bear Mountain State Park and Tallman Mountain State Park along the Greenway Trail.[12] Piermont is a frequent destination for NYC residents who travel over the George Washington Bridge to ride along the Hudson River and for nearby New Jersey residents. Numerous cycling websites provide suggested routes for shorter and longer rides to and through Piermont.[13] The Gran Fondo World Championship New York City also travels through Piermont yearly.[14]

Some cyclists were observed disobeying traffic laws and riding at speeds faster than vehicles during the June Site Visit. Bicyclists must follow Section 1231 of the NY Vehicle and Traffic Law and ride on a safe shoulder or 3-4 feet from parked cars or the curb.[15] Because lanes in Piermont are narrow (and the overall curb-to-curb distance on Piermont Avenue ranges from

[11] https://rocklandgov.com/files/4416/0035/4368/HRGT_Piermont.pdf and
https://rocklandgov.com/files/4313/6309/7103/Riverfront_Trails_Map_1_PIP_to_South_Nyack.pdf
[12] https://rocklandgov.com/files/2116/0035/7132/GreenwayTrails_letter.pdf
[13] https://www.komoot.com/guide/2204549/cycling-around-piermont
https://www.northjersey.com/story/sports/recreation/2016/05/05/cycling-touring-piermont-ny/94686612/
https://www.bikemap.net/en/l/5131248/
https://ridewithgps.com/routes/27495934
https://ridewithgps.com/routes/6499499?lang=en
https://ridewithgps.com/routes/37929865?lang=en
[14] https://nyc.gfny.com/
[15] https://www.dot.ny.gov/display/programs/bicycle/faq

approximately 25 to 29 feet), this means that cyclists are often riding in the middle of the travel lane.

Cyclists on Piermont Avenue and along the Old Erie Path (at right)

Transit Service

Public transit is available through Transport of Rockland (TOR) which offers 10 routes in Rockland County (these routes are located outside the Village of Piermont).[16] The Transportation Resources Intra-County for Physically Handicapped and Senior Citizens (T.R.I.P.S), operated by Rockland County, offers ADA service (provided the requested ride is within ¾ mile of a fixed-route bus route) or regular service for those who are unable to use the fixed route service.[17] These services require an application to be made to T.R.I.P.S.

Rockland Coaches by Coaches USA provides service from Piermont Avenue and Ash Street to Rockland County destinations including the Route 304 Park & Ride in New City, Sparkill, Tappan, Palisades, Nyack, Upper Nyack, Congers, and Valley Cottage. Details can be found on the Coaches USA website and depends on the stop location. Buses depart the Village four to six times in the morning, depending on the location, and return four times in the evening.[18] There is also service to the GW Bridge Bus Station in New York City via Route 9W with stops Sparkill, Tappan, Palisades in New York and Alpine, Tenafly, Englewood Cliffs, Coytesville, Linwood Park, and Fort Lee in New Jersey which leaves Piermont Avenue and Tate Avenue at 6:48 AM and 7:48 AM and returns at 5:15 PM and 6:15 PM Monday – Friday .[19] Another nearby bus system includes the Hudson Link which has three stops in the Nyack area (Central Nyack, Downtown Nyack, and South Nyack) with service to Palisades Center, White Plains, and the Tarrytown Train Station.[20] The New Jersey Transit system is available at Pearl River on the Pascack Valley Line.[21]

[16] http://rocklandgov.com/departments/public-transportation/transport-of-rockland/
[17] http://rocklandgov.com/departments/public-transportation/trips-paratransit/
[18] https://www.coachusa.com/?partner_code=CUSA
[19] https://www.coachusa.com/?partner_code=CUSA
[20] https://ridehudsonlink.com/
[21] https://content.njtransit.com/sites/default/files/pdfs/maps/NJT%20System%20Map%20April%202023.pdf

Nearby airports include White Plains Westchester Airport (HPN), John F. Kennedy International Airport (JFK), LaGuardia Airport (LGA), Newark International Airport (EWR), and New York Stewart International Airport (SWF).

Water-based Transportation

The Hudson River Sloop Clearwater lists Ferry Road as a dock location.[22] The Village of Piermont LWRP discusses the potential for ferry service between lower Hudson communities and summer weekend cruises as an opportunity. The Parelli Park Boat Launch offers a kayak and canoe car-top launch and is designated on the Hudson River Greenway Water Trail.

Transportation Infrastructure Resiliency

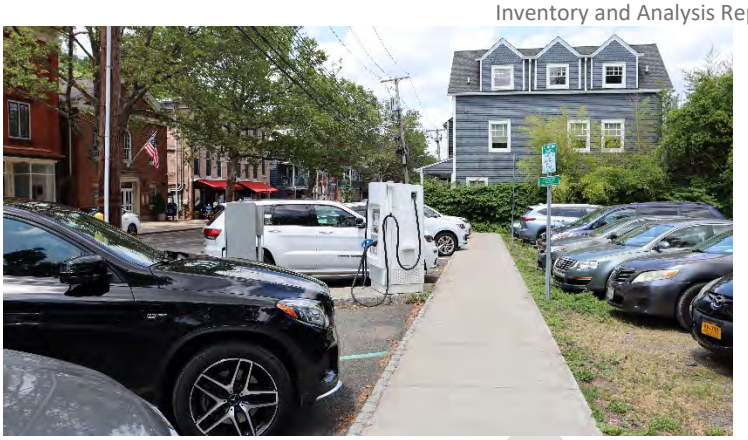
As discussed in the *Resilience Roadmap: Planning for Piermont's Future* (September 2014), developed by the Piermont Waterfront Resilience Task Force, low-lying roadways will need to be elevated due to sea level rise. Hardening the transportation system to make it more resilient is particularly important for Piermont Avenue and Ferdon Avenue by the year 2100, though inundation can also be seen by 2050. The Sea Level Rise projections map X and Floodplain map X show areas expected to be subject to periodic flooding during higher tides of each month during new and full moon phases, as well as during storm events.

Parking

The Village of Piermont has numerous off-street parking spaces available for public parking, though parking has been noted as being inadequate to serve needs during peak tourism months and during events. With cars prohibited from driving on Ferry Road on Sundays, there is no parking availability along Ferry Road or at the end of the pier on this busy day. On weekends, during festivals and during the Farmer's Market, for instance, finding a parking space can be challenging.

River Lot (Firehouse)

[22] https://www.clearwater.org/come-sailing/dock-directions/piermont/



EV Charging Station on Piermont Avenue

An EV charging station is available on a lot off Piermont Avenue (near the intersection of Gair Street). Other area EV charging stations can be found outside of the Village and viewed on the *NYSERDA Electric Vehicle Station Locator*.[23]

Off Street Parking

The Village offers free off-street parking to the public as well as fee-based permit parking for residents, in the following locations shown in the table below and on map X:

Village of Piermont Off-street Public & Resident Permit Parking

Location	Total Number of Parking Spaces	Number of Spaces Sold to Permit Holders	Net Parking Spaces Available Free to Public	Address
Bridge Street	5	2	3	Next to 393 Piermont Avenue
Rockpile	12	12	0	Across from 599 Piermont Avenue
Minehole	15	15	0	Close to 213 Piermont Avenue
First Street	7	7	0	Close to 16 First Street
Community Center	32	31	1	204 Hudson Terrace
River Lot (Firehouse)	70	31	39	Adjacent to Parrelli Park/Hudson Way
Lot D (privately owned by Phil Griffin)	100	29	71	Close to 128 Gair Street
TOTAL	**241**	**127**	**114**	

Source: Village of Piermont Clerk's Office

On Street Parking

On-street parking in the core dining and shopping areas was evaluated using Google aerial and street view imagery, and confirmed by site visit observations. Some on-street parking spaces in the Village are marked while others are not. For those parking spaces not marked, a parking space calculation was made utilizing parking spaces of 18' feet in length. Measurements of unmarked

[23] https://www.nyserda.ny.gov/All-Programs/Drive-Clean-Rebate-For-Electric-Cars-Program/Charging-Options/Electric-Vehicle-Station-Locator#/find/nearest

parallel parking spaces was undertaken during site visits. Parking space counts include spaces used by bicycle racks or where temporarily marked as no-parking through cones or signage.

Village of Piermont Estimate of On-Street Parking in the Core Area

Location	Number of Spaces	Notes
Flywheel Park Area – Ash Street	6	Marked spaces between bump-outs
Flywheel Park Area – Hudson Way/ Beach Street	15	Marked spaces
Flywheel Park Area – Chiggelzby Avenue	5	In front of the library, one space marked in front of the library entrance is marked off with cones.
Flywheel Park Area - Roundhouse Road south of Shad Row to Spruce Street	8	Marked spaces
Roundhouse Road (below Spruce Street to Gair Street on east side of parking lot)	15	5 spaces on westside and 11 reserved spaces
Shad Row (east of Flywheel Park – near the View on the Hudson)	9	Not marked, calculated by measuring 98 feet' for 5 spaces to intersection of Roundhouse Road near the View on the Hudson and around the driveways/garages - 4 spaces
Shad Row (parallel to Gair Street)	4	Marked spaces
Spruce Street (between Roundhouse Road west and east)	10	Not marked, calculated by measuring at 194', excluding hatched areas
Piermont Avenue – North of Hudson Way	15	Marked spaces on east side of Piermont Avenue
Piermont Avenue – Between Hudson Way and Ash Street	10	Marked spaces on west side of Piermont Avenue
Piermont Avenue – Ash Street to Tate Avenue	54	11 parallel marked spaces on east side, 16 angled front-in marked spaces, 5 marked perpendicular front-in spaces, 1 unmarked parallel space, 21 on west side including 1 mobility impaired reserved space and 1 parking space used as bicycle parking.
Paper Street	15	7+ parallel marked spaces (+ = motorcycle space), 8 front-in parking spaces
TOTAL	**166**	

Source: Site Visit Observations, Aerial Imagery, and Google Street View

Beyond on-street parking, illegal on-street parking has been identified as an issue on roads in the Village. This includes issues along Hudson Terrace and illegal parking blocking the travel lane on Piermont Avenue - despite the moderate vehicular and bicycle traffic observed during the Site Visit.

Parking Regulations

The Village Code Article III regulates parking, standing, and stopping in the Village of Piermont.[24] Additionally, Article VIII Sections 190-38 (No Parking Any Time), 190-39 (Time Limit Parking), 190-39.1, 190-30.2, 190-30.3, 190-40.1 and 190-40.2 regulate specific elements of parking or use of roads within the Village.[25] Off-street parking is regulated in Section 210-68 of the Zoning code and exceptions to off-street parking requirements in the Business B Zoning District are found in Section 210-68.1. Off-site parking is permitted and there is also a fee-in-lieu-of- parking provision in addition.[26] It has been noted during site visits that on-street parallel parking often occurs near corners, limiting sight distances for drivers nosing out and moving into intersections after stopping at stop signs. Further regulations of parking near corners, with the installation of additional "No Parking Here to Corner" signs, should be considered.

Downtown Parking Demand Survey

As discussed in Chapter 3.3, Land Use, Zoning and Codes Inventory & Analysis, the Village has fee-in-lieu-of-parking provisions ("FILOP") for restaurants, businesses, or commercial establishments for up to 3 spaces, or more than 3 FILOP by special permit (see Section 210-68.1.D.5 and 210-88.1.D.6). Below in Table #, the Village Building Inspector has provided information on parking demand for downtown businesses and apartments above those businesses. The 2023 business parking demand is 359 spaces. As noted above, there are 407 public parking spaces available including both on-street and off-street spaces (166 on-street spaces and 241 off-street spaces). The code specifies that the Building Inspector shall determine if off-street parking spaces is exhausted, that no new commercial establishment shall be entitled to FILOP spaces per Section 210-88.1.D.9. Based on the calculations below, the off-street parking spaces has been exhausted, which by the Village's current regulations, means that any new restaurant, business, or commercial establishment needs to provide the required number of parking spaces.

Also included in Table # is the number of apartments above downtown businesses (41 units). Parking for residents could be addressed through a parking demand management strategy. Many communities address the changes in parking demand throughout a 24-hour period by permitting shared parking and consider all uses to calculate parking demand, as different uses need parking at different time periods (weekdays, evenings, weekends). The Village in Section 210-69.1 does permit restaurants, retail, and service businesses to utilize off-site leased or rented off-street parking spaces within the Business B Zoning District or Central Business Multi-Use Districts within 250 feet of the premise.[27] Additional shared parking opportunities can be added through agreements with private parking lots to add additional capacity, especially for

[24] https://ecode360.com/9172723#9172723
[25] https://ecode360.com/9172764
[26] https://ecode360.com/9173762
[27] https://ecode360.com/9173762

events or for resident parking for example. However, the ability to do this in Piermont appears to be somewhat limited given the current parking demand and mix of uses.

Many downtown areas are increasingly eliminating minimum parking requirements[28] and instead moving to a demand-based system with management of on-street parking through a parking permit program and/or metering of spaces to encourage some turnover, especially in commercial areas.[29] According to Walk Score, the Village is considered somewhat walkable and somewhat bikeable.[30] Communities that invest in additional non-vehicular transportation options (walking, transit, and bicycling) typically see a decrease in parking demand.

Village of Piermont Parking Demand

Street Address	First Floor Use	Business Name	2010 Parking Survey Village of Piermont	2023 Estimated Total Parking Demand - Village of Piermont	Fee In Lieu of Parking Spaces Collected	Number of Apartments Located Above Businesses
455 Piermont Ave	Restaurant	Kapadokya	3	16	13	3
457 Piermont Ave	Restaurant	Reilly's	40	48	8	0
450 Piermont Ave	Commercial	Unoccupied	6	6	0	2
454 Piermont Ave	Commercial	Thrift Shop	4	4	0	2
456 Piermont Ave	Commercial	Ned Kelly/PIP	3	3	0	1
460 Piermont Ave	Retail	Bunbury's	4	9	5	1
466 Piermont Ave	Retail	Wild Lily	4	4	0	2
468 Piermont Ave	Restaurant	Turning Point/ Tequila Sal	40	40	0	4
474 Piermont Ave	Restaurant/Retail	District 96 /A&B	8	33	25	4
478 Piermont Ave	Government	Village Hall	42	42	0	0
482 Piermont Ave	Restaurant	Sidewalk Bistro	52	40	12	4
485 Piermont Ave	Restaurant	TWK Market	10	10	9	2
486 Piermont Ave	Retail	Abercorn	4	4	0	2
490 Piermont Ave	Commercial	Mani-Pedi	4	4	0	2
492 Piermont Ave	Commercial	Carber Travel	4	4	0	2
494 Piermont Ave	Retail	Ki Collection	4	4	0	2
495 Piermont Ave	Retail	Presence / Valentina	7	7	0	2
500 Piermont Ave	Retail	Piermont Fine Wines	4	4	0	2

[28] https://www.planning.org/planning/2022/spring/a-business-case-for-dropping-parking-minimums/
[29] https://www.lincolninst.edu/publications/articles/2022-10-shifting-gears-eliminating-off-street-parking-requirements#:~:text=In%20Buffalo%2C%20New%20York%2C%20which,the%20previous%20code%20had%20required.
[30] https://www.walkscore.com/score/piermont-ny

501 Piermont Ave	Restaurant	Ottos Full Service	22	40	0	0
506 Piermont Ave	Restaurant	Freelance / Sabu Sushi	29	29	3	2
Total			**302**	**359**	**75**	**41**

Source: Village of Piermont, Building Inspector

Wayfinding

There is no wayfinding provided in the downtown area indicating parking locations or for pedestrians to find their way. Signage for the parking lots themselves is minimal with the exception of clear signage provided at the entrance of Lot D.

Signage for Parking Lot D

It is apparent that visitors could more easily find other parking lots or other on-street parking spaces within walking distance of Piermont Avenue restaurants and downtown attractions, with improved wayfinding signage.

Image: U.S. Post Office in Piermont. Source: Nelson, Pope, and Voorhis 2023.

3.7 Community Services and Facilities

Key Takeaways

This section will be updated upon receipt of additional responses and information from Community Services and Facilities representatives/providers.

3.7.1. Existing Conditions

The Village of Piermont's residents, landowners, and businesses are well served by a comprehensive system of facilities and services provided by governmental and community agencies, employees, and volunteers who collectively add to the quality of life within the Village (**Map XX, Community Services and Facilities**). The Village strives to ensure that all residents are served adequately by programs and facilities considered necessities and essential services.

3.7.2. Village Hall

Piermont Village Hall is located at 478 Piermont Avenue. The structure houses the Police Department, Building Department, Clerk's Office, Justice Court, and the Office of the Mayor. Additionally, it hosts meeting space for the Village Board of Trustees, Planning Board, Zoning Board of Appeals (ZBA), and the Waterfront Resiliency Commission.

3.7.3. Village of Piermont Department of Public Works (DPW)

The Village of Piermont Department of Public Works (DPW) has a wide range of responsibilities which are all directed towards the maintenance of Village infrastructure and the delivery of Village services. The DPW consists of 7 full-time employees and the DPW facility is located at 300 Piermont Avenue, along with a storage yard on Ohio Street. The Department's duties include maintenance of vehicles, general street and road repairs, maintenance of sidewalks, garbage and trash collection, leaf removal, street sweeping, park maintenance, storm drain maintenance, building maintenance and snow plowing.[1] The DPW maintains all Village owned properties, comprised of seven buildings, five parking lots of various sizes, and twelve parks, including the 1.65-mile long Erie Path, the half-mile long North Shore Walkway, and the almost mile-long Piermont Pier.

Image: U.S. Post Office in Piermont. Source: Nelson, Pope, and Voorhis 2023

The Department of Public Works Superintendent, Tom Temple, was contacted on May 16, 2023, for information regarding the current state of the Department. Mr. Temple advised that current Department staffing is adequate. However, if the Village decides to take over the maintenance of the Piermont Landing roadways, and/or garbage collection for the Village of Grand View-on-Hudson, the DPW would need to increase its staff with possibly two more positions added.

[1] https://piermont-ny.gov/departments/public_works.php

Regarding the DPW facility, Mr. Temple indicated that currently, the facility on Piermont Avenue as well as the DPW's storage yard on Ohio Street are in flood zones, and that these facilities should be moved from flood zones to keep the department fully functioning during emergency events. It was revealed that the DPW building and the Ohio Street storage area were both impacted during Hurricane Sandy in 2012, as well as Hurricane Irene the previous year, with water occurring in the DPW building during both events. There are no current plans to move the DPW facility from the flood zone, but its current location in a flood-prone area creates an obvious issue.

Along with flooding issues pertaining to the DPW facilities, Mr. Temple also raised concern over the increase of stormwater runoff occurring from Tweed Boulevard downhill to State Route 9W, and eventually ending up in other drainage systems along the Erie Path. Due to this being a critical slope area of the Village, this becomes a hazard to Village residents and their properties during heavy rain events. Mr. Temple suggested that any future construction of the areas along State Route 9W and along Tweed Boulevard should be heavily scrutinized and over engineered for stormwater containment and any potential impact on the downhill properties.

Mr. Temple was also asked about recently planned or completed improvements to Village facilities. He noted that the Community Center recently had a new roof and gutters installed, with plans underway to replace the front doors. Additionally, the Village is currently in the planning stages to upgrade the playground at the Community Center, as well as to redesign the walking path through the adjacent Half Moon Park.

3.7.4. Village of Piermont Police Department

The Piermont Police Department was founded in October 1852 and is currently located within Piermont's Village Hall at 478 Piermont Avenue.[2] In addition to patrol, detective work, commercial vehicle enforcement, and fingerprinting, the Department fosters their partnership with the community by reaching out to serve in other ways through additional programs and services, such as:[3]

- Crime Prevention/Fire Safety Programs
- Neighborhood Watch
- Piermont PAL (Police Athletic League) Program
- Hope not Handcuffs – Hudson Valley
- Representation on numerous advisory boards, panels, and committees

Furthermore, the Village of Piermont Police Department is contracted to provide police servicing to the Village of Grand View-on-Hudson, which borders Piermont immediately to the north. The

[2] https://www.piermont-ny.com/police/index.html
[3] https://piermont-ny.gov/departments/police_department.php

Department currently consists of eight (8) full-time staff members, including five (5) patrol officers, the Chief, Lieutenant, and a Detective. Additionally, five (5) part-time officers also support the Department.

Chief James Hurley of the Police Department was contacted on May 15, 2023, for information regarding the current condition of the Department, as well as any potential concerns the Department may have for the future. Mr. Hurley informed that the Department's eight (8) full-time staff members and five (5) part-time staff members is currently adequate to serve the Village. The Chief also informed that the typical maximum response time for calls to the Police Department anywhere in the Village, as well as in the Village of Grand View-on-Hudson, is three (3) to four (4) minutes. Additionally, Chief Hurley noted that overall, the Police Department facilities could certainly benefit from an upgrade. The existing facilities, which share the Village Hall building with all the other Village Departments that operate there, currently lie in a flood-prone area. Further, the Chief discussed the fact that because the Police Department's only holding cell is located in the main lobby area of Village Hall, a security issue presents itself in this area. Similarly, the existing Village Hall does not have ample room for the Police Department staff, or ample storage room required for the Department. The biggest concerns raised by Chief Hurley were the current state of the Village's municipal buildings and their location in flood-prone areas, and parking within the Village. The Chief stated that the Police Department is not concerned about any particular proposed or new development within the Village, however, he mentioned that additional businesses or commercial uses locating within the Village may cause the Department to utilize more patrol officers on busy weekend days when visitors from the surrounding region travel to Piermont for shopping, leisure, and recreational activities, in order to sustain community safety.

3.7.5. Piermont Fire Department + EMS

The first organized fire company in Piermont was formed by the employees of the New York and Erie Railroad in about 1832. The first rules for the fire department were set up on October 7, 1851, marking the organization of Empire Hose Company Number 1 which operates today, and some rules are the same ones that still govern the fire company to this day. The first Village owned firehouse was built in 1853 at a cost of $700.00. Reservoirs were built in the Village in 1854 and remained in use until 1901 when water mains were installed. A lot was purchased by the Village in 1870 and a firehouse was erected at a cost of $2,000.00. The Piermont Fire Department Underwater Rescue team was organized on March 11, 1956.[4]

Today, the Piermont Fire Department maintains two (2) facilities: the Empire Hose company Number 1, which is the Department's primary firehouse, located along Piermont Avenue at its

[4] https://piermontfd13.com/history/

intersection with Hudson Way; and the Bud Sedlack Fire & Rescue Boathouse located at the end of the Piermont Pier.

Nathan Mitchell, who serves as Director of the Fire Department and Village liaison to the Fire Department due to his position on the Village Board of Trustees, as well as the Comprehensive Plan Committee Chair, was contacted on May 16, 2023, for information about the Fire Department. Additionally, Larry Cabrera (Chief), Reece McNichol (1st Assistant Chief), and Daniel Goswick (2nd Assistant Chief) were also

Image:Piermont Fire Department/Empire Hose Company Number 1. Source: Nelson, Pope, and Voorhis 2023.

contacted for their input as part of this effort. Particularly, information was sought regarding Department staffing, the potential need to expand, renovate, or modify Department facilities, the potential impact to the Department of recently proposed, approved, or constructed development projects including roads, and the impact of Hurricane Sandy and/or any subsequent flooding events on the Department and its facilities.

An initial response was received from Mr. Mitchell, who identified some of the most challenging issues facing the Department today and potentially impacting the Department in the future. A major concern identified for the all-volunteer Department was staffing. Unfortunately, high median home values resulting from development over the last couple decades being geared toward high-income, luxury condominiums and renovation/expansion of existing single-family homes have made it more difficult for new families and young people returning from college or trade school to locate in the Village. This cohort of younger individuals tends to have much higher rates of participation in volunteer emergency services than the population overall, especially more so than the post-retirement cohort, which the Village has seen a recent influx of over the past several decades. Currently, a significant portion of Fire Department staff members live outside of the Village in many cases due to these issues with the affordability of housing within the Village.

Regarding the Department's facilities, Mr. Mitchell advised that the Firehouse, located on Piermont Avenue and which also houses the Department's ambulance, is undersized and located in an area that is at risk of flood inundation. Additionally, ingress and egress are only available from Piermont Avenue, which becomes impassable at a certain flood elevation and can result in the prevention of response of the Department's apparatus. Further, the Department's service area includes a number of properties that are not accessible by roadways during flood events.

Along with these considerations, this section will be updated upon receipt of a response from the Department Chief and Assistant Chiefs, pending their addition of further concerns relating to the Fire Department (See Attachment A, Questions Asked to Community Service Providers).

3.7.6. Piermont Public Library

In 1896, The Free Library of the Piermont Improvement Association registered with the University of the State of New York, marking the beginning of what is today the Dennis P. McHugh Piermont Public Library. The Library had no permanent home for a few years until 1909 when it opened in a Greek Revival home on Hudson Terrace. A 1910 letter reported that the library "is now a permanent library having nearly 4,000 volumes with a circulation of 6,000 annually." The library is now legally chartered as the Piermont Library District, allowing the Library Board to go directly to the voters for budget approval.[5]

In March 2007, the then-new and current home for the library opened as the Dennis P. McHugh Piermont Public Library at 25 Flywheel Park West, adjacent to Flywheel Park in the Village. Named after nearby Sparkill resident and New York City Firefighter Dennis McHugh, who tragically lost his life during the September 11th terrorist attacks on the World Trade Center, the Dennis P. McHugh Foundation was established by his friends and family to honor Mr. McHugh and to ensure that his legacy lives on. The Foundation made a $500,000 contribution toward the construction of the library.[6] The library building is fully handicapped accessible. There are several parking spaces designated for handicap parking and a ramp provides wheelchair access to the building. All public spaces of the library, including restrooms, are accessible to wheelchairs as well.[7]

As of May 2023, the Library currently issues 1,252 library cards to Village of Piermont residents and contains 12,067 physical items within its collections, not including digital materials. Library cards provide access to the library's collection of books, periodicals, DVDs, books on CD, music CDs, and special collections, as well as eBooks, digital audiobooks, streaming movies, downloadable and streaming music, digital databases, and eReaders. The Library is part of the Library Association of Rockland Couty, as well as the larger Ramapo Catskill Library System, and does see visitors from surrounding communities. Cardholders may use their Dennis P. McHugh Piermont Public Library card at all 47 libraries within the Ramapo Catskill Library System, or request materials from these libraries through interlibrary loan. Furthermore, any person residing within the Piermont Library District who is unable to come to the library because of limited mobility, illness, or handicap is eligible to have materials delivered by mail at no charge

[5] https://www.piermontlibrary.org/about-us/
[6] https://www.piermontlibrary.org/about-us/
[7] https://www.piermontlibrary.org/about-us/

through the Library's Materials-By-Mail for the Homebound service.[8] Curbside pickup is also available.

Additional services available to Library cardholders are: Mango Languages (an online language learning tool); Tutor.com (providing 1 on 1, on-demand tutoring, test prep, and learning support from Kindergarten through college to careers beyond, available to library card holders within the South Orangetown Central School District); desktop computers available for use; free public Wi-Fi; Book-a-Librarian service; photocopying, printing, faxing, and scanning to USB; a charging station for electronic devices; art display space for monthly exhibits by local artists and library art students; museum passes; several services for seniors including a large print collection; and more.

Approved in 2020, the Dennis P. McHugh Piermont Public Library Strategic Plan offers a Vision Statement which was set to be accomplished in three-to-five years after 2020:

> "*Within the next three to five years, grow the Piermont Library District (PLD) into the local cultural center of choice for knowledge, learning and resources, providing access to print and other media, adult and child programming, and art, music and literary experiences to local Piermont residents and neighbors. As a source of reliable information promoting personal enrichment and an enlightened citizenship, PLD seeks to expand its footprint through an annual well-managed budget, one-time grants and a capital planning initiative*."[9]

The Strategic Plan offers the following goals outlined in **Table 3.7-1** below, accompanied by specific objectives and action items to realize the Vision Statement over this three-to-five-year period.

[8] https://www.piermontlibrary.org/services/
[9] http://www.piermontlibrary.org/wp-content/uploads/2022/01/Strategic-Plan_Approved-2020.pdf

Table 3.7-1. 2020 Dennis P. McHugh Piermont Public Library Strategic Plan Goals

Key Area	Goal
Programming	1. To provide programming that meets the changing and varied needs of all demographics of our community.
Collections	1. To create and maintain a local history collection that reflects Piermont's rich history. 2. Maintain collection for currency and relevance based on the needs of the community.
Building & Grounds	1. Reimagining library space for maximum effectiveness. 2. Maintain and update existing building for aesthetics and safety needs of the community. 3. Expansion for Community Space.
Staff Development	1. Staff Retention for optimum continuity. 2. Staff training and education for professional growth.
Technology	1. Design and update a technology plan. 2. Staying on top of technology trends in order to provide digital education and opportunities to the community.
Community Involvement	1. Forge connections with local schools, community organizations and businesses. 2. Expanding opportunities for volunteer involvement in the library.
Policy	1. To update the Policy Manual for staff and trustees. 2. To establish protocols for Trustee Training.
Finance	1. Efficient fiscal forecasting and budgeting. 2. Maintain prudent fiscal management.

Source: The Dennis P. McHugh Piermont Public Library Strategic Plan, 2020.

The Library Director, Kristine Palacios, MLIS, was contacted on May 15, 2023, for information regarding the current state of the Library, along with Mitchell Eiss, President of the Library Board of Trustees. One key concern mentioned by Ms. Palacios and Mr. Eiss was parking. The Library does offer several parking spots adjacent to and on the north side of the building and the northwest corner of the building. However, these spots are commonly, but wrongly, associated with the adjacent "River Lot", and sometimes these spaces will be occupied by vehicles of guests not actually visiting the Library. Access to these parking spots particularly tends to be more competitive on weekends and when the weather is warm, drawing more visitors into the Village for recreation and leisure activities along the riverfront. Another challenge associated with this parking area is that the Library parking spaces contain the only two handicap parking spaces in this area, with the "River Lot" not containing any additional handicap spaces. In addition to these concerns, the Library does experience flooding in its parking area and even up to the foundation of the building during flooding events, but fortunately has not experienced flooding inside the building to date. Lastly, it was discussed that during and as a result of the COVID-19 pandemic, the Library has recently examined the possibility of expanding within its existing footprint and how it can make better use of its current space. However, it was determined that this would not be feasible or totally necessary in the immediate time frame.

3.7.7. South Orangetown Central School District

The entire Village of Piermont is served by the South Orangetown Central School District. Students attending public school that live within the Village attend all four of the District's schools. Elementary school students attending kindergarten through 2nd grade go to William O. Schaefer Elementary School located on Lester Drive in the hamlet of Tappan, elementary school students attending 3rd grade through 5th grade go to Cottage Lane Elementary School located on Cottage Lane in the hamlet of Blauvelt, middle school students attending 6th grade through 8th grade go to South Orangetown Middle School located on Van Wyck Road in the hamlet of Blauvelt, and high school students attending 9th grade through 12th grade go to Tappan Zee High School located on Dutch Hill Road in the hamlet of Orangeburg. **Table 3.7-2** details the enrollment of each school in the South Orangetown Central School District, which also serves the residents of Blauvelt, Grandview-on-Hudson, Orangeburg, Palisades, Sparkill, and Tappan.

Table 3.7-2. South Orangetown Central School District Enrollment

Building	Enrollment
William O. Schaefer Elementary School (WOS), Kindergarten – Grade 2	576
Cottage Lane Elementary School (CLE), Grades 3 – 5	629
South Orangetown Middle School (SOMS), Grades 6 – 8	633
Tappan Zee High School (TZHS), Grades 9 – 12	951

Source: NYS Education Department, Student Information Repository System (SIRS) 2023, Enrollment as of October 5, 2022.

Interim District Superintendent Ileana Eckert was contacted on June 29, 2023 for information on the School District's capacity for future residential growth that would generate additional school children, potential planned facility expansions or renovations for the schools, concern with any development projects proposed or recently approved within the Village of Piermont, concerns related to school bus access, schoolchild safety, and demand on school programs, and the impact of Hurricane Sandy and/or any subsequent flooding events on the District and its facilities. This section will be updated upon receipt of a response (See Attachment A, Questions Asked to Community Service Providers).

3.7.8. Parks, Recreation, and Open Space

The Village of Piermont's outdoor recreation plays a significant role in its residents' lives and because of this, the Village strives to protect and beautify its natural resources and open spaces. The Village of Piermont maintains several public, open spaces and parks as well as a community center and other recreational facilities for use by the community for a multitude of recreational activities. All parks are free and open to the public. Additionally, the Village is bordered by a

Rockland County Park, the 532-acre Clausland Mountain Park[10], and a New York State Park, the 706-acre Tallman Mountain State Park.[11] Furthermore, the Village is traversed by two trailways: the Long Path, suitable for hiking and extending 358 miles from the 175th Street Subway Station in New York City to John Boyd Thacher State Park near Albany in New York; and the Old Erie Path, suitable for hiking and mountain biking and spanning 3.4 miles from the southern edge of South Nyack at the end of the Raymond G. Esposito Trail and passing through Grand View-on-Hudson and Piermont before terminating at the junction of the Joseph B. Clarke Rail Trail in Sparkill.[12] These recreation resources provide a range of passive and active recreation opportunities for Village residents as well as visitors to the Village, and are identified in **Table 3.7-3** below.

Table 3.7-3. Parks, Recreation, and Open Space Resources

Resource Type	Name
Village Park	• Art Rittenberg Field • Piermont Community Dog Run • Eleanor Stroud Park • Kane Park • John F. Kennedy Memorial Park • Parelli Park and Piermont Community Garden • Flywheel Park • Piermont Pier • Half Moon Park • Checkers Park
Village Recreation Facility	• William Goswick Pavilion • Piermont Community Center
Rockland County Park	• Clausland Mountain Park
New York State Park	• Tallman Mountain State Park
Trail	• Old Erie Path • Long Path • North Shore Walkway

Source: Village of Piermomt Parks and Recreation Department website (https://piermont-ny.gov/departments/parks_and_recreation.php)

The Village of Piermont Parks Commission was contacted on July 5, 2023 for information on the following topics: whether or not the Parks Commission/Parks and Recreation Department is concerned with any particular proposed or recently approved development projects, whether or not the Parks Commission/Parks and Recreation Department have experienced any impacts or circumstances related to the pace or type of development in the Village over the last few years, whether or not there any new projects – planned, upcoming, or currently underway – that the Parks Commission/Parks and Recreation Department is undertaking, if there are any projects that

[10] http://rocklandgov.com/departments/environmental-resources/county-parks-and-dog-runs/clausland-mountain-park/
[11] https://www.nynjtc.org/park/tallman-mountain-state-park
[12] https://www.nynjtc.org/region/long-path

the Commission and/or Department would like to see completed over the next 1, 5, or 10 years, whether or not any Parks and Recreation Department facilities were impacted by Hurricane Sandy or any subsequent flooding events, and if any projects have been identified, planned for, or completed to improve flooding resiliency, and whether or not there are any additional concerns identified by the Commission/Department that the Town Board should be aware of. In addition, the Commission/Department was asked to confirm the Parks, Recreation, and Open Space Resources inventory listed in the table above. This section will be updated upon receipt of a response (See Attachment A, Questions Asked to Community Service Providers).

3.8 Utilities

The Village of Piermont's residents, landowners, and businesses are well served by a comprehensive system of public utilities including energy, water supply, and sanitary and sewage services, which are provided by governmental and private agencies. The Village strives to ensure that all residents are connected to and served adequately by these utility systems.

Key Takeaways

- **The Village's water is primarily served from outside the Village, mainly the Lake DeFrost Treatment Plant.**
- **Stormwater runoff and drainage pose as increasing threats to the Village as weather events increase in intensity.**
- **The sewer system and environmental management department don't have any current stressors, but are impacted by severe weather events such as Hurricane Sandy.**

3.8.1. Water System

The West Nyack Office of Veolia Water was contacted on May 16, 2023 for information regarding the Village's existing water system, including the Village's average daily water usage, maximum permitted capacity, potential concerns with regard to any of the sources or distribution system, the impact of any recent or planned development projects or construction, the impact of Hurricane Sandy and/or any subsequent flooding events, and any possible land use trends that may be increasing water demands.

According to Bill Madden, Director of New York Communications & Government Affairs of Veolia North America, the Village resides in a regional water supply district serving much of Rockland County, thus Veolia's water supply is not specific to the Village of Piermont. The Village is served primarily by water originating from the Lake DeForest Treatment Plant, located at the southern end of Lake DeForest in nearby West Nyack. There are currently no capacity concerns regarding the ability to serve the Village and Rockland County generally shows a declining consumption trend over the past decade.

3.8.2 Sewer System

According to the Local Waterfront Revitalization Program (LWRP) prepared for the Village in June of 2018, sanitary sewage in Piermont enters sewer lines and is conveyed to three pump stations, two located at Piermont Landing and one on Ferdon Avenue. The Piermont Landing stations pump to the Ferdon Avenue pump station, and the Ferdon Avenue pump station pumps to the Sparkill pump station on William Street in Sparkill. The Sparkill station pumps directly to the

Orangetown Wastewater Treatment Plant (WWTP) located along Route 303, just north of the Palisades Interstate Parkway.[1]

According to the March 2011 Rockland County Comprehensive Plan, the Orangetown Sewer Department operates and maintains the wastewater collection and treatment systems for Orangetown, and transports and treats wastewater from Nyack, Upper Nyack, South Nyack, Grand View, Upper Grandview, and Piermont. It also treats sewage from parts of the Boroughs of Rockleigh and Old Tappan in New Jersey. The collection system consists of over 200 miles of sewer pipe and 39 individual pump stations. The Orangetown Wastewater Treatment Plant (WWTP) was built in 1959 and upgraded in 1995. At the time that the Rockland County Comprehensive Plan was prepared in March of 2011, the Orangetown WWTP served a population of approximately 51,800 and had a design flow of 12.75 millions of gallons per day (mgd). The Orangetown WWTP's 2009 average flow was 7.87 mgd.[2]

The Orangetown WWTP treats sewage from the Town of Orangetown, including sanitary sewage from the Village of Piermont. The treated sewage is tested daily at its discharge point on the grounds of the WWTP and is piped to an outfall line originating from the Rockland County Sewer District #1. This outfall travels under the Pier in Piermont and extends 600 feet into the Hudson River at its final discharge point. As informed by the Town of Orangetown Commissioner of the Department of Environmental Management and Engineering, only treated and tested effluent is discharged into the River, with no raw sewage discharge or combined sewer discharge occurring.[3]

Similar to many older communities, portions of Orangetown's sanitary sewer system are aged and in need of repair or replacement. Problems in pipes can cause back-ups and allow wastewater to leak into surrounding soils. Cracks and breaks in the system also allow groundwater and stormwater to enter into the sanitary sewer system, and these flows are referred to as infiltration and inflow (I&I). Infiltration and inflow can cause substantial increases in wastewater flows during rainfall events, and when the system is clogged or choked with flows beyond its capacity, sanitary sewer overflows (SSOs) can occur. During SSOs, a mixture of untreated sewage, groundwater, and stormwater overflows through pipes or sewer manholes. High fecal coliform levels are often attributed to these infrastructure issues.[4]

As indicated in the Local Waterfront Revitalization Program (LWRP) prepared for the Village in June of 2018, the Town of Orangetown is in the process of rehabilitating sanitary sewers to reduce inflow and infiltration in response to a consent order from the DEC. Since 2010, Orangetown has bonded nearly $50 million in funds for the rehabilitation of its treatment plant, pumping stations, and sewer mains.[5] The Town has completed three years of lining the sanitary

[1] **LWRP June 2018.pdf**
[2] https://rocklandgov.com/files/4513/5067/1656/Rockland_Tomorrow.pdf
[3] **LWRP June 2018.pdf**
[4] LWRP June 2018.pdf
[5] Town of Orangetown Minutes 1-26-2010 http://orangetown.com/wp-content/uploads/2016/08/M01-26- 10.pdf

sewers in the Village of Nyack for $3 million. Over 75% of that cost was funded by a grant/loan from the NYS Environmental Facilities Corporation from the federally funded Stormwater Mitigation Loan Program. The Town has also imposed a sewer "rent" charge since 2005 that supports administration, maintenance, and repair of the Orangetown sewer system.[6] As of 2018, Orangetown was considering further investigations of sanitary sewers town-wide, but did not have plans to line the sanitary sewers in Piermont in the near future. It was stated in the 2018 LWRP that the Village should actively encourage the Town to prioritize the extension of its infiltration and inflow remediation to the Village of Piermont.[7]

As of June 2023, the current gpd of sewage treatment per day is 7 million, with a maximum capacity of 12.5-13 million and a peak flow of 31 million. The Town of Orangetown Commissioner of the Department of Environmental Management and Engineering has stated that no plans are currently in place to expand the treatment of wastewater, and there are no concerns regarding town pump stations. However, it was identified that the department was impacted by Hurricane Sandy and/or other subsequent flooding events, but no additional information regarding this was provided.

The Commissioner also identified that the department has not been impacted significantly by any recent development or construction, and there are no concerns regarding proposed projects or recently approved development projects in the Village. Additionally, the department has also not noticed or been affected by any land use trends that may cause increased demands.

3.8.3 Stormwater Drainage

The Village of Piermont increasingly experiences threats from stormwater runoff. Overflows caused by heavy rainfall events can result in flooding for particular areas in the Village. According to the Local Waterfront Revitalization Program (LWRP) prepared for the Village in June of 2018, the most severe flooding area in the Village is along the tidal reach of Sparkill Creek, which receives increased stormwater runoff from the Sparkill Creek watershed caused by upland development, combined with the tidal rise of four feet or more between low and high tide. When stormwater runoff from the freshwater Sparkill Creek meets the opposing surge of a flood tide, the Creek overflows its banks. While communities upstream see the solution to their drainage problems in projects designed to increase the rate of stormwater runoff, this "solution" serves only to intensify the drainage problem downstream, exacerbating flooding in Piermont.[8]

The Department of Public Works Superintendent, Tom Temple, was contacted on May 16, 2023, for information regarding the current state of the Department. Mr. Temple raised concern over the increase of stormwater runoff occurring from Tweed Boulevard downhill to State Route 9W, and eventually ending up in other drainage systems along the Erie Path. Due to this being a critical

[6] Town of Orangetown Code. http://ecode360.com/26865144
[7] LWRP June 2018.pdf
[8] LWRP June 2018.pdf

slope area of the Village, this becomes a hazard to Village residents and their properties during heavy rain events. Mr. Temple suggested that any future construction of the areas along State Route 9W and along Tweed Boulevard should be heavily scrutinized and over engineered for stormwater containment and any potential impact on the downhill properties.

Chapters 169, Stormwater Control, and 170, Stormwater Management, of the Village of Piermont code were adopted in 2007 and 2010, respectively, to regulate stormwater control and stormwater management in relation to the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System (SPDES) general permit and the municipal separate storm sewer system (MS4) permit. The purpose of these chapters is to regulate land development activities in an effort to reduce stormwater runoff, water-borne pollutants, illicit discharges into the municipal separate storm sewer system, soil erosion, nonpoint source pollution, and any other hazards that may enter the rivers and impair ecological systems.[9]

More specifically, Chapter 169, Stormwater Control, of the Village of Piermont code regulates non-stormwater discharges into the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and New York State law. It establishes methods for controlling the introduction of pollutants into the MS4, including prohibiting illicit connections, activities, and discharges into the MS4; establishes legal authority to carry out all inspection, surveillance, and monitoring procedures to ensure compliance, and promotes the public awareness of the hazards involved in the improper storage and/or discharge of pollutants.[10]

Furthermore, Chapter 170, Stormwater Management, of the Village of Piermont code establishes minimum stormwater management requirements and controls to protect and safeguard general health, safety, and welfare of the public. It requires that land development activities conform to the requirements of the NYS DEC State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities. It also minimizes increases in stormwater runoff from land development to reduce flooding, increases in stream temperature, siltation, and stream bank erosion. These regulations help reduce stormwater
runoff rates and volumes, soil erosion and nonpoint source pollution through stormwater management practices.[11]

[9] LWRP June 2018.pdf
[10] LWRP June 2018.pdf
[11] LWRP June 2018.pdf

3.9 Development Potential Evaluation

Key Takeaways

- **There is limited land available for development in Piermont.**
- **The acreage of vacant land with development potential totals 23.05 Acres**
- **There are two projects under review for residential development.**
- **Analysis of developable lands indicates that a full build-out will yield 76 residential units based on current zoning.**

3.9.1 Introduction

Piermont as a Village has few areas that have development potential. The areas with development potential are often found on smaller lots and lands that fall within the steep slope Categories II, III and IV as defined by Article XIX of the Piermont Village Code. Although there are limited areas with development potential, it is important to understand what sites are both available and capable of development.

3.9.2 Development Potential

To determine which land was available for development within Piermont, an analysis of the existing vacant land was completed which evaluated all the vacant parcels within Piermont and separated out all the land which was not available for development. The process involved reviewing each of the parcels which fell under the vacant land categories defined in the previous land use analysis and evaluating if the vacant land is truly available for development, and if it is not unduly constrained in an environmentally sensitive area.

Upon further investigation, much of the land which is noted as vacant within the Village of Piermont is in the downtown, contained within the street rights of way and the existing parking lots for the downtown commercial entities. Once these were removed from consideration as developable, the analysis then removed land where there is already existing construction, land used as private open space, land used for parking, and land which was otherwise constrained or too small for any development. After the analysis, 19 sites were determined to be fit enough to be considered for development, and upon discussions with the Building Inspector, we found that two of the lots are already under review for development projects. Results are shown graphically in the Development Potential map.

Within this analysis, 9 of the 19 sites have constraints with regards to steep slopes. In analyzing the Village Code, the steep slope restrictions reduce the ratio of allowable floor area at such sites, but they still have significant development potential. One of the sites already under review for a four-lot subdivision has a significant portion classified as a Type II steep slope.

Although there is the possibility that there are existing sites in the Village that are currently developed which might be demolished and re-developed, that was not accounted for in this analysis. As these developed lots are currently in use and generating economic returns, it is difficult to evaluate their potential redevelopment.

Table 3.9.2-1 Displays the development capacity of the lots for residential development according to the existing zoning. All the existing sites where there is the capacity for the development of a residential unit are in Residential zones. As shown in the table below, if the Village was to develop to full capacity according to the existing zoning, it would have the capacity to accommodate 76 residential units on a total of 23.05 acres.

Table 3.9.2-1: Development Potential Based on Zoning

Site ID	Address	Section / Block / Lot	Zoning	Acres	Number of Residential Units
1	**209 Ferdon Avenue**	75.78 / 1 / 6	R-10	2.44	10
2	**548 Route 9W**	75.69 / 1 / 3	R-40	2.41	2
3	**199 & 201 Tweed Blvd**	75.54 / 1 / 1.1 & 1.2	R-20	2.09	4
4	**766 & 768 Route 9W**	75.29/ 1 / 14.1 & 14.2	R-20	2.06	4
5	**20 Hartz Terrace**	75.62 / 1 / 18	R-10	1.58	6
6	**167 Tweed Blvd**	75.37/ 1 / 7	R-20	1.49	3
7	**3, 5, 7, 9 Hartz Terrace**	75.62/ 1 / 14, 15, 16, 17	R-10	0.87	3
8	**12 Stevenson Street**	75.30 / 1 / 62	R-10	0.85	3
9	**171 Tweed Blvd**	75.45 / 1 / 1.1	R-20	0.74	1
10	**71 Piermont Avenue**	75.77 / 1 / 24.2	R-7.5	0.73	4
11	**11, 13, 15 Elm Street; 38, 42, 46 Tate Avenue**	75.54 / 2 / 43.21, 43.22, 44, 45, 46, 47	R-7.5 / R-1.25	0.69	8
12	**75 Tate Avenue**	75.54 / 2 / 66	R-7.5	0.54	3
13	**45 Piermont Place**	75.62 / 1 / 2	R-10	0.29	1
14	**56 Paradise Avenue**	75.55 / 1 / 11	R-7.5	0.23	1
15	**1, 7, 11 Michigan Avenue**	75.63 / 1 / 10, 13, 14	R-7.5	0.21	1
16	**101, 105 Paradise Avenue**	75.63 / 1 / 37, 38	R-7.5	0.17	0
17	**609 Piermont Avenue**	75.46 / 2 / 16	WF-2	0.08	0
18*	***447-477 Piermont Avenue***	*75.55 / 1 / 13, 14.1, 14.2*	*CBM*	*0.10*	*18*
19*	***420, 424 Piermont Avenue***	*75.62 / 1 / 22, 39*	*R-10 / R-7.5*	*5.49*	*4*
	VILLAGE TOTAL			**23.05**	**76**

Source: Rockland County GIS 2022, Town of Orangetown Assessors Office, 2023
** - Sites 18 & 19 are currently in Review for Development and the Number of Residential Units is based on their current proposals.*

3.9.3 Examinations of Developable Sites

Below are screenshots of the three largest developable sites in terms of the yield of the number of units based on the build-out evaluation above, as well as the two sites which are currently have development projects under review by the Village.

Site 1: 209 Ferdon Avenue, R-10 Zone, 10 Residential Units

Site 11: 11, 13, 15 Elm Street & 38, 43, 46 Tate Street, R-7.5 & R-1.5 Zones, 8 Residential Units

Site 5, 20 Hartz Terrace, R-10 Zones, 6 Residential Units

Site 18, 447-477 Piermont Avenue, CBM Zone, 18 Residential Units (In Review)

Site 19, 420, 424 Piermont Avenue, R-10 & R-7.5 Zone, 4 Units (4 Lot Subdivision in Review)

3.10 Sustainability and Resilience

Key Takeaways

- **Piermont has been proactive, by adopting the advisory base flood elevations produced by FEMA after Super Storm Sandy, which is beyond the usual FEMA requirements for the management of floodplain construction.**
- **By 2050, Piermont will be impacted from raised Hudson River water levels by projected sea level rise, on a constant basis from daily high tides during clear weather, according to projections from Columbia University and others.**
- **Extreme rainfall as projected by NOAA and Cornell University will continue to exceed previously experienced levels, due to warmer temperatures which allow the air to hold more moisture. New projections are changing the size and extent of drainage systems required for roads or new construction.**
- **Decisions on traffic improvements or other infrastructure projects undertaken in low-lying areas will need to consider projected water levels from sea level rise and extreme rainfall.**

3.10.1 Flooding Risk – From LWRP

Flooding and FEMA Advisory Base Flood Elevation Standards Adopted

On June 5, 2018, the Piermont Village Board of Trustees accepted a Local Waterfront Revitalization Plan (LWRP) which currently is under review by the New York State Department of State. The LWRP section on flooding risk is summarized below.

The unique location of Piermont along the waterfront puts the community at a high risk of flood damages during severe weather events such as nor'easters or hurricane events. The Village of Piermont experienced significant damage totaling approximately $20 million due to Superstorm Sandy and is continuing to repair property that was damaged during the 2012 storm. While Piermont was mostly spared from rain and land/mudslides during Sandy, floating debris pushed ashore in the waterfront presented a hazard that caused more significant damage than the floodwaters. Sewage backups into basements along Piermont Avenue were also a problem.

Emergency equipment and facilities are located in areas vulnerable to extreme weather events and need to be re-located or made less vulnerable. Following Sandy, FEMA created new advisory base flood elevation maps for Hudson River communities, including Rockland County and Piermont. The new maps have incorporated the new data on base flood elevation data collected after superstorm Sandy and Hurricane Irene. The new maps vary significantly from

the pre-sandy maps that did not include areas of Piermont that were in fact inundated during the storm event. The new preliminary maps portray a higher base flood elevation for both the 100 year, or 1% annual chance flood, and the 500 year, or 0.2% annual chance flood. The new maps represent the best available data and FEMA is encouraging their use for planning purposes even though they have not been formally adopted by FEMA. In December of 2013, the Village of Piermont adopted these advisory base flood elevations (ABFE's) for the enforcement of its Flood Damage Prevention code, Chapter 112. The Village chose to adopt this higher standard for flood prevention under its home rule authority, even though its adoption was not required by FEMA. The LWRP acknowledged that as sea levels rise, the floodplain will extend further into inland areas.

The Village of Piermont is subject to both estuarine and tributary flooding. The Village lies at the bottom of the drainage basin of the Sparkill Creek and near the bottom of the drainage basin of the Hudson River where the incoming tide will back-up storm-water runoff. The Sparkill Creek watershed includes the area between the Hudson and Hackensack River systems in Orangetown in Rockland County and extends into northern Bergen County in New Jersey. The Piermont waterfront along the Sparkill Creek is subject to frequent flooding, especially along the tidal portion, and high flood flows have resulted in extensive damage to residential properties.

During flood conditions, the roadway of the historic drawbridge across the tidal Creek at Bridge Street is completely submerged. Nuisance flooding has become routine in the low lying Bogertown neighborhood where residents regularly move vehicles before rain events to prevent damage. The frequent flooding also results in harbor siltation and significant degradation of coastal water quality.

The Piermont Pier and the Tappan Zee shoreline to the north make a bight (a bend in the river) that protects Piermont Bay from storms out of the west and south. However, the bight is open to the northeast, and major storms blowing in from the north and northeast can wreak havoc. Parelli Park, located at the center of the bight where northeasterly storm winds and waves are focused, has required several major repairs to its bulkhead in the first decade since its construction.

The most severe flooding area in the Village is along the tidal reach of the Sparkill Creek, which receives the increased runoff from the Sparkill Creek watershed caused by upland development combined with the tidal rise of four feet or more between low and high tide. When stormwater runoff from the freshwater Creek meets the opposing surge of a flood tide,

the Creek overflows its banks. While communities upstream see the solution to their drainage problems in projects designed to increase the rate of stormwater runoff, this "solution" serves only to intensify the drainage problem downstream, exacerbating flooding in Piermont.

Special Flood Hazard Area Map

The FEMA ABFE flood zone maps portray two distinct flood hazard zones: the A zone and the V zone. The Advisory 1% annual chance floodplain includes both A and V Advisory flood hazard zones: Advisory Zone V is comprised of the area subject to high velocity wave action (a 3- foot breaking wave) from the 1% annual chance coastal flood. Zone V is subject to more stringent building requirements than other zones because these areas are exposed to a higher level of risk.

Advisory Zone A is comprised of the area subject to storm surge flooding from the 1% annual chance coastal flood. These areas are not subject to high velocity wave action but are still considered high risk flooding areas.17

In addition to the flood protection legislation the Village of Piermont has additional legislation that regulates 1) soil erosion and sediment control 2) stormwater control and 3) stormwater management.

Soil Erosion and Sediment Control

Chapter 168 of the Piermont Code regulates soil erosion and sediment control in an effort to prevent the indiscriminate disturbance and clearing of land to preserve the physical and aesthetic character of the Village, to ensure erosion control, to promote minimal adverse disturbance to existing vegetation, to minimize the need for additional storm-drainage facilities, to retain trees and other vegetation for wind protection, to reduce air pollution and to preserve and to enhance wildlife and wildlife habitats. The chapter requires that land disturbance activities require a permit by the Planning Board and that appropriate measures are taken to reduce soil erosion during and after construction activities. In addition to Chapter 168, the Village regulates steep slopes construction which also furthers the goal of reducing erosion and sedimentation of the riverways - this is discussed in detail in the steep slopes chapter of this program.

Stormwater Management

Chapters 169 and 170 adopted in 2007 and 2010 regulate stormwater control and stormwater management in relation to the New York State SPDES general permit and the MS4 permit. The purpose of these chapters is to regulate land development activities in an effort to reduce stormwater runoff, water-borne pollutants, illicit discharges into the separate storm sewer system, soil erosion, nonpoint source pollution, and any other hazards that may enter the rivers and impair ecological systems.

Climate Change and Sea Level Rise

As the rate of global warming increases and polar ice sheets continue to melt, our oceans and coastal areas face ever-increasing sea levels. Piermont, with its location hugging the Hudson River faces sea level rise challenges as a majority of the Village's downtown and mixed-use residential and commercial districts are projected to be inundated by 2100. Not only does sea level rise inundate areas that are presently land, but it also puts a larger swath of Piermont at risk during flood events as surges go further inland.

This puts many of the businesses and residents in the Village of Piermont at risk of economic losses associated with the loss of property subject to sea level rise and coastal flooding events. As an LWRP community, the Village of Piermont may utilize the coastal policies and proposed projects enumerated within this program as a long-range comprehensive approach to mitigate or adapt to the impacts of sea level rise. The LWRP looked at several different sea level rise scenarios utilizing the official New York State DEC projections provided as a result of the NYS Community Risk and Resiliency Act.

3.10.2 Sea Level Rise Flooding Risk – From New York State Department of Environmental Conservation (DEC)

6 NYCRR Part 490 Projected Sea Level Rise, Adopted 2017

The New York State DEC has created sea level rise projects that it mandates communities to use when planning to adapt to sea level rise. The projections were adopted as DEC rule 6 NYCRR Part 490 in 2017. The sea level rise projection rule is part of the implementation of the State Community Risk and Resiliency Act (CRRA), adopted in September of 2014, and as amended in 2019. This rule sets projections of sea level rise for the lower Hudson-New York City region, of which Piermont is included, as follows:

Sea Level Rise Projections, 6 NYCRR Part 490, Adopted 2017

Time Interval	Low Projection	Low-Medium Projection	Medium Projection	High-Medium Projection	High Projection
2020s	2 inches	4 inches	6 inches	8 inches	10 inches
2050s	8 inches	11 inches	16 inches	21 inches	30 inches
2080s	13 inches	18 inches	29 inches	39 inches	58 inches
2100	15 inches	22 inches	36 inches	50 inches	75 inches

It should be noted that observations in the last decade show that actual river levels appear to be increasing at the rates according to the High Projection.

Update to 6 NYCRR Part 490 Now Underway

In May of 2023, the DEC began the rulemaking process to update the 2017 Sea level Rise Projections, in response to more recent IPCC studies with a base line of 1995-2014. (Note that the 2017 rule was based on ClimAID studies with a baseline of 2000-2004.) The greatest driver of sea level rise currently is the thermal expansion of the world's oceans due to the increase in global temperatures. The need for updated projections is driven by the observations and projections, based on greater understandings, that the loss of the critical Greenland and Antarctic ice sheets will accelerate in the coming decades. The new, draft projections increase the timeline out to 2150, as well as including an additional scenario, a "very high" projection, which is a major difference from the current rule. This "very high" projection category reflects the probability of acceleration of polar ice mass loss and ice cliff instability, increasing the projected sea levels for the 2080s, 2100 and 2150. Map X shows an approximation of the very high projection for 2100, using NOAA's sea level rise viewing tool.

These new projections for the New York City/Lower Hudson region HAVE NOT BEEN ADOPTED by NYSDEC. They are included here for consideration, as they may be adopted within a few years of the adoption of this Comprehensive Plan by the Village of Piermont.

Sea Level Rise Projections, Proposed 6 NYCRR Part 490 update, Proposed May 2023

Time Interval	Low Projection	Low-Medium Projection	Medium Projection	High-Medium Projection	High Projection	Very High Projection
2030s	6 inches	7 inches	9 inches	11inches	13 inches	NA
2050s	12 inches	14 inches	16 inches	19 inches	23 inches	NA
2080s	21 inches	25 inches	30 inches	39 inches	45 inches	83 inches
2100	25 inches	30 inches	36 inches	50 inches	65 inches	114 inches
2150	38 inches	47 inches	59 inches	89 inches	177 inches	NA

It should be noted that a series of maps has not been created that shows visualizations of the new Hudson River water levels as projected by the new version of Part 490 rule that is under consideration. Should the new Part 490 values be adopted by NYS DEC, the Village should update its sea level rise projection maps. For purposes of illustration, a map has been included at the end of this chapter with 120 inches of sea level rise above current mean higher high water, using the NOAA Sea Level Rise Viewer, at https://coast.noaa.gov/slr/# . This map shows a "worst case" scenario of 10 feet of sea level rise, which is close to the predicted level of 114 inches by the unadopted, preliminary Part 490 amended projection for the year 2100, in a "Very High Projection" scenario.

3.10.3 Sea Level Rise Flooding Risk – Columbia University CIESIN Projections

The Columbia University Center for International Earth Science Information Network (CIESIN) has created a webtool for projecting the Hudson River water levels for various sized storm events, as boosted over time by sea level rise over the coming decades.

It is available at https://www.ciesin.columbia.edu/hudson-river-flood-map/

This source is concerned the most definitive to work with for planning for the future of Piermont, as it is focused on the Hudson Valley. For this Comprehensive Plan, NPV has produced a series of sea level rise projection maps using the CIESIN tool for the years 2050, 2080 and 2100. For each of these years, the maps show the extent of flooding when there is no storm (at daily high tide), when there is a 100-year storm, and when there is a 500-year storm. For each of these conditions, both the medium and high projections of sea level rise were employed. Therefore, for planning purposes, 18 maps were produced focused on the downtown Village area. The sea level rise projections are based upon the base mean sea level of 1983-2001, a standard sea level used by the National Oceanic and Atmospheric Administration (NOAA). See Maps X-X for visualizations of these projections.

Sea Level Rise Projections, Columbia University CIESIN, 2023
http://fidss.ciesin.columbia.edu/fidss_files/documents/Hudson_River_Flood_Impact_Decision_Support_Tool_Technical_Report.pdf

Sea Level Rise	Low-End Scenario	Median Scenario	High-Eng Scenario
Inches	Year	Year	Year
0	1992	1992	1992
6	2030s	2020s	2010s
12	2070s	2040s	2020s
18	>2100	2050s	2030s
24	>2100	2070s	2040s
30	>2100	2080s	2050s
36	>2100	2090s	2060s
48	>2100	>2100	2070s
60	>2100	>2100	2080s
72	>2100	>2100	2090s

3.10.4 Flooding Risk – From 2014 Resiliency Task Force Report

Sea Level Rise Risk Assessment- Resiliency Task Force

It should be noted that Piermont has been at the forefront of planning for sea level rise through because of its waterfront resiliency task force and their pioneering joint study with Scenic Hudson, the New England Interstate Water Pollution Control Commission, Hudson River Estuary Program, New York State Department of Environmental Conservation, the Lincoln Institute of Land Policy, and the Consensus Building Institute and Catalysis Adaptation Partners. This January 2014 report from the Waterfront Resiliency Task force informed the recommendations and proposed projects detailed in the LWRP. The report may be found online at
https://www.dec.ny.gov/docs/remediation_hudson_pdf/piermonttffr.pdf

The report included an asset inventory and coastal risk assessment, which utilized a risk assessment formula to examine trends in coastal or riverine flooding risk, and to plan for risk reduction by geography or sector (e.g., critical facilities, vulnerable populations). The full report can be downloaded online at:
http://www.scenichudson.org/sites/default/files/files/Piermont%20Risk%20Assessment%20report-%20FINAL.pdf

Assets were identified through remote analysis and a series of task force and public input exercises. They were categorized according to their class (e.g., Infrastructure Systems,

Housing, Economic), class sub-category (e.g., Transportation, Single-Family Residence, Restaurant), importance to socially vulnerable populations, and critical facilities. Individual assets were grouped based on proximity and similar characteristics.

Current risk areas were modeled by Scenic Hudson (a project partner) using methods defined by the New York Rising Community Reconstruction Program, and the following data: a current working model of Hudson River elevation (a vertical datum modeled by New York Harbor Observing and Prediction System), LiDAR elevation data, and FEMA's Advisory Base Flood Elevations. Risk areas were also modeled for the 2020s, 2050s, and year 2100, using 10, 29, and 72 inches of sea level rise (SLR), respectively.

Landscape attribute values were scored based on the modeled risk areas, local knowledge, and remote analysis. Vulnerability scores, which represent the level of impairment or consequences that assets experience from a storm event, were developed in discussion with the Task force, village officials and other community members based on their knowledge of the assets and recent storm events (Superstorm Sandy, in particular). Vulnerabilities were estimated where a value was not otherwise available.

Risk scores were calculated for a 100-year storm event (Hazard = 3) for current, 2020s, 2050s, and 2100.

Results

The results below are described for current, 2020s-, 2050s- and 2100-time frames (corresponding to predicted sea level rise of none, 10", 29", and 72", respectively). It is important to note that while the time frames of these sea level rise projections may be different, the trends are likely to hold under most conditions. It is also important to note that changes described for these individual time frames in fact describe the range of time leading up to each of them; that is, changes described in the 2100-time frame could in fact occur between the 2050s and 2100 (between 29" and 72" of SLR).

Risk Areas

Piermont's small immediate Hudson River and Sparkill Creek waterfronts generally meet a steep, water-facing topography. Thus, sea level rise and its associated risk areas are expected to make relatively little inland advancement beyond the current waterfront and risk areas over the next century. Rather, a gradual yet dramatic shifting into higher risk categories is expected for assets already within the low-lying waterfront over time.

In the 2020s the most dramatic predicted shift in risk areas will be to regular (higher) inundation in Piermont Marsh and the southeast flank of the pier (e.g., Ferry Road). Inundation at high tides will also begin in a spotty pattern both north and south of the pier. A small, general shift from moderate to high-risk areas is also expected throughout the village. (Note: "The Pier" generally refers to the entire peninsula extending into the Hudson River).

The long, narrow, easternmost extension is referred to in the risk assessment tool as the "Erie railroad Pier", and its assets as the "Pier's east end" assets.

A continued pattern of increasing risk and inundation is expected in all shore areas (Hudson River and lower Sparkill Creek) over the remainder of the century. By the 2050s a pattern of water pinching in from both north and south of the pier will develop and is expected to lead to the pier's isolation from the mainland by 2100. Unless mitigated, this pattern will cause regular inundation for core business district assets (commercial and residential) at the base of the pier, with assets on the remaining pier experiencing extreme and high risk. In the north, Parelli Park, southern portions of a mixed-use area (549-625 Piermont Ave) and the community garden will be in the path of this pinching pattern of inundation. From the south, flooding of the core business district will advance primarily through the eastern section of the Patch and the DPW Parking Lot. The village may wish to consider specific fortification adaptations to preserve the viability of the business core into the mid-term future. Examples of such adaptations may include repurposing Paradise Avenue to function as a levee and elevating or adding protective shore defenses to key assets at the northern base of the pier.

Risk Scores

Risk scores in this analysis ranged from 0-60 (Residual to High). While not all assets fell in the Extreme risk category, many were projected to become regularly inundated (that is they were in a permanent risk area which is not scored by this tool). One asset was projected to experience regular tidal inundation by 2020s, 20 assets by 2050s, and 50 of the 74 assets by 2100. Most assets were scored relatively low for vulnerability, with only 16 assets receiving a score of 4 or 5 (Significant or Major). Many of these 16 assets were among those predicted to be regularly inundated by the 2050s and 2100. Since Vulnerability is one of the main factors in the calculation of risk scores, these relatively low numbers were a main contributor to the absence of Extreme risk scores.

The overall pattern of risk scores is similar to that of the modeled risk areas, but the risk scores take into account additional ground and situational conditions that are relevant to the overall risk of assets in the village. For instance, an asset in a High or Extreme risk area could have a

relatively low risk score if the property has several protective landscape attributes and low vulnerability (due to a flood adapted building design, for example). Below are additional results as examined by components of risk score or various asset categories.

Risk scores under current, 2020s, 2050s, and 2100 conditions for Village of Piermont waterfront assets.

High Vulnerability. Sixteen assets were rated with the highest vulnerability scores (Significant and Major). Among those, the Siren Tower (at Parelli Park), the Pumping Station, and the Piermont Fire Department Boat House are critical facilities29. Mop Top Park and the Walkway both represent highly vulnerable parks/recreational resources, and the remaining most vulnerable assets are small businesses. Examining the specific conditions that cause high vulnerability in assets (e.g., mechanicals in the basement) may present opportunities for effective adaptation actions. This may be a particularly productive line of investigation for highly vulnerable assets that have relatively low exposure, such as two of the small business asset groups along the commercial core of the village (#30 and #46), and to a lesser degree the Pumping Station, Mop Top Park, and the Walkway.

Assets with the highest vulnerability scores in the Village of Piermont waterfront (shown with current risk scores).

According to FEMA, critical facilities are those essential to the health and welfare of the whole population, and are especially important following hazard events.

Critical facilities and transportation/access assets

The analysis identified eight assets that are considered critical facilities according to FEMA's definition. Those at highest risk under current conditions are the Siren Tower (in Parelli Park), the Pumping Station (Ferdon Avenue), the PFD Boat Launch & Boat House, and the DPW Parking Lot.

Of these, the PFD Boat Launch (though not the House) and DPW Parking Lot are the first expected to be regularly inundated (in the 2020's and 2050s, respectively). At lower current risk (moderate or residual risk categories) are the Public Works Department, a medical facility (J. Enzenbacher, MD), Village Hall, and the Empire Hose Company. By the end of the century the Public Works Department and all currently high-risk critical facilities will experience regular inundation.

Risk scores of critical facilities in Piermont's waterfront.

Of the eight transportation/access assets included in the analysis, Ferry Road, Paradise Avenue, and the Erie Railroad Pier (the narrow, easternmost extension of Ferry Road) are at the highest current risk. The north and south sections of Piermont Avenue, along with Ferdon Avenue and the three bridges over Sparkill Creek, are all currently in a moderate risk category. No changes in risk category are expected for transportation/access assets before the 2020s, but by the 2050s. This includes roads and bridges, but excludes the DPW Parking Lot, which is a transportation asset but not directly related to access.

Portions of Ferry Road, Paradise Avenue, and north and south Piermont Avenue are expected to be inundated regularly. The Pier Road will be at high risk in the 2050s, and along with Ferdon Avenue is expected to be regularly inundated by 2100. If the village determines that extending the longevity of current access routes throughout the municipality is a priority, it may wish to examine specific actions such as seeking alternate driving access to the Pier (e.g. via Piermont Landing/Abbotsford Gate) and elevating the lowest portions of North and South Piermont Avenue (i.e. just north of Pier 701, near the Post Office, across from the Pumping Station, and just north of DPW).

Natural Assets at Risk

The most significant natural resources of the Piermont waterfront are Piermont Marsh and the shallow areas surrounding the pier and along the shore to the north. These natural assets are already inundated regularly, and their landscape attributes (which contribute to the exposure score) were somewhat difficult to quantify using this tool. However, it is likely that by the 2020s the characteristics of these assets that provide shoreline protection will be impacted, and by the 2050s they could be considerably diminished. The longevity of Piermont Marsh's protective services may be extended by marsh adaptation and/or migration, through natural or human assisted processes (e.g., assisted accretion).

The Hudson River NERR is following NOAA sentinel protocols to monitor surface elevation and vegetation change at Piermont Marsh beginning in 2018, and staff are part of a regional network evaluating best practices for promoting marsh accretion to keep up with sea level rise. Both will guide near- and long-term marsh management.

Sea Level Rise Risk Assessment-COAST Tool

As part of the Task Force report, in August of 2014 Catalysis Adaptation Partners, with the support of Scenic Hudson and the Resiliency Task Force, published a report that built on the

risk assessment efforts by incorporating data on the fiscal impacts of sea level rise. The report utilized the COAST modeling tool to:

- Conduct a vulnerability assessment for the Village from the threat of future storm surges, made worse by sea level rise over time.
- Calculate a prediction of cumulative damages to real estate over time if no action is taken (utilizing Village of Piermont assessment data).
- Calculate a prediction of one-time damages from 100-year storms that might occur in the future.
- Evaluate three sets of actions, or scenarios, that Village might pursue to mitigate future damages, with benefit-cost analysis.

The full report provided by Catalysis Adaptation Partners to Scenic Hudson, can be found at http://www.scenichudson.org/sites/default/files/files/Piermont%20Final%20COAST%20report.pdf

The COAST Vulnerability Assessment predicted:

- By the year 2100, there will be $192.2 million in cumulative damages to buildings over time in Piermont, from all storms, as sea level increases by 6.00 feet above today's level.
- By the year 2100, that 178 parcels will be permanently inundated by the Hudson River, as sea level increases by 6 feet over today's level, with a total taxable assessed value of $105.5 million.
- During a 100-year storm in the year 2055, $35.7 million in damages will occur from this one-time event, significantly higher than from Superstorm Sandy, as it would arrive on top of a sea level increased by 2.42 feet over today's level.
    - By the year 2055, the COAST model predicts that there will be $70.8 million in cumulative damages to buildings over time in Piermont, from all storms, as sea level increases by 2.42 feet above today's level.
    - By the year 2055, the COAST model predicts that 87 parcels will be permanently inundated by the Hudson River, as sea level increases by 2.42 feet over today's level, with a total taxable assessed value of $56.6 million.
    - During a 100-year storm that might occur in the latter half of the century, and with the specified increase in sea levels, the Piermont peninsula would be breached by Hudson floodwaters, creating a channel of water down Piermont Avenue in the Village center.

3.10.5 Flooding Risk – From Sparkill Creek Study

HIGH RISK AREA #1 – VILLAGE OF PIERMONT

The Village of Piermont includes the downstream-most section of Sparkill Creek, close to the confluence with the Hudson River Estuary, from station (STA) 35+00 to STA 55+00 (Figure 4-2). The watershed of the creek at this location is over 11 square miles. Water surface elevations in the creek in HRA 1 are influenced by the diurnal tidal cycle of the Hudson River Estuary. Flooding in HRA 1 can be exacerbated by tidal surges and when flood events on Sparkill Creek coincide with the high tide. Data collected by FEMA indicates that, as of 2019, 16 properties in Piermont were identified as repetitive loss or severe repetitive loss. Most of these properties are located along Paradise Avenue, Liberty Street, and Piermont Avenue.

A sanitary pump station is located in HRA 1 on Ferdon Avenue in Piermont, which feeds to the sewer outfall located in the Hudson River channel. The Village of Piermont Department of Public Works, a critical facility, is located along Piermont Avenue. Vehicle crossings over Sparkill Creek in HRA 1 include Rockland Road (owned by Village of Piermont) and Ferdon Avenue (owned by Rockland County). The historic Bridge Street bridge spans the creek as a pedestrian bridge just upstream of the Ferdon Avenue bridge (Figure 4-3). The Rockland Road bridge spans 20 feet; its North Atlantic Aquatic Connectivity Collaborative (NAACC) crossing code is xy4103504773919177, and it has an aquatic passability score of 0.99 out of 1.0: an insignificant barrier. The Ferdon Avenue bridge spans 47.5 feet; its NAACC crossing code is xy4103757973915817, and it has an aquatic passability score of 0.99 out of 1.0: an insignificant barrier. Just 45 feet upstream of the Rockland Road bridge, there is a former hydroelectric dam registered in the NYS dam inventory as the Piermont Paper Company Dam. The structure is a Hazard Code A, low hazard, dam constructed in 1910. It measures 8 feet in height, 70 feet long and has a 50-foot-wide spillway.

> The extent and depth of flooding along the lower section of Sparkill Creek through Piermont is highly dependent upon the tidal stage on the Hudson River Estuary at the time that peak flood flow occurs on Sparkill Creek.

Hydraulic analyses were conducted under a range of flood flows on Sparkill Creek and under a range of tidal conditions in the Hudson River Estuary. The analyses indicate that the severity of flooding in HRA 1 and the ability of the bridges that span Sparkill Creek to safely convey flood events without overtopping are highly dependent on the tidal stage in the Hudson River Estuary at the time when peak flow occurs on Sparkill Creek.

During low tide on the Hudson River Estuary, the 10-year flood event on Sparkill Creek inundates a section of Piermont Avenue midway between Rockland Avenue and Ferdon Avenue. Buildings in the vicinity of the intersection of Piermont Avenue and Bridge Street, including the post office, are flooded. Paradise Avenue and neighborhoods along Paradise Avenue, Liberty Street, and Ohio Street are inundated. Flooding extents and depths become more severe during the low tide, 50- and 100-year flood events. Both the Rockland Road and Ferdon Avenue bridges can safely pass up to the 100-year flow event on Sparkill Creek if the peak flow corresponds with low tide. Maps showing modeled flooding depths and extents within HRA 1 under a low-tide condition during the 10-, 50-, and 100-year flood events on Sparkill Creek are depicted in Figures 4-4, 4-5, and 4-6, respectively.

When peak flows on Sparkill Creek coincide with a high-tide event, flooding becomes much more severe. The 10-year flood event inundates nearly all of Piermont Avenue downstream of Rockland Avenue. Ferdon Avenue is flooded downstream of Rockland Avenue. The sanitary pump station on Ferdon Avenue becomes inundated. Buildings along both sides of Piermont Avenue are severely flooded. Paradise Avenue and neighborhoods along Paradise Avenue, Liberty Street, and Ohio Street are inundated with flood depths reaching 3 to 5 feet in some areas. Flooding extents and depths become more severe during the high tide, 50- and 100-year flood events. The deck of the Ferdon Avenue bridge is overtopped by flood flows during the 10-, 50-, and 100-year flood event if it corresponds with the high tide. Maps showing modeled flooding depths and extents within HRA 1 under a high-tide condition during the 10-, 50-, and 100-year flood events are depicted in Figures 4-7, 4-8, and 4-9, respectively.

Accounting for projected increases in water surface elevations on the Hudson River Estuary due to sea level rise (as discussed in Section 2.3 of this report), flooding along Sparkill Creek is greatly exacerbated. For the purpose of this analysis, Hudson River Estuary elevations used in hydraulic modeling of future flood scenarios on Sparkill Creek were increased by 18 inches over the current high-tide level modeled in the scenarios described above. This 18-inch rise represents the "medium" sea level rise scenario for the 2050s time period. Under this condition, flooding of the areas described during the normal low- and high-tide scenarios above is made more severe, even during the 10-year flood event on Sparkill Creek, including areas upstream of the Piermont Dam. Maps showing modeled flooding depths and extents within HRA 1 under a future sea level rise condition during the 10-, 50-, and 100-year flood events are depicted in Figures 4-10, 4-11, and 4-12, respectively.

Floodproofing and elevation of pumps and electrical equipment are recommended at the sanitary pump station on Ferdon Avenue to ensure that it can continue to function as required during extreme weather events and under projected sea level rise scenarios.

The Piermont Paper Company Dam at STA 52+00 was evaluated to determine its influence on flooding within HRA 1. Homes along Sparkill Creek upstream of the dam are located close to the creek, often with the rear portion of the buildings mapped as falling within the SFHA. Removal of the dam and restoration of the Sparkill Creek channel through the former impoundment upstream of the dam would result in a reduction in flood depths upstream of the dam, which would benefit properties along Piermont Avenue and Ferdon Avenue between STA 52+00 and STA 65+00. The dam does not provide significant flood storage. Its removal will not exacerbate flooding downstream of the dam.

Flood extents and depths for the 10-year flood event with and without the Piermont Paper Company Dam in place are shown in Figure 4-12a and Figure 4-12b, respectively; for the 50-year flood event in Figure 4-12c and Figure 4-12d; and for the 100-year flood event in Figure 4-12e and Figure 4-12f.

As demonstrated by sea level rise projections, it will become impractical for homes and businesses to remain at their current locations along Sparkill Creek. A generalized map showing recommendations and areas where relocation should be considered is depicted in Figure 4-13. The following recommendations are provided:

- Relocation of the Department of Public Works facility on Piermont Avenue to a location that is not prone to flooding is recommended.
- Relocations or elevations of flood-prone homes and businesses are recommended.
- Consideration should be given to a bundled relocation of flood-prone homes and businesses, the Department of Public Works facility, and other municipal buildings to a single location within the village that is outside of the SFHA and not prone to flooding.
- Removal of the Piermont Paper Company Dam and restoration of the Sparkill Creek channel through the former impoundment upstream of the dam are recommended.

3.10.6 Flooding Risk – Increased Extreme Rainfall

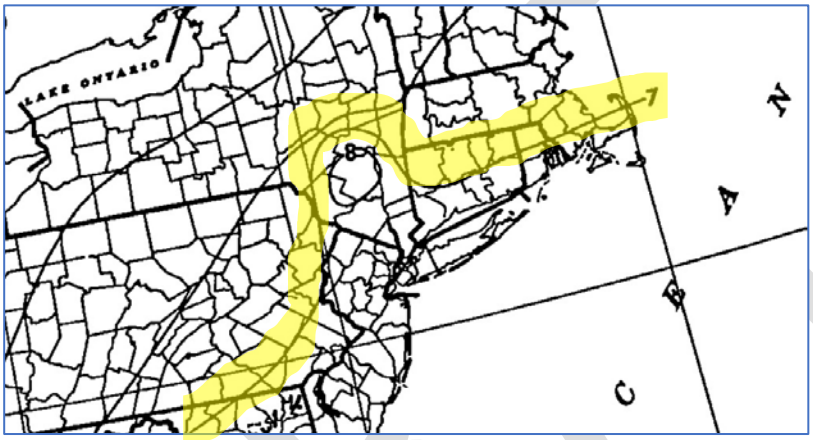
With the warming of the atmosphere, there is increased ability for the air to hold moisture, and increased rainfall has been noted in many regions. From1961 to 2014, engineers have designed culverts and drainage systems to be able to handle rainfall by using the projections

from the federal government, published in 1961, known as TP-40. The full citation of this standard reference is:

Technical Paper Number 40 – Rainfall Frequency Atlas of the United States, US Department of Commerce, Weather Bureau, May 1961.

A copy can be found at:
https://reduceflooding.com/wp-content/uploads/2018/09/TechnicalPaper_No40.pdf

An excerpt from the TP-40 rainfall atlas for the Hudson Valley area of the New York region below shows that the 100-year rainfall expected over 24 hours was 7 inches. Most of the drainage in Piermont was designed to handle this standard.



However, Cornell University and the National Weather Service have been updating the projections for heavy rains that might be expected to fall in 24 hours for a 100-year storm (a storm with a 1% chance of occurring in any given year). Cornell operates a web tool for engineers for use by engineers and designers, with rainfall projections. It is available here:

Extreme Precipitation in New York and New England, An Interactive Web Tool for Extreme Precipitation Analysis: https://precip.eas.cornell.edu/#/

The amount of rain expected in 24 hours during a 100-year storm is now expected to be 8.92 inches. This represents a 27% increase over the rainfall amount projected by the TP-40 atlas. Therefore, it is not surprising that drainage systems under roads built in previous decades are not handling the water from contemporary rainfall. In Piermont, very small streams, such as the St. John's Brook, which are not even found on County or State databases, become torrents during extreme rain events, overtopping their banks. The Erie Trail, which was constructed on

a railroad bed over 150 years ago, is experiencing drainage problems during heavy rain events, which are significantly larger than those that frequently occurred in the 19th century.

Output from the Cornell Extreme Precipitation Web Tool appear below:

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	
Location	
Latitude	41.042 degrees North
Longitude	73.918 degrees West
Elevation	30 feet
Date/Time	Mon Aug 14 2023 09:54:45 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.33	0.51	0.63	0.82	1.03	1.29	**1yr**	0.89	1.23	1.48	1.83	2.27	2.80	3.20	**1yr**	2.48	3.07	3.56	4.28	4.92	**1yr**
2yr	0.40	0.61	0.77	1.01	1.27	1.59	**2yr**	1.09	1.49	1.82	2.25	2.77	3.41	3.84	**2yr**	3.02	3.69	4.25	5.04	5.72	**2yr**
5yr	0.47	0.73	0.91	1.22	1.56	1.97	**5yr**	1.35	1.84	2.28	2.83	3.48	4.26	4.86	**5yr**	3.77	4.67	5.41	6.29	7.05	**5yr**
10yr	0.52	0.82	1.04	1.41	1.83	2.34	**10yr**	1.58	2.16	2.71	3.36	4.13	5.06	5.81	**10yr**	4.47	5.58	6.50	7.44	8.26	**10yr**
25yr	0.61	0.97	1.23	1.70	2.26	2.92	**25yr**	1.95	2.68	3.39	4.23	5.20	6.33	7.36	**25yr**	5.61	7.07	8.28	9.31	10.20	**25yr**
50yr	0.69	1.10	1.41	1.98	2.66	3.46	**50yr**	2.30	3.15	4.03	5.03	6.18	7.52	8.81	**50yr**	6.65	8.47	9.96	11.02	11.97	**50yr**
100yr	0.78	1.26	1.62	2.30	3.13	4.10	**100yr**	2.70	3.71	4.79	5.98	7.35	8.92	10.54	**100yr**	7.90	10.14	11.98	13.05	14.05	**100yr**
200yr	0.88	1.44	1.86	2.67	3.69	4.86	**200yr**	3.19	4.38	5.69	7.12	8.75	10.60	12.63	**200yr**	9.38	12.14	14.42	15.47	16.50	**200yr**
500yr	1.05	1.73	2.26	3.28	4.59	6.08	**500yr**	3.96	5.45	7.15	8.96	11.01	13.33	16.04	**500yr**	11.80	15.42	18.44	19.36	20.42	**500yr**

At the national level the federal National Oceanic and Atmospheric Administration (NOAA) has responded to the increase in extreme rainfall by replacing the old TP-40 projections with the current "Atlas 14." The Atlas 14 Precipitation Frequency Data Server (PFDS) and associated sites operated by NOAA provides the newest statistics on rates of rain over various time periods, to be used when calculating capacity for designing culverts and bridges. It can be found here:

https://toolkit.climate.gov/dashboard-noaa-atlas-14-precipitation-frequency-data-server

Output from this web tool can be found here. It indicates a projected rainfall of 8.63 inches during a 100-year storm over a 24-hour period. It also indicates a high and low range along that value, showing the amount of rain in a 24-hour 100-year storm could range between 6.38 and 11.8 inches. See table at right.

NOAA Atlas 14, Volume 10, Version 3
Location name: Piermont, New York, USA*
Latitude: 41.0413°, Longitude: -73.9152°
Elevation: 8 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.369 (0.292-0.462)	0.432 (0.342-0.543)	0.536 (0.422-0.675)	0.623 (0.488-0.790)	0.743 (0.561-0.979)	0.834 (0.615-1.12)	0.927 (0.659-1.29)	1.02 (0.694-1.47)	1.16 (0.751-1.72)	1.26 (0.797-1.91)
10-min	0.522 (0.413-0.655)	0.613 (0.485-0.769)	0.761 (0.599-0.958)	0.883 (0.692-1.12)	1.05 (0.794-1.39)	1.18 (0.872-1.59)	1.31 (0.934-1.82)	1.45 (0.983-2.08)	1.64 (1.06-2.43)	1.78 (1.13-2.70)
15-min	0.614 (0.486-0.770)	0.721 (0.570-0.905)	0.895 (0.705-1.13)	1.04 (0.814-1.32)	1.24 (0.934-1.63)	1.39 (1.02-1.87)	1.54 (1.10-2.14)	1.71 (1.16-2.44)	1.93 (1.25-2.86)	2.10 (1.33-3.18)
30-min	0.849 (0.673-1.06)	0.994 (0.787-1.25)	1.23 (0.970-1.55)	1.43 (1.12-1.81)	1.70 (1.28-2.24)	1.91 (1.40-2.56)	2.12 (1.50-2.94)	2.34 (1.58-3.34)	2.63 (1.71-3.90)	2.85 (1.81-4.32)
60-min	1.08 (0.859-1.36)	1.27 (1.00-1.59)	1.57 (1.24-1.98)	1.82 (1.42-2.30)	2.16 (1.63-2.84)	2.42 (1.78-3.25)	2.69 (1.91-3.73)	2.96 (2.01-4.24)	3.33 (2.16-4.94)	3.61 (2.28-5.47)
2-hr	1.45 (1.16-1.81)	1.68 (1.34-2.09)	2.05 (1.62-2.56)	2.35 (1.86-2.96)	2.77 (2.11-3.63)	3.10 (2.30-4.13)	3.42 (2.45-4.72)	3.77 (2.57-5.36)	4.24 (2.76-6.24)	4.60 (2.92-6.93)
3-hr	1.68 (1.35-2.09)	1.95 (1.56-2.42)	2.38 (1.90-2.96)	2.74 (2.17-3.43)	3.23 (2.48-4.21)	3.60 (2.68-4.80)	3.99 (2.87-5.49)	4.40 (3.00-6.24)	4.97 (3.25-7.30)	5.43 (3.45-8.14)
6-hr	2.10 (1.69-2.58)	2.46 (1.98-3.04)	3.05 (2.45-3.78)	3.55 (2.83-4.42)	4.22 (3.25-5.49)	4.74 (3.56-6.29)	5.27 (3.83-7.26)	5.87 (4.02-8.28)	6.74 (4.42-9.83)	7.44 (4.75-11.1)
12-hr	2.50 (2.03-3.06)	3.01 (2.44-3.69)	3.85 (3.11-4.73)	4.54 (3.65-5.62)	5.50 (4.26-7.12)	6.21 (4.70-8.22)	6.97 (5.11-9.60)	7.86 (5.40-11.0)	9.16 (6.02-13.3)	10.2 (6.56-15.2)
24-hr	2.88 (2.36-3.50)	3.54 (2.89-4.31)	4.61 (3.76-5.64)	5.51 (4.46-6.77)	6.74 (5.26-8.68)	7.65 (5.84-10.1)	8.63 (6.38-11.8)	9.79 (6.75-13.6)	11.5 (7.59-16.6)	13.0 (8.33-19.1)
2-day	3.28 (2.71-3.96)	4.04 (3.33-4.88)	5.27 (4.33-6.40)	6.30 (5.14-7.69)	7.72 (6.06-9.88)	8.77 (6.73-11.5)	9.90 (7.35-13.5)	11.2 (7.78-15.5)	13.2 (8.76-19.0)	15.0 (9.63-21.8)
3-day	3.58 (2.97-4.31)	4.39 (3.64-5.29)	5.71 (4.71-6.90)	6.80 (5.57-8.26)	8.31 (6.55-10.6)	9.42 (7.26-12.3)	10.6 (7.92-14.4)	12.1 (8.37-16.6)	14.2 (9.43-20.3)	16.1 (10.4-23.3)
4-day	3.86 (3.21-4.62)	4.70 (3.90-5.64)	6.07 (5.02-7.31)	7.21 (5.92-8.73)	8.78 (6.94-11.2)	9.94 (7.68-12.9)	11.2 (8.36-15.2)	12.7 (8.82-17.4)	14.9 (9.92-21.2)	16.9 (10.9-24.4)
7-day	4.57 (3.83-5.46)	5.48 (4.58-6.55)	6.97 (5.80-8.35)	8.20 (6.78-9.88)	9.90 (7.87-12.5)	11.2 (8.66-14.4)	12.5 (9.37-16.8)	14.1 (9.85-19.3)	16.5 (11.0-23.3)	18.5 (12.0-26.7)
10-day	5.26 (4.42-6.26)	6.22 (5.22-7.41)	7.79 (6.51-9.30)	9.10 (7.55-10.9)	10.9 (8.68-13.7)	12.2 (9.50-15.7)	13.6 (10.2-18.2)	15.3 (10.7-20.8)	17.7 (11.8-24.9)	19.7 (12.8-28.3)
20-day	7.40 (6.26-8.73)	8.48 (7.18-10.0)	10.3 (8.64-12.2)	11.7 (9.81-14.0)	13.8 (11.0-17.1)	15.3 (11.9-19.4)	16.9 (12.6-22.1)	18.6 (13.1-25.1)	21.0 (14.1-29.3)	22.9 (14.9-32.6)
30-day	9.21 (7.83-10.8)	10.4 (8.82-12.2)	12.3 (10.4-14.5)	13.9 (11.7-16.5)	16.1 (13.0-19.9)	17.8 (13.9-22.4)	19.5 (14.6-25.3)	21.3 (15.0-28.5)	23.6 (15.9-32.8)	25.4 (16.5-36.0)
45-day	11.5 (9.81-13.4)	12.8 (10.9-15.0)	14.9 (12.6-17.5)	16.6 (14.0-19.7)	19.0 (15.3-23.3)	20.9 (16.4-26.1)	22.8 (17.0-29.2)	24.5 (17.4-32.8)	26.8 (18.1-37.1)	28.5 (18.6-40.3)
60-day	13.4 (11.5-15.6)	14.8 (12.7-17.3)	17.0 (14.5-20.0)	18.9 (16.0-22.3)	21.5 (17.3-26.2)	23.5 (18.4-29.1)	25.4 (19.0-32.5)	27.2 (19.4-36.3)	29.5 (20.0-40.7)	31.1 (20.3-43.9)

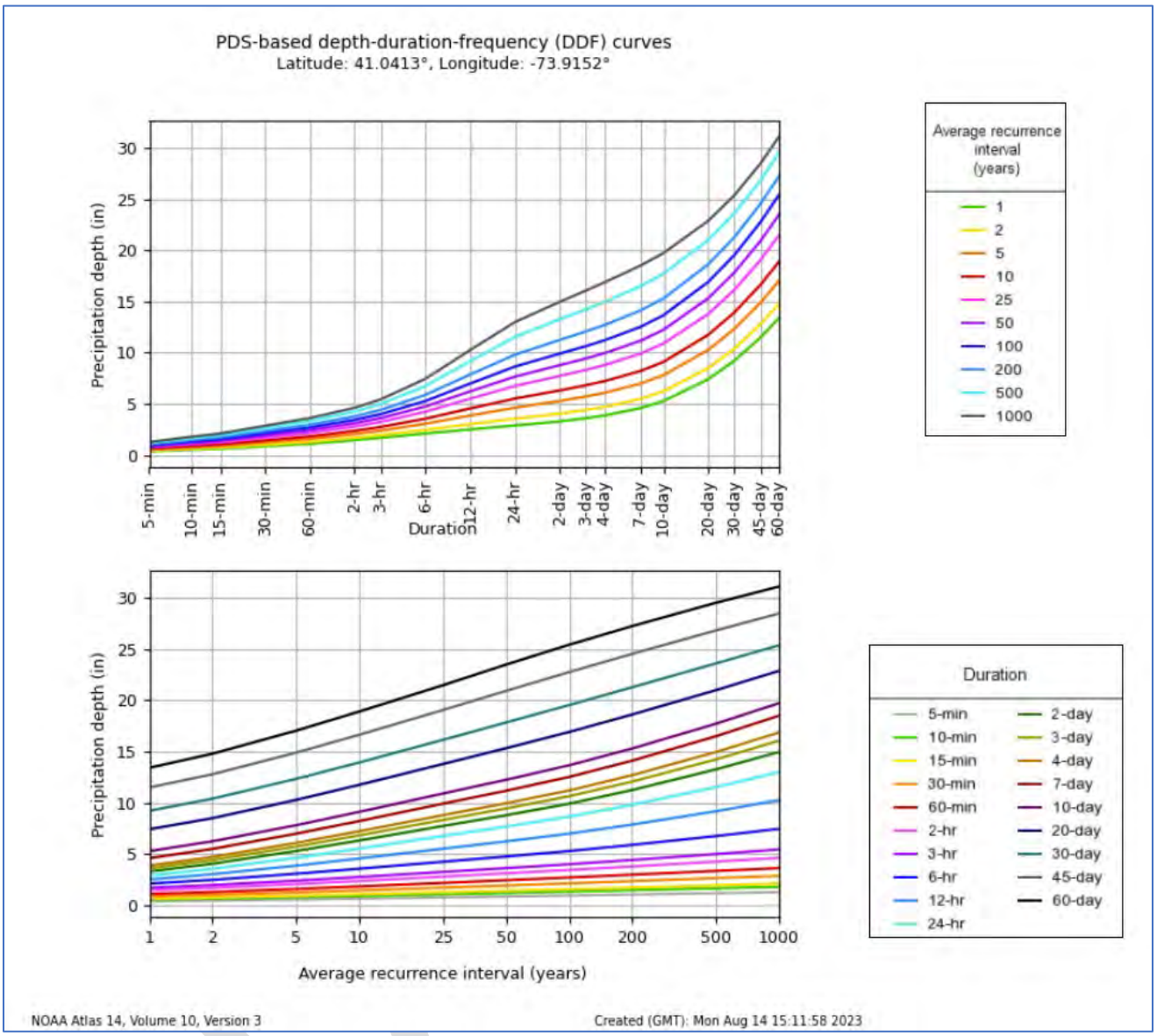
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

On the next page, the NOAA Atlas 14 tool produces a graph showing the various depths of rainfall projections for various storms, for different sized storms and over different time periods. This graphic is useful for understanding how much potential rain could fall on the Village of Piermont during extreme rain events.

Output from NOAA Atlas 14 for Piermont, NY



3.10.7 All Hazards – Rockland County Hazard Mitigation Plan

Rockland County Hazard Mitigation Plan, 2018 https://www.rocklandhmp.com/final-plan/

Section 9.15 Annex, Village of Piermont
https://www.rocklandhmp.com/wp-content/uploads/2020/05/Section-9.15-Piermont-V-Final.pdf

Rockland County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of the Hazard Mitigation Plan. Events that have occurred in the County from 2008 to 2018 were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below.

Hazard Event History

Dates of Event	Event Type (Disaster Declaration if applicable)	Rockland County Designated?	Summary of Damages/Losses
March 13-31, 2010	Severe Storms and Flooding DR-1899	Yes	Debris removed from Village property and along the public right of way Estimated overall cost = $14,000
December 26-27, 2010	Severe Winter Storm and Snowstorm DR-1957	Yes	Multiple roads and transportation routes were closed or severely compromised; limiting access to emergency services Estimated overall cost = $24,000
August 25 – September 5, 2011	Hurricane Irene DR-4020	Yes	Multiple roads in Village closed and power outages extended for several days; Debris removed from Village property. Estimated overall cost = less $1 million
October 27 – November 8, 2012	Hurricane Sandy DR-4085	Yes	Multiple roads in Village closed and power outages extended for several days; Debris removed from Village property. Estimated overall cost = less $1 million

Notes:
EM *Emergency Declaration (FEMA)*
FEMA *Federal Emergency Management Agency*
DR *Major Disaster Declaration (FEMA)*
N/A *Not applicable*

The table below summarizes the hazard risk/vulnerability rankings of potential natural hazards for the Village of Piermont

Hazard Risk / Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard[a,c]	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking[b]
Drought	Damage estimate not available	Frequent	39	High
Earthquake	100-Year GBS: → $0 500-Year GBS: → $760,345 2,500-Year GBS: → $11,500,891	Occasional	32	High
Extreme Temperature	Damage estimate not available	Frequent	27	Medium
Flood	1% Annual Chance: → $196,328,000	Frequent	54	High
Landslide	RCV Exposed: → $0	Rare	6	Low
Severe Storm	100-Year MRP: → $193,357 500-year MRP: → $1,578,556 Annualized: → $22,383	Frequent	48	High
Winter Storm	1% GBS: → $3,750,580 5% GBS: → $18,752,900	Frequent	51	High
Wildfire	Estimated Value in the WUI: → $409,446,000	Frequent	54	High

Notes:

a. Building damage ratio estimates based on FEMA 386-2 (August 2001)

b. The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30+
Low = Total hazard risk ranking below 20

c. Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.

d. Loss estimates for the flood and earthquake hazards represent both structure and contents.

e. The HAZUS-MH earthquake model results are reported by Census Tract.

The following table summarizes the NFIP statistics for the Village of Piermont.

National Flood Insurance Program (NFIP Summary)

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Village of Piermont	129	97	$4,521,489	12	1	39

Source: FEMA Region 2, 2016

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 06/30/2016. The total number of repetitive loss properties does not include the severe repetitive loss properties. The number of claims represents claims closed by 06/30/16.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility. A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case. Number of policies and claims and claims total exclude properties located outside county boundary, based on provided latitude and longitude.

Multi-Hazards (MH) damage estimates (if any) to each critical facility as a result of the 1-percent annual chance flood event.

Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event	
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage
Piermont P.O.	Post Office	X	X	0	0
Fire Department Boathouse	Fire	X	X	-	-
Library	Library		X	-	-
Piermont DPW	DPW		X	-	-

Source: Hazus-MH 3.2, Rockland County

National Flood Insurance Program

Flood Vulnerability Summary

The Village of Piermont does not maintain lists or inventories of properties that have been damaged by floods. The FPA indicated that is done privately by the homeowner and insurance company. During recent flooding events, approximately 100 structures were damaged in the Village. However, substantial damage estimates were not made for those properties as the Village does not conduct them[1]. Currently, there is no interest in home acquistions within the Village; however, there are several homeowners who are interested in elevation but have pursued it independently. Funding sources for homeowners who wish to mitigate their properties would be from the property owner, ICC, and grants.

Resources

The Village Floodplain Administrator (FPA) is the sole person assuming the responsibilities of floodplain administration, but he does have support from the building inspector. NFIP administration services and functions provided to residents of the Village includes permit review, issuing floodplain development permits for any land use activity or substantial improvement to an existing structure. The Village requires the homeowner to have substantial damage estimates prepared if they are applying for a building permit for a home in the floodplain to determine if the home needs to meet current NFIP standards. Additionally, the Village provides education and outreach regarding flood hazards/risk to the community through planning board applications and brochures at the Village Clerk's office.

[1] Trustee Nathan Mitchell has indicated in August 2023 that the Village Building Department now conducts such substantial damage estimates. This statement from the County All Hazards Plan reflects the situation at the time of its interviews conducted prior to adoption in 2018.

The FPA indicated that there are no barriers to running an effective floodplain management program and he feels adequately supported and trained to fulfill his role as the municipal FPA. The FPA is a Certified Floodplain Manager and maintains that certification by obtaining continuing education credits. He would consider attending additional education and/or training if offered locally.

Compliance History

The Village is currently in good standing with the NFIP. A compliance audit has not been completed for the Village in the past 10 years.

Regulatory

The Village has adopted the FEMA ABFE mapping. Additionally, the Village requires that almost all land disturbance activities go before the Planning Board for site plan approval. During this time, the engineering office reviews the application for local and NFIP compliance. The Village has made the initial application for the Community Rating System (CRS) by sending the "intent to join" letter. They are waiting for follow up from FEMA as to scheduling the Community Assistance Visit and audit for floodplain regulations.

Mitigation Strategy and Prioritization

Status of Previous Mitigation Actions

Action Number	2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
Old PV-1	Drainage improvements to north parking lot and upgrade outfall	Engineering	In progress	1. 10% complete 2. Developed schematic plans for grant actions (locally funded). 3. Further action pending additional funding.	Include in 2018 HMP	Secure funding
Old PV-2	Construct check valve and berm near Paradise Ave. outfall to prevent tidal backflow into residential areas.	Engineering	In progress	1. 10% complete 2. Developed schematic plans for grant actions (locally funded). 3. Further action pending additional funding.	Include in 2018 HMP	Secure funding
Old PV-3	Drainage improvements to Erie Path down to Hudson Terrace	Engineering	In progress	1. 10% complete 2. Developed schematic plans for grant actions (locally funded). 3. Further action pending additional funding.	Include in 2018 HMP	Secure funding
Old PV-4	Construct check valve on outfall by Bridge Street to prevent tidal backflow	Engineering	In progress	1. 10% complete 2. Developed schematic plans for grant actions (locally funded). 3. Further action pending additional funding.	Include in 2018 HMP	Secure funding
Old PV-5	Drainage improvements to Tweed Blvd. to Route 9W	Engineering	In progress	1. 10% complete 2. Developed schematic plans for grant actions (locally funded). 3. Further action pending additional funding.	Include in 2018 HMP	Secure funding
1.B	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	CPG member; Village Trustee	In progress	1. 10% complete 2. The item is being discussed. 3. No funding secured	Include in 2018 HMP	Actively work to complete/update comprehensive plans; secure funding
2.A	Expand and disseminate GIS and other hazard information on the internet.	CPG member; Village Trustee	No Progress	1. 0% complete 2. The item is being discussed. 3. No funding secured	Include in 2018 HMP	Seek funding and resources

Action Number	2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
Old PV-6	Work with local municipalities to pursue the development of an Emergency Notification System call perimeter for high risk locations of natural hazards with delineable hazard areas. Rockland County staff will make aerial mapping available, along with GIS mapping for natural hazards that was completed as part of the hazard mitigation planning project. The County will also facilitate the utilization of the Emergency Notification System by municipalities.	CPG member; Town Supervisor	Complete	Rockland County has mapping services available to municipalities through their on-line web map portal. Disaster Land is a web-based emergency management software system; municipalities are granted access to it; flood inundation zones are incorporated into it so Emergency Coordinator from the municipality has access to it 24/7 on smart phone/laptop/desktop. The County utilizes NY-Alert and CodeRed (the backup to NY-Alert) for emergency notifications (all Towns and Villages have access to it; New Hempstead not using CodeRed). There is a mailbox for known inundation areas to target outreach as needed; and have license for FEMA's IPAWS to issue notifications.	Discontinue	Complete
Old PV-7	Hold periodic workshops regarding zoning and planning issues that arise regarding natural hazards and hazard mitigation.	CPG member; Village Trustee	Complete	1. 100% complete 2. LWRP and PWRC holds workshops throughout the year 3. Local budget	Discontinue	Complete
4.F	Continue to implement best management practices for floodplain areas.	CPG member; Village Trustee	Complete	1. 100% complete 2. Continually looking for best management practices during new development and redevelopment 3. Local budget	Discontinue	Action no longer required – standard practice

Action Number	2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
4.G	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	CPG member; Village Trustee	In progress	1. 10% complete 2. The item is being discussed. 3. No funding secured	Include in 2018 HMP	Initiate outreach to property owners to discuss potential mitigation actions; secure funding

Action Number	2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
4.J	Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	CPG member; Village Trustee	In progress	1. 10% complete 2. Some discussion with RC Highway Department regarding improvements along Tweed Boulevard to reduce flooding along Route 9W. No substantial progress made 3. Local budget	Include in 2018 HMP	Continue to reach out to RC Highway Department to discuss further actions

Action Number	2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
13.A	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	CPG member; Village Trustee	No Progress	1. 0% complete 2. The item was not discussed. 3. No funding secured	Include in 2018 HMP	Updated critical facility specific actions for flooding added for 2018 Update; secure funding
11.B	Review existing emergency response plans for enhancement opportunities: work with social support agencies, homeowners associations and general public to develop and implement monitoring and warning systems focused on vulnerable populations and provision of adequate shelter facilities.	CPG member; Village Trustee	Complete	1. 100% complete 2. CERT Team and Fire Dept. review and enhance plans for response and recovery 3. Local budget	Discontinue	Complete

Action Number	2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
Old PV-8	Public awareness program on hazards, prevention and mitigation: assist CPG Chairperson in maintenance of mitigation planning web presence; assist CPG Chairperson in preparation of annual hazards and mitigation planning fact sheet and its distribution; assist CPG chairperson in preparation of hazards survey; periodic discussion of hazard mitigation and the mitigation plan at other regular local meetings; use of annual flyers, newsletters, advertisements, or radio/TV announcements, etc. at the discretion of the jurisdiction (incorporating as much free information as possible from the FEMA publications warehouse and other appropriate sources0.	RCOFES lead with direct participation and involvement form each jurisdiction's CPG member	Complete	1. 100% complete 2. Fire Dept. and Police Dept. provide posters at City Hall for Village residents ref. hazard prevention and mitigation 3. Local budget	Discontinue	Complete
Old PV-9	Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	Each jurisdictional CPG member	In progress	1. 50% complete 2. Code review performed after Hurricane Sandy. Adopted ABFE elevations. Height restrictions revisited based on need to balance building higher versus limitation on building height. 3. Local budget	Include in 2018 HMP	Look into new codes to strengthen CRS application (i.e. cumulative improvement thresholds)
Old PV-10	Code enforcement: enforcement of NYS and local building codes	Each jurisdictional CPG member	Complete	1. 100% complete 2. Building codes enforced 3. Local budget	Discontinue	Action no longer required – standard practice

Action Number	2010 Mitigation Action	Responsible Party	Status (In progress, No progress, Complete)	Describe Status 1. Please describe what was accomplished and indicate % complete. 2. If there was no progress, indicate what obstacles/delays encountered? 3. If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2018 HMP or Discontinue)	Describe Next Step 1. If including action in the 2018 HMP, revise/reword to be more specific (as appropriate). 2. If discontinue, explain why.
Old PV-11	Update/revise floodplain management ordinance to comply with latest FEMA regulations	Village Board, Village Attorney	Complete	1. 100% complete 2. Ordinance updated/revised 3. Local budget	Discontinue	Completed
Old PV-12	Update/review floodplain management ordinances to be consistent with potential future new FIRMs	Village Board, Village Attorney	Complete	1. 100% complete 2. Ordinance updated/revised 3. Local budget	Discontinue	Completed
Old PV-13	Require staff involved in floodplain management and ordinance enforcement to become Certified Floodplain Managers (CFMs)	Building Department/Village Engineer	Complete	1. 100% complete 2. Village Engineer is CFM 3. Local budget	Discontinue	Completed
Old PV-14	Join the Community Rating System (CRS)	Village Board	In progress	1. 50% 2. Notification to FEMA for intent to join was made. 3. Local budget	Include in 2018 HMP	Waiting to hear from FEMA regarding good standing as a NFIP community and loss claims.

Proposed Hazard Mitigation Initiatives for the 2018 Hazard Mitigation Plan Update

The Village of Piermont participated in a mitigation action workshop in February 2017. The table below summarizes the comprehensive range of specific mitigation initiatives the Village of Piermont would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide range of activities and mitigation measures selected.

For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing actions as 'High', 'Medium', or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
Piermont-1 (Old PV-1)	Drainage improvements to north parking lot and upgrade outfall	Existing	Flooding, Severe Storm	1, 2, 4	Engineering	High	High	Municipal budget; Grant funding	DOF	Low	SIP	SP
Piermont-2 (Old PV-2)	Construct check valve and berm near Paradise Ave. outfall to prevent tidal backflow into residential areas.	Existing	Flooding, Severe Storm	1, 2, 4	Engineering	High	High	Municipal budget; Grant funding	DOF	Medium	SIP	SP
Piermont-3 (Old PV-3)	Drainage improvements to Erie Path down to Hudson Terrace	Existing	Flooding, Severe Storm	1, 2, 4	Engineering	High	High	Municipal budget; Grant funding	DOF	Medium to High	SIP	SP
Piermont-4 (Old PV-4)	Construct check valve on outfall by Bridge Street to prevent tidal backflow	Existing	Flooding, Severe Storm	1, 2, 4	Engineering	High	High	Municipal budget; Grant funding	DOF	Medium	SIP	SP
Piermont-5 (Old PV-5)	Drainage improvements to Tweed Blvd. to Route 9W	Existing	Flooding, Severe Storm	1, 2, 4	Engineering	High	High	Municipal budget; Grant funding	DOF	High	SIP	SP
Piermont-6 (old 1.B)	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	N/A	All Hazards	1, 2, 3, 5, 7	CPG member; Village Trustee	Medium	Low	Municipal budget	Ongoing	Low to Medium	LPR, EAP	PI, PR
Piermont-7 (old 2.A)	Expand and disseminate GIS and other hazard information on the internet.	N/A	All Hazards	All	CPG member; Village Trustee	Medium	Medium	Municipal budget; Grant funding	DOF	Low to Medium	EAP	PI
Piermont-8 (old 4.G)	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties.	Existing	Flooding, Severe Storm	1, 2, 3, 5, 7	CPG member; Village Trustee	High	Low	Municipal Budget	Ongoing	High	LPR, EAP	PR, PI
Piermont-9 (old 4.J)	Develop specific mitigation solutions for floodprone road systems (roads, bridges,	Existing	Flooding, Severe Storm	1, 2, 4	CPG member; Village	High	High	Municipal budget; County	DOF	High	SIP	SP

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
	intersections, drainage, etc.) under the leadership of County DPW.				Trustee			funding; Grant funding				
Piermont-10 (old 13.A)	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards, and pursue potential mitigation opportunities to protect these sites as funding becomes available.	Existing	All Hazards	1, 2, 5, 7	CPG member; Village Trustee	Medium	Low	Municipal budget	Short	High	LPR	PR
Piermont-11 (Old PV-9)	Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	N/A	All	1, 2, 3, 5, 7	Jurisdictional CPG member	Medium	Low	Municipal budget	Ongoing	Low	LPR	PR
Piermont-12 (Old PV-14)	Join the Community Rating System (CRS)	New/Existing	Flood	1, 2, 3, 7	Village Board; Building Department	High	Medium	Municipal budget; Grant funding	Short	High	EAP	PI
Piermont-13	Improve emergency communication in the Village (Resiliency Roadmap recommendation)	N/A	All Hazard	All	Village Board	High	Medium	Municipal budget	Short	High	LPR	PR
Piermont-14	Development a comprehensive emergency management plan (Resiliency Roadmap recommendation)	N/A	All Hazard	All	Planning Board	High	Medium	Municipal budget	DOF	High	LPR	PR
Piermont-15	Initiate an introduction meeting with local utilities to improve resilience (Resiliency Roadmap recommendation)	N/A	All Hazard	1, 2, 4, 6	Village Board	High	Low	Municipal budget	Short	High	SIP	PP
Piermont-16	Establish a permanent Flooding and Storm Resilience Committee (Resiliency Roadmap recommendation)	N/A	All Hazard	1, 2, 3, 4, 6	Village Board	High	Low	Municipal budget	Short	High	LPR	PR
Piermont-17	Critical facilities in the Village are vulnerable to the flood hazard as per the Rockland County HMP risk assessment. - Piermont Post Office - Fire Department Boathouse - Public Library - Piermont DPW For the facilities that the Village has jurisidction, the Village will evaluate and determine next actions in terms of a feasible and cost-effective mitigation acton. For the facilities that the Village does not have jurisdiction over this facility to mitigate, the Village will notify the facility manager/operator regarding the flood vulnerability, potential mitigation actions to reduce flood losses and potential funding sources for implementation. The owners/operators will need to evaluate and determine next actions in terms of a feasible and cost-effective mitigation acton. The Village will inform the owners/operators that NYS requires mitigation address the 500-year flood event or "worst damage scenario". Potential mitigation actions may include elevation of structure or critical mechanics, relocate critical records to higher ground within building or relocate facility outside of the floodplain.	Existing	Flood	1, 2, 4, 6	Post Office with support from the Village Board	High	Low	Municipal budget	Short	High	SIP	PP
Piermont-18	Install breakwaters at Fire Department Boathouse; Investigate replacing existing boathouse doors with heavy duty doors.	Existing	Flood	1, 2, 4, 6	Village Board	High	High	Municipal budget	Short (DOF)	High	SIP	PP

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
Piermont-19	Elevate the electrical components of the DPW to protect up to the 500-year flood elevation.	Existing	Flood	1, 2, 4, 6	Village Board	High	High	Municipal budget	Short (DOF)	High	SIP	PP

Notes:

Not all acronyms and abbreviations defined below are included in the table.

**Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.*

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued in 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued in 2015)

Timeline:

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< $10,000
Medium	$10,000 to $100,000
High	> $100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< $10,000
Medium	$10,000 to $100,000
High	> $100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High	Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- *Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.*
- *Structure and Infrastructure Project (SIP) - These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.*
- *Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.*
- *Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities*

CRS Category:

- *Preventative Measures (PR) - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.*
- *Property Protection (PP) - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.*
- *Public Information (PI) - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.*
- *Natural Resource Protection (NR) - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.*
- *Structural Flood Control Projects (SP) - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.*
- *Emergency Services (ES) - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities*

Summary of Prioritization Actions

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
Piermont-1 (Old PV-1)	Drainage improvements to north parking lot and upgrade outfall	1	1	1	1	0	1	-1	1	1	1	0	0	1	0	8	Low
Piermont-2 (Old PV-2)	Construct check valve and berm near Paradise Ave. outfall to prevent tidal backflow into residential areas.	1	1	1	1	0	1	-1	1	1	1	0	0	1	0	8	Medium
Piermont-3 (Old PV-3)	Drainage improvements to Erie Path down to Hudson Terrace – *old system, residential area, risk of flooding to the homes*	1	1	1	1	0	1	-1	1	1	1	0	0	1	0	8	Medium – High
Piermont-4 (Old PV-4)	Construct check valve on outfall by Bridge Street to prevent tidal backflow	1	1	1	1	0	1	-1	1	1	1	0	0	1	0	8	Medium
Piermont-5 (Old PV-5)	Drainage improvements to Tweed Blvd. to Route 9W *issues occur every year; needs to be cleaned constantly, if not cleared then area floods*	1	1	1	1	0	1	-1	1	1	1	0	0	1	0	8	High
Piermont-6 (old 1.B)	Ensure that local comprehensive plans incorporate natural disaster mitigation techniques through a courtesy review or draft plans by the County Planning Department.	1	1	1	1	1	0	1	0	0	1	1	0	0	0	8	Low to Medium
Piermont-7 (old 2.A)	Expand and disseminate GIS and other hazard information on the internet.	1	1	1	1	0	0	1	0	0	1	1	0	0	0	7	Low to Medium
Piermont-8 (old 4.G)	Identify and document repetitively flooded properties. Work with owners to explore mitigation opportunities for repetitively flooded properties, and if appropriate and feasible, carry out acquisition, relocation, elevation and floodproofing measures to protect these properties. – *doing this already for the CRS program*	1	1	1	1	0	0	1	0	1	1	1	0	1	0	9	High
Piermont-9 (old 4.J)	Develop specific mitigation solutions for floodprone road systems (roads, bridges, intersections, drainage, etc.) under the leadership of County DPW.	1	1	1	1	0	0	0	0	1	1	1	0	1	0	8	High
Piermont-10 (old 13.A)	Determine the year built and level of protection for critical emergency facilities and shelters to highlight structures built before codes and standards were put in place to provide some degree of protection from natural hazards, and pursue potential mitigation opportunities to protect	1	1	1	1	0	0	0	0	1	1	1	0	1	0	8	High

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	these sites as funding becomes available.																
Piermont-11 (Old PV-9)	Code update: review existing local codes and ordinances against the identified hazards to determine whether there needs to be any amendments to address identified hazards and, where a need is identified; modify/amend the codes/ordinances as applicable.	1	1	1	1	0	0	0	0	1	1	1	0	1	0	8	Low
Piermont-12 (Old PV-14)	Join the Community Rating System (CRS) *intend to join and waiting to hear back from CRS*	1	1	1	1	0	0	1	0	1	1	1	0	0	0	8	High
Piermont-13	Improve emergency communication in the Village (Resiliency Roadmap recommendation)	1	1	1	1	0	1	0	0	1	1	1	1	1	0	10	High
Piermont-14	Development a comprehensive emergency management plan (Resiliency Roadmap recommendation)	1	1	1	1	0	1	0	0	1	1	1	0	1	0	9	High
Piermont-15	Initiate an introduction meeting with local utilities to improve resilience (Resiliency Roadmap recommendation)	1	1	0	0	1	0	0	0	0	1	1	1	1	0	7	High
Piermont-16	Establish a permanent Flooding and Storm Resilience Committee	1	1	0	1	1	0	0	0	0	1	1	1	1	0	8	High

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	(Resiliency Roadmap recommendation)																
Piermont-17	Critical facilities in the Village are vulnerable to the flood hazard as per the Rockland County HMP risk assessment. - Piermont Post Office - Fire Department Boathouse - Public Library - Piermont DPW For the facilities that the Village has jurisidction, the Village will evaluate and determine next actions in terms of a feasible and cost-effective mitigation acton. For the facilities that the Village does not have jurisdiction over this facility to mitigate, the Village will notify the facility manager/operator regarding the flood vulnerability, potential mitigation actions to reduce flood losses and potential finding sources for implementation. The owners/operators will need to evaluate and determine next actions in terms of a feasible	1	1	1	1	0	1	0	0	0	1	0	0	0	0	6	High

Mitigation Action/Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
	and cost-effective mitigation acton. The Village will inform the owners/operators that NYS requires mitigation address the 500-year flood event or "worst damage scenario". Potential mitigation actions may include elevation of structure or critical mechanics, relocate critical records to higher ground within building or relocate facility outside of the floodplain.																
Piermont-18	Install breakwaters at Fire Department Boathouse; Investigate replacing existing boathouse doors with heavy duty doors.	1	1	1	1	0	1	0	0	0	1	0	1	1	0	8	High
Piermont-19	Elevate the electrical components of the DPW to protect up to the 500-year flood elevation.	1	1	1	1	0	1	0	0	0	1	0	1	1	0	8	High

The Hazard Mitigation Plan contains a project description for each of the above projects.

3.10.8 Extreme Heat

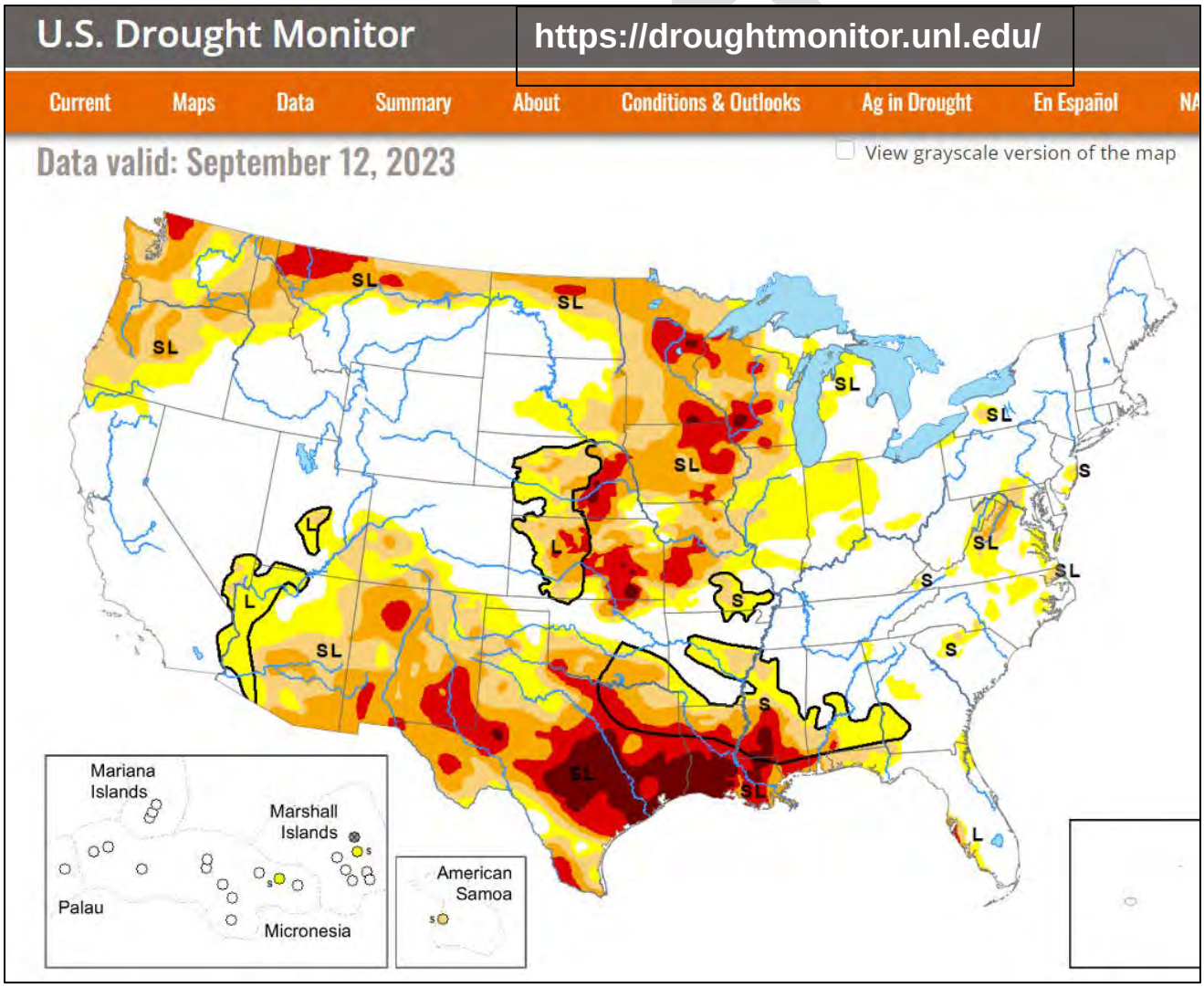
The following section is based on the report "Observed and Projected Climate Change in New York State: An Overview Developed for the Community Risk and Resiliency Act (CRRA) Drafting Teams, Final – 12/31/15." The report contains the following predictions for increasing numbers of heat waves per year, with longer durations, in the coming decades. The table below contains projection for Climate Region2 which includes areas west of the Hudson River to Port Jervis.

4. Port Jervis (Region 2). Full range of changes in extreme events: Low Estimate (10th Percentile), Middle Range (25th – 75th Percentile), High Estimate (90th Percentile).

	Extreme event	Baseline	2020s	2050s	2080s
Heat Waves & Cold Events	Number of days per year with maximum temperature exceeding				
	90°F	12	16 (19 to 25) 27	24 (31 to 47) 56	31 (38 to 77) 85
	95°F	2	2 (2 to 5) 10	3 (5 to12) 20	4 (7 to 28) 39
	Number of heat waves per year	1	2 (3 to 3) 4	3 (4 to 6) 8	4 (5 to 9) 9
	average duration	4	4 (5 to 5) 5	5 (5 to 6) 6	5 (5 to 7) 8
	Number of days per year with min. temp. ≤ 32°F	138	106 (108 to 116) 120	79 (86 to 100) 108	59 (65 to 89) 101
Intense Precipitation	Number of days per year with rainfall exceeding				
	1 inch	12	11 (12 to 13) 14	12 (13 to 14) 15	12 (13 to 15) 16
	2 inches	2	2 (2 to 2) 3	2 (2 to 3) 3	1 (2 to 3) 3

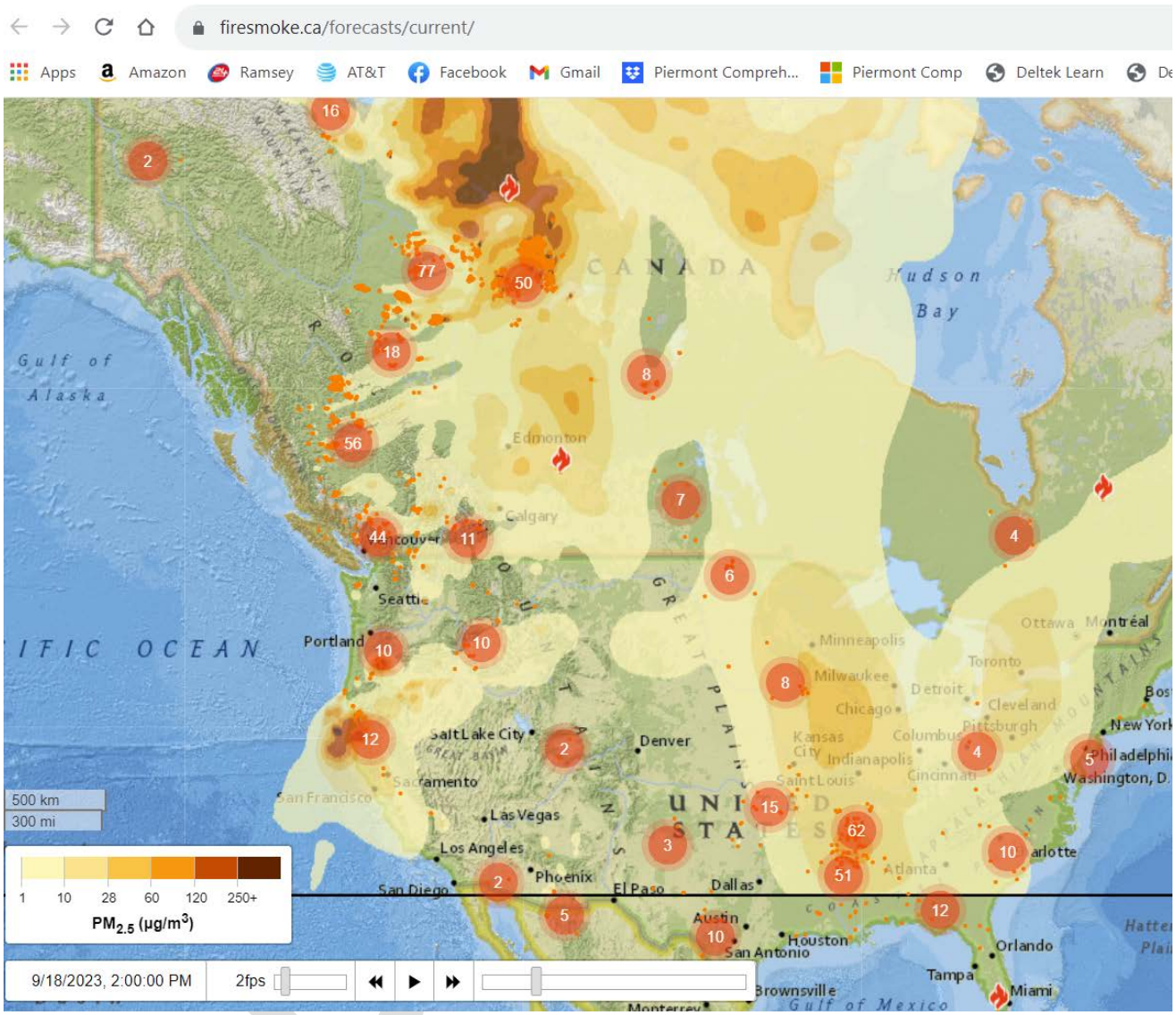
Under the high estimate, it is projected that by the 2050s, there will be 20 days per year with temperatures 95 degrees or higher. The Hazard Mitigation Plan has indicated that extreme temperatures and drought are hazards that can occur frequently in Piermont. In the early summer of 2023, dry forest conditions and forest fires in Canada, exacerbated by warmer conditions, created widespread smoke with fine particulate matter pollution throughout the Hudson Valley region. Piermont is expected to continue to be affected by these global and regional higher temperature induced problems. At the time of this writing, various regions outside of the Hudson Valley are experiencing drought conditions and wildfire smoke; however, those situations will likely come around to affect us in future years for varying time periods.

The graphic below illustrates current drought conditions in the United States on September 12, 2023.



The graphic below indicates the location of wildfires and relate fine particulate matter smoke pollution, as of September 18, 2023 at 2:00 PM.

https://firesmoke.ca/forecasts/current/



3.11 Climate Smart Baseline

Climate Smart Certified Community

In February 2011, the Village of Piermont pledged to join the 384[1] Climate Smart communities across the State of New York. In September 2019, the Village was designated as one of 108 Bronze certified Climate Smart Communities. In order to receive this designation, the Village had to complete various actions to earn at least 120 points, as outlined by the Climate Smart Communities (CSC) Certification Action Checklist[2]. The Village earned 134 points through 23 completed actions.

1. Climate Smart Community Checklist

The CSC Certification Action Checklist has been revised since the designation of the Village in 2019. **Table X** below outlines the certification actions set out for the program today, and shows the Village of Piermont's completed actions as Climate Smart Community, as well as those yet to be accomplished.

The "Action Name" column in the table reflects the names of the actions as designated by the Climate Smart Communities Certification Program. The "PE" in this column stands for pledge elements which are broader categories that the actions are grouped under. The points column provides the value of points awarded for completion of each of the listed actions. Some of the actions have ranges of points, depending on depth of completion, or number of related subtasks completed for the action.

The "Status" column refers to the status of the action for the Village of Piermont. Actions already completed as of the 2019 submission and part of Piermont's current designation as a Climate Smart Community are noted with a "C" and colored in green. Actions designated with an "R" and colored in orange are "Recommended Next Steps" for the Village to consider undertaking. Actions designated with an "A" and colored in white are Aspirational Steps that may be revisited in the future, as they are a lower priority for completion than those indicated as recommended in green. Additionally, the "Type" column provides information regarding the action in terms of whether it is a mandatory/priority for the CSC Certification program, as well as if there are opportunities for funding that can be further explored.

[1] Participating Communities (ny.gov)
[2] Actions (ny.gov)

Table X: Certification Actions

Action Name	Points	Type	Status	Explanation
PE1: Build a climate-smart community.				
PE1 Action: CSC Task Force	20	Mandatory	C	As of February 6, 2019, the Board of Trustees voted to approve the Community Sustainability Task Force.
PE1 Action: CSC Coordinator	10	Mandatory	C	Previously designated as Marcy Denker. Appears a new coordinator has not been established.
PE1 Action: National/Regional Climate Program	3		R	Rockland County is registered as a CSC, NYSERDA Clean Energy Communities.
PE1 Action: Partnerships with Other Entities	3		R	Consider joining the Hudson River Watershed Alliance
PE2: Inventory emissions, set goals, and plan for climate action.				
PE2 Action: Government Operations GHG Inventory	16	Priority, CSC Grants	C	Previously completed in 2019 with 2014 data. Updated via the 2022 Summary provided later in this document.
PE2 Action: Community GHG Inventory	16	Priority, CSC Grants	C	Previously completed using the Mid-Hudson Regional Data from 2010. Update may not be necessary.
PE2 Action: Government Operations Climate Action Plan	12 - 16	Priority, CSC Grants	A	
PE2 Action: Community Climate Action Plan	16	Priority, CSC Grants	A	
PE3: Decrease energy use.				
PE3 Action: Government Building Energy Audits	8 - 16	Priority, Revised Q4 2021	A	
PE3 Action: Interior Lighting Upgrades	1 - 5		R	Installing energy efficient lights throughout government buildings.

Action Name	Points	Type	Status	Explanation
PE3 Action: HVAC Upgrades	1 - 5		A	
PE3 Action: Water-efficient Fixtures	1 - 4		C	Aerators were installed on the faucets in all Piermont government buildings in 2018.
PE3 Action: Building Energy Management System	1 - 5		A	
PE3 Action: Benchmarking - Municipal Buildings	2 - 4	CEC	C	Board of Trustees adopted Energy Benchmarking Policy Requirements in February 2018.
PE3 Action: Clean Energy Upgrades	10	CEC	A	
PE3 Action: Green Building Standard for Government Buildings	2 - 4		A	
PE3 Action: Green Building Certification	15		A	
PE3 Action: Fleet Inventory	4	CSC Grants	R	Inventory of every four-wheeled vehicle owned or operated by the Village.
PE3 Action: Fleet Efficiency Policy	2 - 3	CSC Grants	A	
PE3 Action: Fleet Rightsizing	1 - 3		A	
PE3 Action: Advanced Vehicles	2 - 10	CEC	A	
PE3 Action: LED Street Lights	4 - 12	CEC	R	According to NYSERDA, the Village has achieved LED Street Lights- Cobra Head Fixtures.
PE3 Action: LED Traffic Signals	1 - 4		A	
PE3 Action: Outdoor Lighting Reduction	1 - 4		A	
PE3 Action: Outdoor Lighting Upgrades	1 - 4		A	

Action Name	Points	Type	Status	Explanation
PE3 Action: Environmentally Preferable Purchasing Policy	1 - 4		C	Board of Trustees adopted an Environmentally Preferable Purchasing Policy in June 2018.
PE3 Action: Financing Mechanism for Government Energy Projects	5		A	
PE3 Action: Waste & Energy Provisions in Government Contracts	1 - 3		R	Board of Trustees to adopt energy efficiency standards and waste handling requirements as standard specifications in government contracts.
PE3 Action: Incentives for Employee Carpooling & Transit	1 - 3		A	
PE3 Action: Energy Code Enforcement Training	5	CEC	C	Energy Code Enforcement Training- This should be checked to see when it needs to be completed again.
PE4: Shift to clean, renewable energy.				
PE4 Action: Green Power Procurement Policy	2 - 4		C	Board of Trustees adopted a green power procurement policy in April 2019.
PE4 Action: Renewable Energy Feasibility Studies	3 - 5		A	
PE4 Action: Renewable Energy Certificates	2 - 12	CEC, Revised Q4 2021	A	
PE4 Action: Heat Pumps	9 - 22	CEC	A	
PE4 Action: Solar Energy Installation	9 - 20		R	
PE4 Action: Power Purchase	9 - 20		A	

Action Name	Points	Type	Status	Explanation
Agreement for Renewables				
PE4 Action: Wind Energy Installation	9 - 20		A	
PE4 Action: Wood Pellet Installation	6 - 17			
PE4 Action: County-hosted Trainings	3 - 15	CEC, New as of Q4 2021	R	There are 5 trainings offered through NYSERDA that each offer 3 points.
PE5: Use climate-smart materials management.				
PE5 Action: Refrigerant Management Program	3-20		R	Implement a refrigerant management program- must have one of five components.
PE5 Action: Organics Management Plan	2 - 16	CSC Grants	A	
PE5 Action: Government Solid Waste Audit	2		A	
PE5 Action: Recycling Bins in Government Buildings	3		C	In 2018, recycling bins were placed everywhere that a trash bin was placed.
PE5 Action: Organic Waste Program for Government Buildings	1 - 3		A	
PE5 Action: WasteWise Program	1 - 2		A	
PE5 Action: Construction & Demolition Waste Policy	2 - 6	CSC Grants	R	Board of Trustees to adopt ordinances related to managing C&D waste.
PE5 Action: Reuse Programs	1 - 7	Revised Q4 2021	R	This can start as a pop-up event (small scale) and then maybe grow into a more permanent occurrence (medium/large scale).
PE5 Action: Recycling Program for	2 - 6	Revised Q4 2021	R	Establish a recycling program in public places (2) and for large events (2).

Action Name	Points	Type	Status	Explanation
Public Places & Events				
PE5 Action: Waste Reduction Education Campaign	2		C	Recycling campaign completed in 2018.
PE5 Action: Community Repair	4	Revised Q4 2021	R	Participate with the Hudson Valley Repair Café to have a community repair event in Piermont.
PE5 Action: Compost Bins for Residents	2		R	Look into getting composting bins for Village residents.
PE5 Action: Residential Organic Waste Program	2 - 22		C/R	Have a residential yard waste collection program. Consider establishing additional programs.
PE6: Implement climate-smart land use.				
PE6 Action: Comprehensive Plan with Sustainability Elements	3 - 21	Priority, CSC Grants	R	As the Comprehensive Plan is developed, check the requirements for this action.
PE6 Action: Smart Growth Policies	1 - 10	Revised Q4 2021	R	Some of the Smart Growth Policies (such as walkable neighborhoods) seem to already be in place in the Village.
PE6 Action: Unified Solar Permit	5	CEC	C	NYSERDA approved the Village's completion of the Unified Solar Permit.
PE6 Action: NYStretch Energy Code	10	CEC	A	
PE6 Action: Green Building Ordinance	1 - 6	Revised Q4 2021	A	**Only available for points on application submitted before July 8, 2022.
PE6 Action: Policies for Local Food Systems	1 - 4	Revised Q4 2021	R	The Board of Trustees would need to update the local zoning/adopt new policies that incentivize, promote, or remove barriers to local farmers' markets, the creation of community gardens, and urban and rural agricultural practices.

Action Name	Points	Type	Status	Explanation
PE6 Action: GreenLITES	6 - 15		A	
PE6 Action: Green Parking Lot Policies	1 - 4	Revised Q4 2021	A	
PE6 Action: Complete Streets Policy	4	Priority, CSC Grants	C	Board of Trustees adopted a Complete Streets Policy in April 2019.
PE6 Action: Planning for Biking & Walking	3		R	Incorporate planning for biking and walking in the Comprehensive Plan.
PE6 Action: Infrastructure for Biking & Walking	2-12		A	
PE6 Action: Alternative-fuel Infrastructure	4 - 18	Priority, CEC	C	2-port charging station installed on Main Street.
PE6 Action: Access to Public Transit	1 - 9	Revised Q4 2021	A	
PE6 Action: Safe Routes to School	3	Revised Q4 2021	A	
PE6 Action: Traffic Calming	3 - 7	Revised Q4 2021	A	
PE6 Action: Natural Resources Inventory	8 - 10	Priority, CSC Grants	A	
PE6 Action: Local Forestry Program	1 - 10	Revised Q4 2021	R	Conduct a tree inventory(3), enact a tree preservation ordinance(2)
PE6 Action: Zoning for Protection of Natural Areas	2 - 6	Revised Q4 2021	R	The Board of Trustees should update the local zoning ordinance or appropriate regulations to protect natural areas with recognized value for climate resilience or adaptation.
PE7: Enhance community resilience to climate change.				
PE7 Action: Climate Vulnerability Assessment	4 - 16	Priority, CSC Grants	C	Resilience Roadmap from 2014- May need to be updated/reassessed.
PE7 Action: Evaluate Policies for Climate Resilience	6	Priority, CSC Grants	C	Completed Climate Smart Resiliency Planning Tool/ Summary- Will need to be updated

Action Name	Points	Type	Status	Explanation
PE7 Action: Climate Adaptation Plan	3 - 15	Priority, CSC Grants, Revised Q4 2021	C	The Resilience Roadmap- Will need to be updated.
PE7 Action: Climate-resilient Hazard Mitigation Plan	4	Revised Q4 2021	R	Develop a muli-hazard mitigation plan.
PE7 Action: Heat Emergency Plan	6	CSC Grants	A	
PE7 Action: Shade Structures Policy	4		A	
PE7 Action: Cooling Centers	1 - 9	Revised Q4 2021	R	Establish one cooling center.
PE7 Action: Conserve Natural Areas	1 - 21		A	
PE7 Action: Watershed-based Flood Mitigation Plan	2 - 5		A	
PE7 Action: Design Flood Elevation & Flood Maps	2 - 14		R	Can train municipal staff and also consider expanded mapping.
PE7 Action: Freeboard Policies	4 - 19		R	Board of Trustees would adopt policies.
PE7 Action: Green Infrastructure	1 - 14		R	Can be completed through trainings (1) and support of other programs such as NGICP (1)
PE7 Action: Culverts & Dams	2 - 24		R	Conduct an assessment of all road-stream crossings (2)
PE7 Action: Riparian Buffers	2 - 14		A	
PE7 Action: Strategic Relocation	4 - 11		A	
PE7 Action: Nature-based Shorelines	2 - 12		R	Replacing or reducing a hardened shoreline structure with an NBF project (8)
PE7 Action: National Flood Insurance	3 - 9		A	**Piermont is not listed as an eligible community.

Action Name	Points	Type	Status	Explanation
Program Community Rating System				
PE7 Action: Watershed Plan for Water Quality	2 - 6		A	
PE7 Action: Source Water Protection	6 - 10		A	
PE7 Action: Water Conservation & Reuse	2 - 6		A	
PE7 Action: Water-smart Landscaping	1 - 6	Revised Q4 2021	R	Outreach, implement water-smart landscaping at government facilities for <1,000 SF and the Board of Trustees would adopt an ordinance or regulation.
PE8: Support a green innovation economy.				
PE8 Action: Green Jobs Training	3		R	Provide "green" training.
PE8 Action: Green Vendor Fairs	2		R	Host a green vendor fair or environmental fair.
PE8 Action: Green Economic Development Plans	4		A	
PE8 Action: Farmers' Markets	3		R	The Village offers a weekly Farmers' Market but will just need to make sure the local government has proof of support of it.
PE8 Action: Buy Local/Buy Green Campaign	2		R	Can participate in an existing regional campaign, if one exists.
PE8 Action: Brownfield Clean-up & Redevelopment	1 - 18		A	
PE8 Action: Incentives for Green Businesses	4		R	Consider possible incentives for Green Businesses.
PE8 Action: Benchmarking - Large Private Buildings	12	CEC	A	

Action Name	Points	Type	Status	Explanation
PE8 Action: PACE Financing	7 - 15	CEC	A	
PE8 Action: Community Choice Aggregation	12 - 33	CEC, Revised Q4 2021	A	
PE8 Action: Rooftop Solarize Campaign	3		A	
PE8 Action: Community Campaigns	3 - 12	CEC	A	
PE9: Inform and inspire the public.				
PE9 Action: Climate Change Education & Engagement	4 - 8	Priority	C	Sustainable Piermont Outreach and Education Program focused on 2014-2018- Will need to be updated.
PE9 Action: Energy Reduction Campaign	5		A	
PE9 Action: Climate-related Public Events	3		A	
PE9 Action: Local Climate Action Website	3		C	There is a Sustainable Piermont link but it does not appear that the website has been updated since 2019.
PE9 Action: Social Media	3		C	Sustainable Piermont Facebook Page appears active.
PE10: Engage in an evolving process of climate action.				
PE10 Action: GHG Tracking System	5		A	
PE10 Action: Annual Progress Report	4		R	The Village would release an annual progress report.
PE10 Action: Updates to Strategies & Plans	4		A	
Innovation				
Innovation: New Innovative Actions	3 - 18		A	
Innovation: Innovative	5 - 10		A	

Action Name	Points	Type	Status	Explanation
Approaches to Existing CSC Actions				
Performance				
Performance: Reduce GHGs from Government Facilities	15 - 45		R	The GHG inventory will show where the usage is. Then suing the other Actions, the Village can work towards reducing the emissions.
Performance: Reduce GHGs from Government Vehicles	15 - 45		A	
Performance: Reduce Solid Waste from Government Operations	3 - 10		A	

2. Next Steps

As previously mentioned, the Village of Piermont was designated as a Bronze certified community as it earned over 120 points according to the Climate Smart Communities Checklist. The Village may want to consider working towards being a Silver certified community. Below shows an outline of the different criteria requirements for the Bronze versus the Silver signations.

Table X: Certification Criteria

	Bronze	Silver
Mandatory	2	2
Priority	3	6
Points	120	300
Pledge Elements	4	7

Table X includes notes mandatory and priority criteria for the bronze and silver criteria. The mandatory criteria, including establishing a CSC Task Force and a CSC Coordinator were previously completed by the Village. Despite this, the Village does not appear to currently have a CSC Coordinator. This could put the Village in jeopardy of losing their Bronze certification and not allow them to pursue the Silver certification. In terms of the priority items, the Village had previously completed seven (7) priority items, meeting the requirements for the Silver as well as the Bronze.

As an overall note of importance, many of the previously completed actions shown in green designated as "C" or completed, may need to be updated according to the requirements outlined by the CSC Certification Program. This is not applicable to the previous adoptions of various policies but is the case for social media campaigns, studies, and review of data submitted for points in the past. The Village should also keep in mind that the curtain certification is set to expire in September 2024. If the Village is interested in pursuing the Silver certification, it will have to pursue many of the Recommended Next Steps highlighted in **Table X** as well as any other actions that the Village is interested in pursuing. Completion of all of the recommendations in the Table shown in green with an "R" designation results in 357 points if completed fully, which would enable the community to reach a Silver certification.

X.2 Baseline Carbon Footprint

1. Community Greenhouse Gas Inventory

2010 Inventory

The Village previously submitted a Community Greenhouse Gas Inventory based on the Mid-Hudson Regional Community Greenhouse Gas Inventory. This showed the majority of GHG emissions were from mobile energy, such as cars. The next greatest emission was from residential land uses, meaning people using natural gas and electricity in their homes. Compared to Rockland County at 22, the Village of Piermont did have a much lower per capita emission, at 13. Moreover, the Village was also lower in per capita emissions than the entire mid-Hudson region used in the Mid-Hudson Regional GHG Inventory.

Table X: Community GHG Inventory (2010)

GHG EMISSION SECTORS	$MTCO_2e$*
Residential	6,680
Commercial	3,567
Industrial	786
Mobile Energy	18,736
Solid Waste	780
Wastewater Treatment	244
Industrial Processes	932
Agriculture	11
Energy Supply	1,190
Total Emissions	**32,927**
Population	2,510
Per Capita Emissions	13

Existing Settlement Patterns

Orange and Rockland provided data related to land use categories totaling natural gas and electricity usage in 2019 for the Village of Piermont. These categories included residential, commercial, industrial, and municipal land uses. The data below in **Table X** shows that most of the greenhouse gas emissions were sourced from residential uses, at 60%. We also note that there was no industrial usage reported by Orange and Rockland in terms of natural gas or electricity usage in the Village, a change from the 2010 regional data previously provided.

Table X: Gross Emissions by Sector

Sector	**Total (MT CO_2e)**	**Percent of Total**
Residential	2,023.36	60%
Commercial/Institutional	1,367.54	40%
Municipal	1.48	0%
Total	**3,392.37**	**100%**

With these updated 2019 values, it appears that the Village's residential and commercial land uses have decreased in overall emissions as compared to the 2010 data. This may be a result of updates in the "greenness" of average household machinery, such as refrigerators and AC units. Many of these are available with Energy Star ratings and some allow users to apply for rebates on more eco-friendly options when purchased.

The mobile greenhouse gas emissions were not calculated for 2019. Upon reviewing the AADT data and imputing the appropriate vehicle mile travelled data into the Community Green House Gas Inventory excel document provided by NYSDEC, tpo many assumptions were required. For example, there were some portions of roads that extended far beyond the bounds of Piermont that would need to be included in the calculations, as they were not segmented by municipal boundaries. There was no way to properly estimate the year of the vehicles, nor the type of vehicle beyond passenger or truck.

It is important to note that it appears at the time of this writing that the Village, under the assistance of Nathan Mitchell is working with the Hudson Valley Regional Council to complete an updated Mid-Hudson Regional Community Green House Gas Inventory. The results are expected to be presented sometime in 2024, allowing for the Village to submit for points related to the Community GHG Inventory with the newly updated data.

2. Government Greenhouse Gas Inventory 2020-2022

The following is a 2022 Summary Report of the Greenhouse Gas Inventory for Government Operations for the Village of Piermont, prepared by Nathan Mitchell, Village Board Trustee, Chair of the Waterfront Resiliency Commission and Member of the Comprehensive Plan Committee.

Background

The Village of Piermont, NY recognizes that greenhouse gas (GHG) emissions from human activity are causing climate change, the consequences of which pose substantial risks to the future health and well-being of our community. To demonstrate its commitment to addressing the growing threat of climate change, in 2018 the Village of Piermont, NY became a registered Climate Smart Community by formally adopting the New York State Climate Smart Communities (CSC) pledge. In 2019, CSC bronze certification was awarded to the Village of Piermont.

The CSC program, administered by the New York State Department of Environmental Conservation (DEC), is a certification program that provides a robust framework to guide the actions local governments can take to reduce GHG emissions and adapt to the effects of climate change. The first step in this process is to perform a GHG Inventory for all buildings, vehicles and operations controlled by the local government. Using data from 2020-2022, this GHG inventory provides a baseline for which the Village of Piermont, NY can set emissions and operation costs reduction goals, determine ways in which those goals can be reached, and track progress.
This GHG Inventory for Government Operations Report summarizes the GHG emissions from the Village of Piermont, NY consumption of energy and materials within town-owned buildings, vehicle fleet, outdoor lighting, and other facilities. This data was generated from electric, and natural gas bills for all Village owned buildings and operations, as well as fuel records for the Village's vehicle fleet. The GHG emissions for all local government operations are measured in metric tons of CO2 equivalents (CO2e) and were calculated using emissions factors by the US Energy Information Administration (EIA), US Environmental Protection Agency (EPA) and the Climate Action Associates (CAA), LLC's GHG Inventory Tool.

Key Findings

From 2020-2022, GHG emissions from Piermont's government operations averaged 204.5116 CO2e. **Figure X** shows the emissions for government operations broken down by sector. Vehicle fleet accounts for the largest percentage of GHG emissions at 61%. A major factor is that our vehicle fleet includes DPW, Police, Fire and EMS vehicles, unlike many communities who rely on Fire Districts, private ambulance corps, and contracted police and DPW services. The second largest contributor is Piermont's administration facilities at 37%. Due to our changeover to LED street lighting, our streetlights and traffic signals are only 1% of our total GHG emissions.

The Inventory Results section of this report provides a detailed profile of emissions sources within Piermont. This data will also provide a baseline from which the Village will be able to compare future performance and demonstrate progress in reducing emissions.

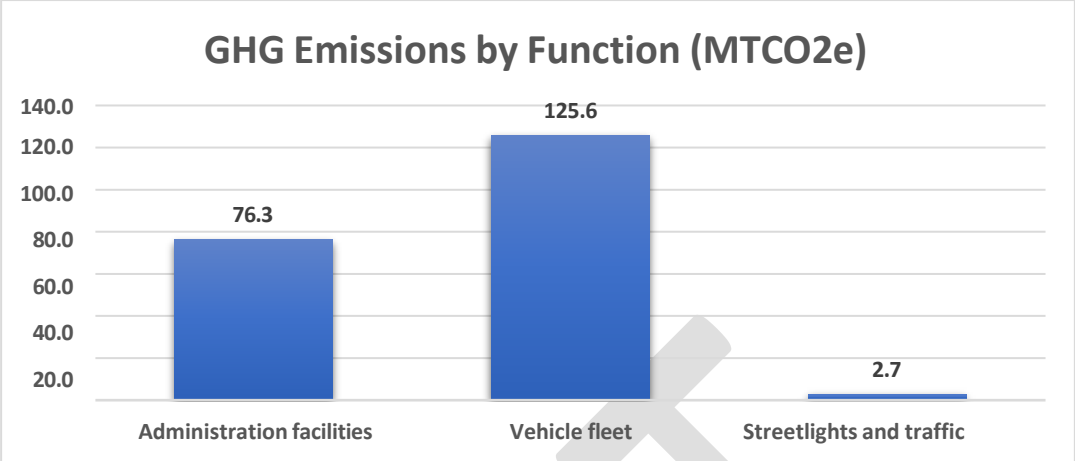


Figure X: 2020-2022 Piermont Government Operations Emissions by Sector

Data Gathering and Methodology

The first step toward achieving tangible greenhouse gas emission reductions requires identifying baseline emissions levels and sources and activities generating emissions in the community. Piermont is focusing first on government operations emissions to lead by example and will inventory community-wide emissions in a future report.

The CSC Task Force appointed Nathan Mitchell to lead the GHG Inventory data collection effort, with the help of Hudson Valley Regional Council (HVRC). The GHG Inventory spreadsheet used was developed by Climate Action Associates, LLC.

Emissions Scopes

For the government operations inventory, emissions are categorized by scope. Using the scopes framework helps prevent double counting. There are three emissions scopes for government operations emissions, as defined below:

- Scope 1: All direct emissions from a facility or piece of equipment operated by the local government, usually through fuel (natural gas, propane, and fuel oil) combustion. Examples include emissions from fuel consumed by the Village's vehicle fleet and emissions from a furnace in a municipal building.
- Scope 2: Indirect GHG emissions from purchased electricity. This refers to operations powered by grid electricity.
- Scope 3: All other indirect GHG emissions not covered in scope 2. Examples include contracted services, emissions in goods purchased by the local government and emissions associated with disposal of government generated waste.

This inventory only accounts for Scope 1 and 2 emissions, as they are the most essential components of a government operations greenhouse gas analysis and are most easily affected by local policy making. Under the DEC's CSC program, tracking Scope 3 is encouraged, but

optional. For consideration under Scope 3, Piermont has been making a push to increase our recycling and reduce our solid waste to landfill, and have doubled our recycling pickup days, and increased recycled tonnage over 50% while reducing our landfill tonnage by 1% after a 2- year public recycling education campaign and encouraging residents to utilize the Orangetown food scrap recycling program.

Baseline Year

The inventory process requires the selection of a baseline year. Local governments examine the range of data they have over time and select a year that has the most accurate and complete data for all key emission sources. It is also preferable to establish a base year several years in the past to be able to account for the emissions benefits of recent actions. A local government's emissions inventory should comprise all greenhouse gas emissions occurring during the selected baseline year. Piermont selected 2021 as a baseline year based on availability of complete data.

Quantification Methods

Greenhouse gas emissions in this inventory are quantified using calculation-based methodologies. Calculation-based methodologies calculate emissions using activity data and emissions factors. To calculate emissions accordingly, the basic equation is used:

Activity Data x Emissions Factor (Fuel, GHG) = GHG Emissions(Fuel, GHG)

Activity data refer to the relevant measurement of energy use or other greenhouse gas-generating processes such as fuel consumption by fuel type, metered annual electricity consumption, and annual vehicle miles traveled. To obtain this data, the Village gathered and reviewed all gas and electric bills for the Village's Orange & Rockland accounts, as well as fuel records for gasoline and diesel used to power the Village's DPW, Police, Fire, and EMS vehicle fleets.

Calculations for this inventory were made using CAA's GHG Inventory Tool. Data was first measured in kWh for grid electricity, therms for natural gas, and gallons for gasoline, fuel oil, diesel, and propane. Using the CAA tool, this data was multiplied by emission factors published by the EPA and EIA to convert the energy usage, or other activity data in quantified emissions.

Emissions Factors

Each GHG has an emission factor unique to each fuel. The electricity emission factor is based on the EPA eGRID subregion, which in this case is NYUP (Upstate). The natural gas, propane, heating oil/diesel, and gasoline emissions factors are taken from the EIA database on carbon dioxide emissions coefficients. The GHG emissions in this inventory are measured in metric tons of CO2 equivalents (CO2e).

Facilities Master List

A key step in creating the GHG inventory is to compile a facility master list that includes the Village's eight buildings as well as streetlights and vehicle fleet, that use at least one form of energy. Each was assigned to a category to indicate the type of infrastructure and then similar facilities along with their energy use.

Inventory Results

For developing emissions reduction policies, it is often most useful to look at emissions broken down by sector, as each sector will have a particular set of strategies to reduce emissions. **Figure X** shows the emissions for government operations broken down by sector. The figures below show Piermont's government operations emissions broken down in further detail within each sector.

Vehicle fleet had the largest sector of government operations emissions, at 125.6 MTCO2e. After vehicle fleet, Piermont's administration facilities were the next largest source of government operations emissions, with a total of 76.3 MTCO2e. This information was collected from utility (gas & electric) suppliers, as well as our municipal fuel depot (diesel) and the Orangetown municipal fuel depot (gasoline).

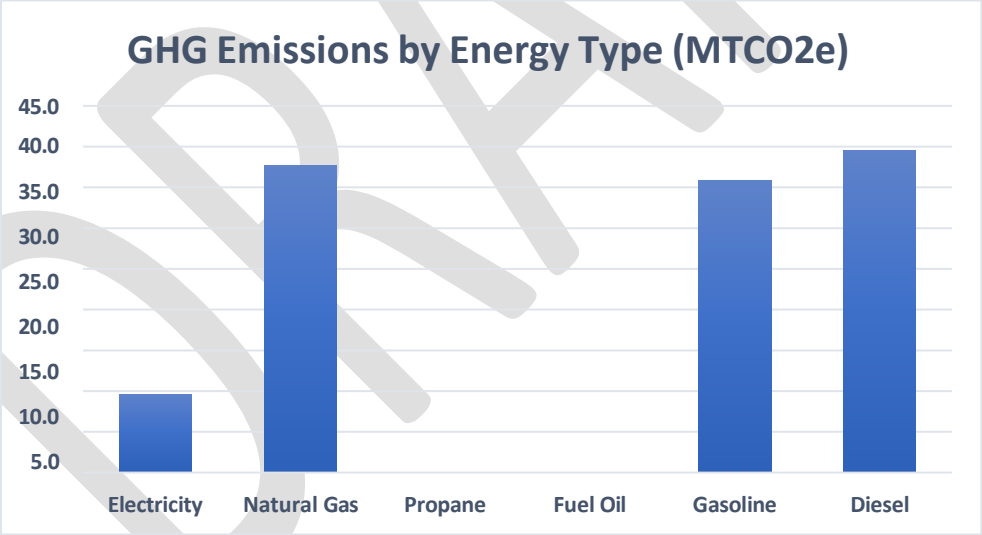


Figure X: 2020-2022 Piermont Government Operations Emissions by Fuel Type

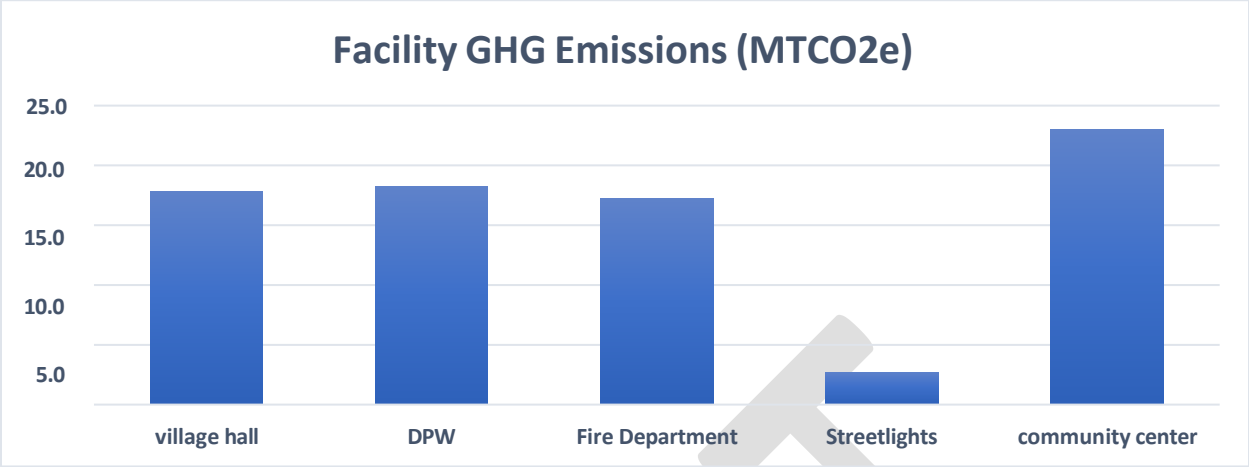


Figure X: 2020-2022 Piermont Government Operations Emissions by Department

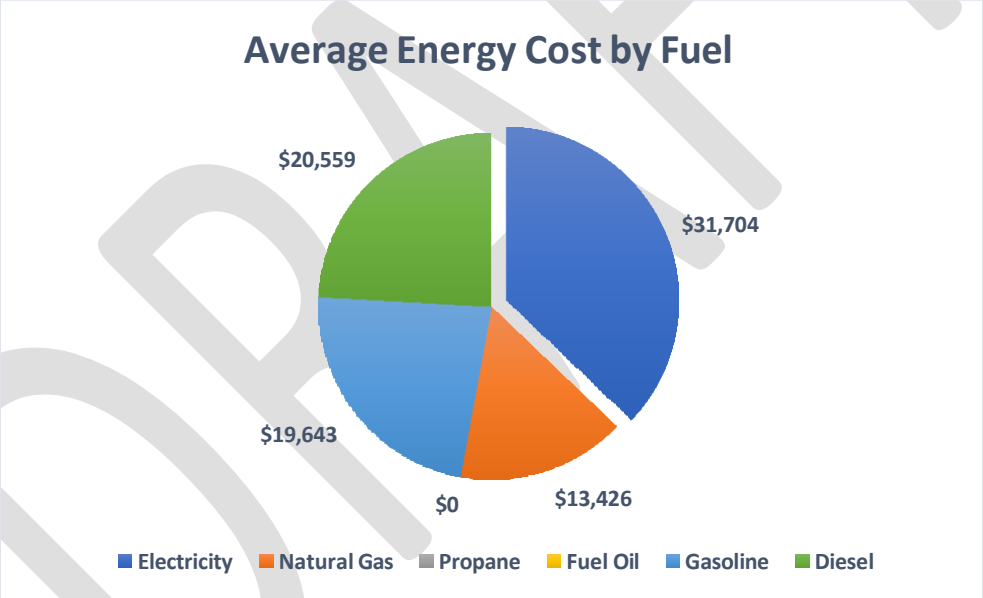


Figure X: 2020-2022 Piermont Average Cost by Fuel Type

Opportunities to Reduce Greenhouse Gases

Developing a GHG emissions baseline enables Piermont to set goals and targets for future reduction of GHG emissions.

The Village has been proactive to reduce GHG emissions and energy costs. Piermont has invested in upgrading all our streetlights to LED, as well as upgrading lighting fixtures in Village Hall and our Fire Department to LED. We are replacing inefficient window air conditioning units with mini-split heat pumps in administrative facilities and are considering options for electrification of portions of our vehicle fleet. We have installed an electric vehicle charging station and are

exploring adding additional charging stations in several locations. We are exploring adding solar to several facilities, but cost and ROI have been challenging so far for both solar panels and electrification of our vehicle fleets.

After implementing these proposed projects and identifying other Climate Action Plan (CAP) priorities / actions, total GHG emissions will inevitably be reduced.

The next steps are to set an emissions reduction target, and to develop a climate action plan that identifies specific quantified strategies that can cumulatively meet that target. In the meantime, Piermont will continue to track key energy use and emissions indicators on an ongoing basis.DEC recommends conducting a new inventory at least every five years to measure emissions reductions progress.

This inventory shows that it will be particularly important to focus on our vehicle fleet. Future emissions reductions strategies for Piermont to consider for its climate action plan include increasing energy efficiency and renewable energy investments, as well as vehicle fuel efficiency and electrification. Continued progress reducing solid waste collection rates and increasing recycling and food scrap recycling will additionally reduce Piermont's footprint and improve sustainability.

X.3 The Mid-Hudson Sustainability Plan

In 2013, the Mid-Hudson Planning Consotrium published a Mid-Hudson Regional Sustainability Plan, as a guidance of sustainable goals for the seven counties that make up the Mid-Hudson Region. These include Westchester, Orange, Putnam, Dutchess, Ulster, Sullivan, and Rockland County, where Piermont is located. The plan identified the following five focus areas:

- Land Use, Livable Communities, and Transportation
- Energy
- Materials Management
- Agriculture and Open Space
- Water

The Village should work towards making efficiency improvements that also reflect these focus areas. This can be done through a multitude of goals, such as:

1. Work towards creating a 'complete' community. This goal directly aligns with objective TL2, involving the balance of housing, services, recreation, and health environments.
2. Consider expanding renewable energy sources. This goal directly aligns with objectives EN1 and EN2. The Village can investigate the possibility of using more

renewable energy sources throughout municipal buildings or establishing policies to support residential use of the renewable energy sources, such as solar panels.

3. Make improvements towards achieving a 'zero waste' outcome. The Village has made improvements towards this goal which also aligns with objective MM2, to increase reuse, recycling, and composting.
4. Continue to preserve and enhance open spaces and natural resources within the Village. The objectives related to this goal, AO6, AO7, WE4, help to emphasize the importance of the natural environment as a part of the Village. The Village has access to many natural resources, including park land, open space, and waterbodies, and should continue to make sure these resources are preserved and protected from negative impacts as much as possible.