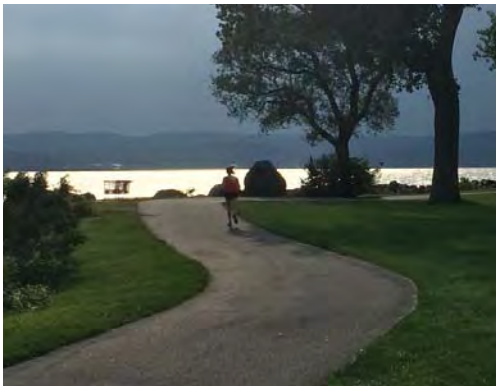
Village of Croton-on-Hudson
Local Waterfront Revitalization Program



Original LWRP

Adopted:
Village of Croton-on-Hudson Board of Trustees, March 16, 1992

Approved:
NYS Secretary of State Gail S. Shaffer, June 15, 1992

Concurred:
U.S. Office of Ocean and Coastal Resource Management, August 17, 1992

Amended LWRP

Adopted:
Village of Croton-on-Hudson Board of Trustees, insert date

Approved:
NYS Secretary of State Robert J. Rodriquez, insert date

Concurred:
U.S. Office for Coastal Management, insert date

ACKNOWLEDGEMENTS

Village of Croton-on-Hudson Board of Trustees

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INTRODUCTION

The Village of Croton-on-Hudson, lying within the Town of Cortlandt, is located on the eastern side of the Hudson River, in the northwest corner of Westchester County, approximately 40 miles north of New York City. The 10.9 square-mile village includes 4.8 square miles of land and 6.1 square miles of underwater land. Surrounding municipalities are the Town of Cortlandt to the north and east, the Town of New Castle to the east, the Town and Village of Ossining to the south and the Village of Haverstraw across the Hudson River in Rockland County to the west (see Figure 1). The western boundary of Westchester County in the Hudson River forms the Village's western boundary, and the Croton River serves as part of the Village's eastern boundary. Together, the rivers constitute approximately 71,280 feet of shoreline which includes 18,500 feet along the Croton River to Croton Bay.

Figure 1: Regional Context

CROTON-ON-HUDSON LWRP

FIGURE 1: REGIONAL CONTEXT

CROTON-ON-HUDSON, NY

Source: Westchester GIS, USGS, ESRI

BFJ Planning

Local Waterfront Revitalization Program Background

Croton Bay

The Village adopted its initial Local Waterfront Revitalization Program (LWRP) in 1992 to guide development within its waterfront revitalization area (WRA) in a way that protects and preserves natural resources and enhances public enjoyment of the waterfront. At that time, Croton-on-Hudson was one of the earliest municipalities to adopt an LWRP in Westchester County. Since the adoption of the LWRP, the Village has worked to advance its implementation in many ways, including completion of proposed projects listed in the 1992 LWRP. The Village followed LWRP guidelines to increase accessibility to the Hudson River and Croton River, by acquiring properties and easements along its shoreline, improving public access and adding recreational amenities to these areas. Also, there have been many changes to the zoning and environmental laws intended to provide increased open space and waterfront access, and improved protections for natural resources. The following projects have substantially progressed or been completed since the 1992 LWRP was adopted:[1]

Croton Gorge Walking Trail: Village completed this trail along the Croton River from Silver Lake Park to Black Rock Park. A portion of the Croton Gorge land which includes the trail was rezoned PRE-1, in order to preserve the area for passive open space and protect the environment.

Silver Lake Park: Improvements include the reconstruction of stairs, the restoration of a picnic area and the establishment of a community garden. The Village also funded and completed the rehabilitation of the Silver Lake Dam and annual maintenance of the swimming beach. Landscaping plans that enhance the appearance of the park and help with erosion control have been developed.

Black Rock Park: There have been some improvements at Black Rock Park such as demolition of deteriorating structures and general landscaping and maintenance. An area of the park has been designated as a dog park available to Village residents.

[1] LWRP Monitoring Report prepared by NYS DOS, December 2012

Croton Landing Park: In 2005, the Village began the construction of Croton Landing Park and a new road (Elliott Way). The project extended the Westchester County RiverWalk trail a half-mile north. In addition to the riverfront trail, Croton Landing Park has a small boat launch, picnic areas, a playing field, benches, public restroom facilities, parking and the Buchanan-Cortlandt-Croton 9/11 memorial.

Echo Canoe Launch: Improvements to the Croton River/Croton Bay Boat Ramp (the Echo Canoe Launch) and Village lands south of the Village parking areas at the Croton-Harmon Station were made to improve access to the Croton River for small boats (i.e. canoes, kayaks and other small water crafts). A parking area has been established with appropriate signage installed. Kayak rentals and lessons are available at the site on a seasonal basis.

Senasqua Park: Improvements to the park include the renovation of the bathhouse/public restrooms, replacement of playground equipment, repairs and upgrades to the drainage system, a reconfiguring of the parking lot and repairs and improvements to the boat ramp.

Traffic and Roadway Conditions: The Village has completed a project to construct vehicle, pedestrian and bicycle infrastructure improvements along Croton Point Avenue from Veterans Plaza, at the Croton-Harmon Train Station, to South Riverside Avenue. Funding is from a federal Transportation Enhancement grant, Westchester County and the Village's capital project fund.

Relocation of Department of Public Works (DPW) Garage: The Village relocated a DPW garage which was formerly at the southern end of the Croton-Harmon parking lot. The site was at a high risk to flooding, as it was within the 100-year floodplain. Relocating this facility also reduced the potential for gasoline and other chemicals used on-site to leach into the Croton Bay. The new DPW facility is located at 435 and 439 Yorktown Road (Route 129).

Elliott Way: In 2018, the Village completed a project to provide pedestrian accommodations along Elliott Way between Senasqua Park and the Croton Yacht Club, filling a gap in the pedestrian connection between Senasqua Park and Croton Landing Park. The improved 775- foot segment includes pedestrian accommodations as well as shoreline stabilization measures in an area that has experienced significant erosion. An elevated boardwalk system was designed to cantilever 3 feet on the river side, minimizing disturbance to the Hudson River and providing an extended surface for pedestrians. At-grade sidewalks were installed on both ends of the boardwalk to extend the walking surface, and damaged pavement on Elliott Way was repaired.

Stormwater Management: An inventory of the Village's stormwater collection system and outfalls has been completed. The Village has a Stormwater Management

Program, implemented under the Environmental Protection Agency and New York State Department of Environmental Conservation (DEC) storm water regulations.

The 1992 LWRP also helped the Village secure a number of grants to pursue some of the initiatives outlined in the Program. A New York State Department of State (NYS DOS) Environmental Protection Fund (EPF) LWRP grant award in 1996 allowed the Village to develop a vision and feasibility study for a newly acquired Hudson River waterfront parcel, which would ultimately become Croton Landing Park.

The LWRP has also served the purpose of coordinating local, State and Federal agency actions along the Village's waterfronts. In a major Federal consistency decision, the Village's LWRP was effective in contributing to a court ruling affirming the decision of the Secretary of the U.S. Department of Commerce upholding a DOS determination that Millennium Pipeline Company's proposed energy pipeline project did not comply with the Coastal Zone Management Act. The Federal Court (Millennium Pipeline Co., L.P. v. Gutierrez United States District Court, District of Columbia 424 F.Supp.2d 168) found that alternative routes existed that would avoid harm to natural resources within the Village, including Haverstraw Bay (a Significant Coastal Fish and Wildlife Habitat) and other protected wetlands.

In 2017, the Village adopted an updated Comprehensive Plan, which updated the previous Comprehensive Plan from 2003 and the Master Plan from 1977. The updated Comprehensive Plan reflects changes in the Village since 2003, and was written to be consistent with the LWRP policies. The Village also adopted an amendment to the Comprehensive Plan in 2019 which precipitated zoning changes in the Village to further the goal of affordable housing in the Village. In addition to the Comprehensive Plan, in 2007, the Village teamed with neighboring communities and Westchester County to prepare the Indian Brook-Croton Gorge Watershed Conservation Action Plan (see Appendix C). This watershed plan was developed to improve public access to the area and to protect and restore the natural resources in the Croton Bay watershed, most significantly the Croton River, Indian Brook Reservoir, existing wetlands and groundwater drinking sources.

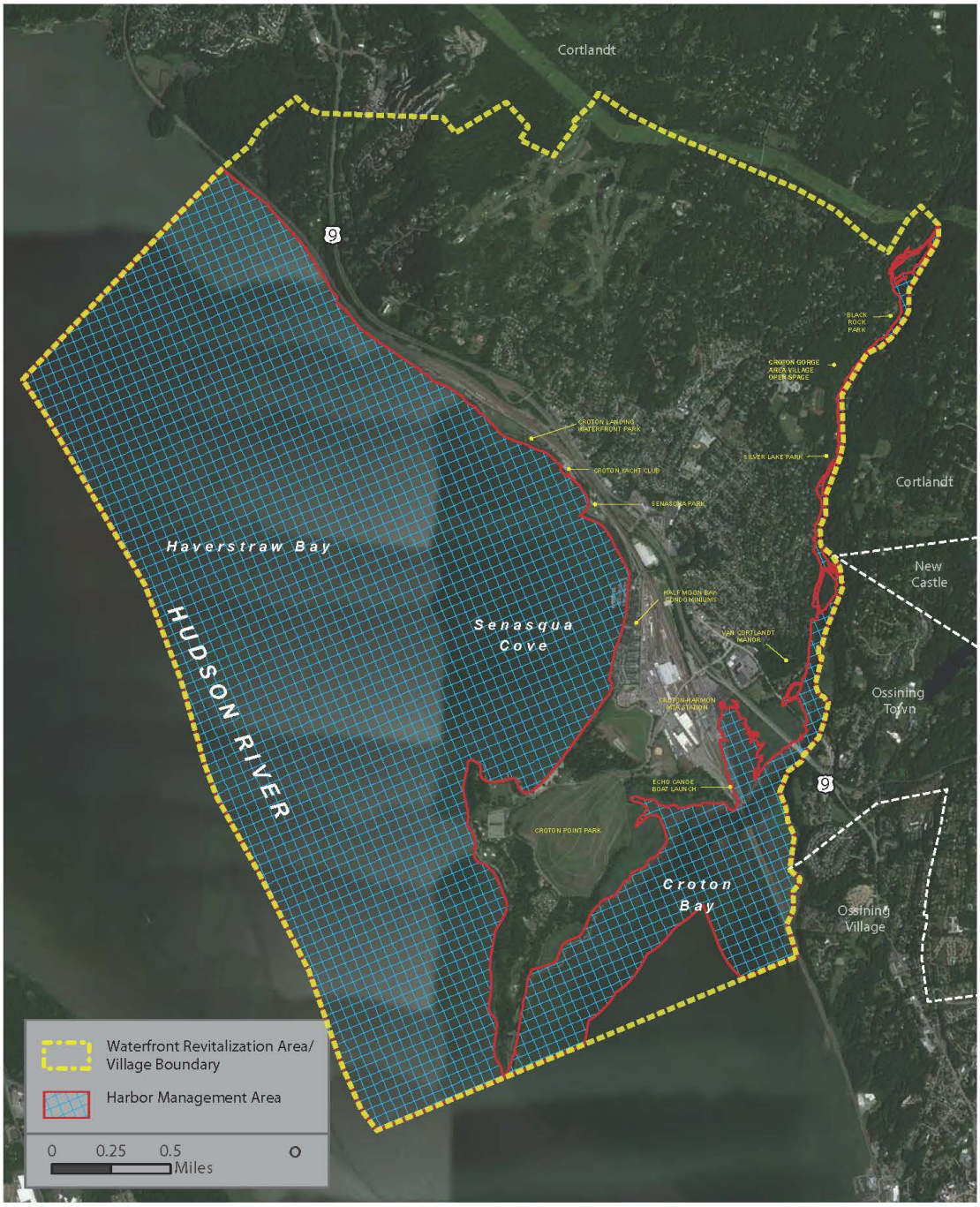
The Village's long-term waterfront vision is now outlined in the 2017 Comprehensive Plan, the Indian Brook-Croton Gorge Watershed Conservation Action Plan (Appendix C) and in amendments made to zoning and other local laws. This LWRP updates the 1992 LWRP, reflecting ongoing efforts as well as new initiatives or proposed projects. Once adopted, it will serve as a strategic plan for Croton-on-Hudson's Waterfront Revitalization Area (WRA).

SECTION I:
VILLAGE OF CROTON-ON-HUDSON WATERFRONT REVITALIZATION AREA BOUNDARY DESCRIPTION

In 1992, Croton-on-Hudson's LWRP was approved pursuant to Article 42 of the Executive Law. After 1992, the coastal area was renamed to the Waterfront Revitalization Area (WRA), as illustrated on Figure 2.

The WRA for the Village of Croton-on-Hudson coincides with the municipal boundary, and includes the entire 10.9-square-mile area of the Village. The inland boundary of the WRA is the eastern and northern boundary of the Village. The waterside boundary is the municipal limit coincident with the Westchester County boundary in the Hudson River to the west, the municipal limits in the Hudson River to the north and south, and the municipal limits in the Croton River to the east. The Village adopted the Waterfront Revitalization Area which included the entire Village when it submitted a statewide program for Federal approval in 1992. This updated LWRP has renamed the original Coastal Zone boundary the WRA and is referenced as such throughout the remainder of this document. The LWRP considers the entire Village of Croton-on-Hudson to have a direct and significant relationship with both the Croton and Hudson Rivers (see Figure 2). In addition, the topography of the Village is such that inland areas contain primary viewsheds of the rivers and waterfront and provide an important visual identity of the Village with the rivers.

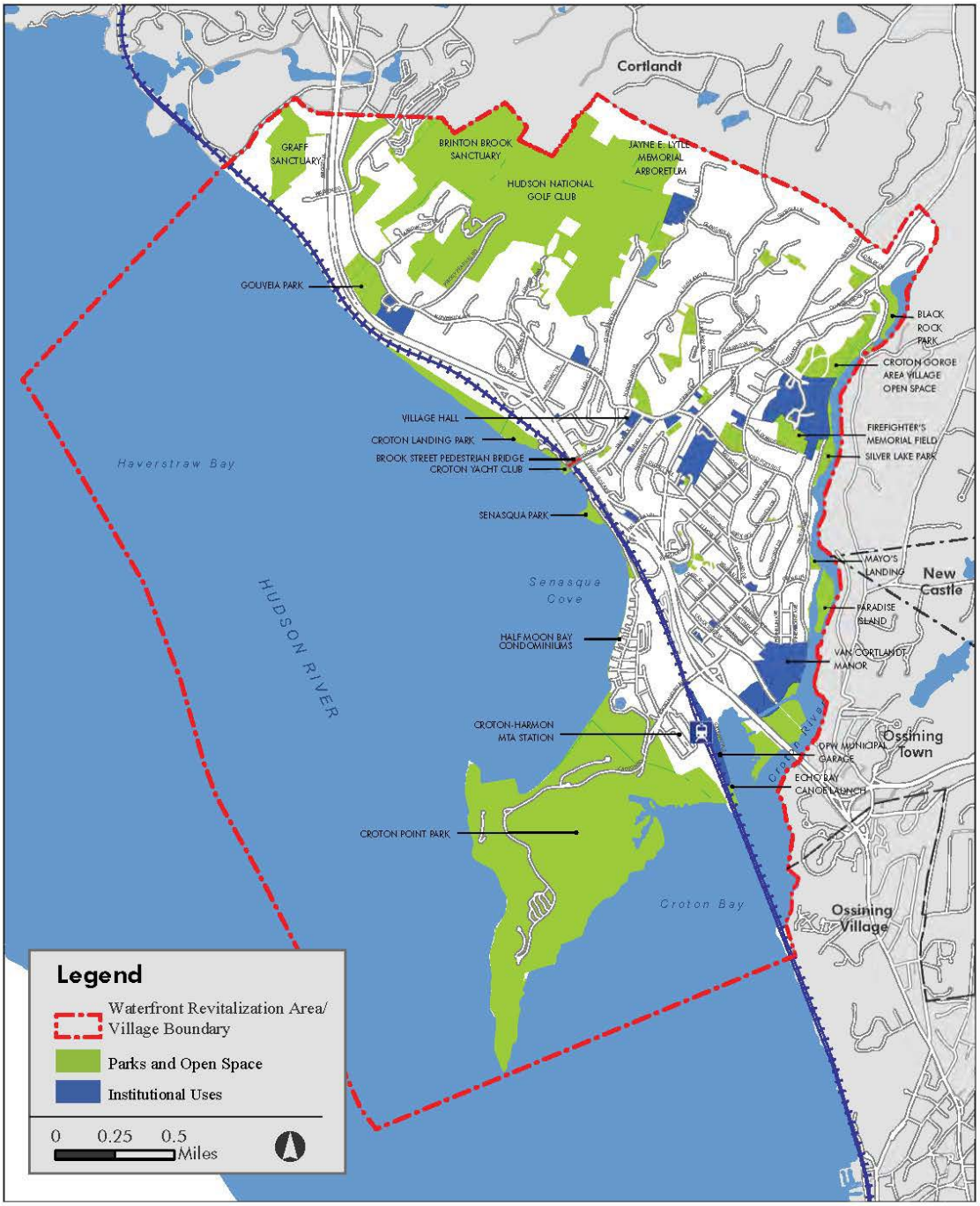
Figure 1A: Harbor Management Area



CROTON-ON-HUDSON LWRP FIGURE 1A: HARBOR MANAGEMENT AREA

CROTON-ON-HUDSON, NY Source: Westchester GIS BFJ Planning

Figure 2: Local Waterfront Revitalization Program Area Boundary



CROTON-ON-HUDSON LWRP FIGURE 2: WATERFRONT REVITALIZATION AREA

CROTON-ON-HUDSON, NY Source: Esri, USGS BFJ Planning

SECTION II:
INVENTORY AND ANALYSIS

A. CROTON-ON-HUDSON HISTORY

The Village of Croton-on-Hudson has a long and illustrious history closely tied to the waterfront. Most of the Village was built upon hills that slope naturally toward the Hudson and Croton Rivers, which form most of the Village's boundary; this has the effect of orienting the entire Village toward a waterfront. Many buildings situated on the streets and hills in the Village face either the Croton River or the Hudson River in order to take advantage of the dramatic views and access to the waterfront afforded by Croton-on-Hudson's unique location. The scenic views of the two rivers are enhanced by the parks, extensive wooded open spaces, and conservation areas throughout the Village.

The Hudson River, which forms Croton-on-Hudson's western boundary, is one of the defining features of the Village. The river was the impetus for its earliest settlements and industry, attracting Dutch traders in the 1600s and later supporting several industries, including shipping, ship building and brick manufacturing. In 1846, the tracks were laid for the Hudson River railroad line, and in the early 1900s, an engine terminal (Harmon Yard) was built close to Croton Point. The construction of the railroad transformed a large portion of waterfront property for utility and transportation uses, creating a barrier between the waterfront and the upland areas of the Village. This barrier was reinforced with the construction of north-south U.S. Route 9 in the 1960s.

Today, the railroad continues to have a significant presence adjacent to the waterfront, but the other waterfront industries have disappeared. Three parks – Westchester County's Croton Point Park at the southern end of Croton-on-Hudson, and the Village-owned Senasqua Park and Croton Landing Park – draw residents to the waterfront for recreational activities. In addition, several projects have created new residential and recreational uses along the waterfront, which has reconnected this area with the rest of the Village. These include the Half Moon Bay condominiums (completed in the early 2000s) which have a publicly accessible waterfront promenade, and the Brook Street pedestrian bridge (completed in 1997). In addition, the creation in 2006 of Elliott Way and adjacent RiverWalk west of the transportation barrier has enhanced public access connectivity along the Hudson.

In conjunction with the railroad, the construction of the Croton Dam and the Croton Aqueduct played an important role in shaping the Village's development. Construction began on the original Croton Dam in 1837 after several water crises in New York City made clear the need for a clean and reliable water supply for the growing city. The New Croton Dam, built of stone, was completed in 1907, which created the New Croton Reservoir. Excess water from the reservoir leaves the spillway at the New Croton Dam into the Croton River, which recharges the aquifer in the Croton River Valley, which is the primary source of drinking water for the Village.

Most of Croton-on-Hudson's housing stock was built before the 1970s. Two of the oldest residential neighborhoods in the Village were originally separate communities in the Town of Cortlandt prior to annexation by the Village in 1925: Mt. Airy and Harmon. Mount Airy was a Quaker enclave into the 1800s but evolved in the early 1920s into a summer colony that attracted many Greenwich Village artists and writers. Harmon, initially established in the early 20th century as an enclave for artists and writers, became home to railroad workers and commuters to New York City in the 1920s due to its proximity to the railroad station and railroad yards. Harmon was largely built out by the late 1940s in the post-World War II housing boom.

Following World War II, the Village's importance as a railroad town diminished as diesel replaced steam engines and long-distance passenger service declined. During this time, the Village transitioned into more of a commuter suburb, with many residents traveling to workplaces in New York City and other employment centers outside of Croton-on-Hudson.

In the past 30 years, new housing has been developed in the northern part of the Village and along the Hudson waterfront north of Croton Point Park. All of the subdivisions in the northern part of the Village have been single-family homes, while along the waterfront the Half Moon Bay condominiums were designed as a cluster subdivision. This development has increased the number of residential housing units resulting in population growth. As can be seen in Table 1, Croton-on-Hudson's population was at an all-time high of 8,070 persons in 2010. The population growth has been steady since 1980, when the Village's population was 6,889.

Since 2000, Croton-on-Hudson's population growth has been slightly less than the Town of Cortlandt but greater than that of Westchester County. Many factors influence the growth rate, including the rate of migration to the Village, an increase in housing starts and the birth rate.

Table 1: Croton-on-Hudson Population Change, 1980-2010

Year	Population	% Change
1980	6,889	
1990	7,018	1.9
2000	7,606	8.4
2010	8,070	6.1

Source: U.S. Census

Table 2: Population Growth, 2000 - 2010

Location	Total Population 2000	Total Population 2010	% Change
Croton-on Hudson	7,606	8,070	6.1
Town of Cortlandt	38,467	41,592	8.1
Westchester County	923,459	949,113	2.8

Source: U.S. Census

B. EXISTING LAND USES

a. Planning Areas

For purposes of best describing the existing land and water uses, the Croton-on-Hudson WRA has been divided into four planning areas: the Hudson Riverfront, Upper Village/Harmon, Croton River Basin, and North End areas. Each planning area has one or more particular characteristics which give it a special identity and, to a large extent, define its current land and water use. Land uses for these planning areas are shown in Figure 3.

<u>The Hudson Riverfront Planning Area</u>

Croton Landing Park

This planning area is bounded by Route 9 to the east (see Figure 3) and includes the underwater lands along the Hudson River. As seen in the land use map, the predominant land uses are open space/recreation and transportation. Croton Point Park, a Westchester County park, is the largest recreational site in the Village. A substantial portion of the land was the site of a landfill, which has been capped and restored to open space. Its location at a peninsula on the Hudson River allows for views for miles to the north and south. Also along this planning area are Senasqua Park and Croton Landing Park, two Village-owned parks, and the Croton Yacht Club. The 40-acre Graff Sanctuary, off Furnace Dock Road, is owned by the Audubon Society and is accessible for public recreational use. The recreational uses along the Hudson Riverfront are highlighted in Figure 4.

A significant portion of the Hudson Riverfront planning area is industrial- or transportation-related (see Figure 3). The 100-acre Croton-Harmon Metro-North Railroad Station and Harmon Yards are located adjacent to the Hudson River, just east of Croton Point Park. The station is the main switching location for north/south Metro-North and Amtrak trains running along the Hudson River and it is also the northern limit of electrification. The complex includes switching tracks, warehouses and maintenance facilities where Metro-North trains are sent for repair. The Village owns and operates the commuter parking facility that serves the Croton Harmon railroad station.

Figure 3: Land Use Map and Planning Areas

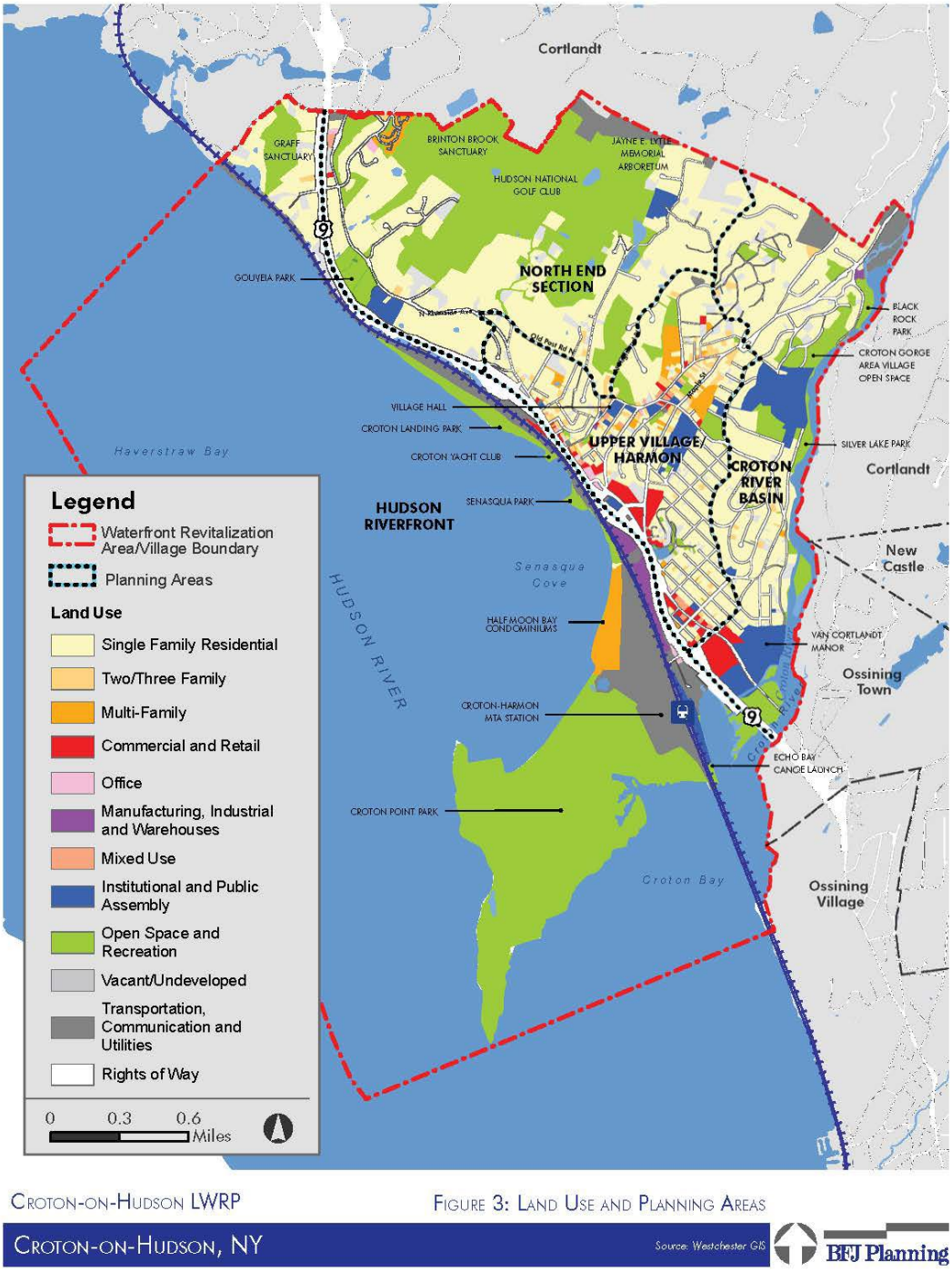


Figure 4: Recreational Uses along Hudson River


1: Croton-on-Hudson 9/11 Remembrance Memorial


2: Croton Landing Park pathway


3: Croton Landing Park small boat launch


4: Small boat launch at Croton Yacht Club


5: Croton Yacht Club


6: View south from pedestrian bridge


7: Senasqua Park


7: Sailing school at Senasqua Park


8: Pedestrian pathway


8: Senasqua Tunnel (pedestrian underpass to Municipal Pl.)


9: Public parking next to Half Moon Bay Marina


9: Pathway to Half Moon Bay Marina and Croton Point Park

Due to the Croton-Harmon Station's location adjacent to a major interchange with Route 9, the area represents a highly visible segment of the community. The station, with its expansive parking and rail yard facilities, is visually prominent on the skyline. It is the first sight to be seen by people entering the Village from the south along Route 9. Light pollution from the complex's light poles also directly affect views of the Hudson River and Croton Bay waterfronts in the evening.

Residential uses in the Hudson Riverfront area are mainly concentrated at the Half Moon Bay condominium complex, which is situated on the waterfront just west of the train station and consists of 282 attached townhouses in 20 buildings with two club houses and a 173-slip marina. The Half Moon Bay Promenade is a path along the water's edge that connects Croton Point Park to Elliott Way.

Half Moon Bay Condominiums

There are few commercial buildings in the Hudson Riverfront area. On Croton Point Avenue, at the entrance to the railroad station, three buildings are used for retail and office purposes. Near the Senasqua Road exit from Route 9, the former Croton North Railroad Station, which is on Westchester County's National Register of Historic Places, is now privately owned and used for commercial purposes. There is also an industrial area just north of the Half Moon Bay condominiums.

The Upper Village/Harmon Planning Area

The Upper Village/Harmon planning area has evolved into the focal point of most civic activities. Almost all of Croton's village-scaled residences, schools, offices, commercial establishments, religious buildings and playgrounds are in this area, as are almost all of the public buildings. These consist of the Municipal Building, the Croton Free Library, firehouses, two public schools and the Bethel cemetery.

The majority of the commercial establishments within the Village can be found in three identifiable commercial areas within this planning area. The principal commercial area runs along South Riverside Avenue between Municipal Place and Croton Point Avenue. This commercial stretch has a variety of establishments including retail stores, offices, two banks, four gas stations, a car dealership, a 10-store shopping center with a ShopRite anchor and several restaurants. In addition, a small bait and tackle shop on North Riverside Avenue relies on being close to the waterfront.

The area known as the Upper Village is the second-largest commercial area in Croton. The boundaries of the Upper Village extend roughly from the intersection of Van Wyck Street and Old Post Road North to Grand Street and then to Route 129 (Maple Street).

Old Post Road North/South, where it forms an intersection with Grand Street, is also part of the Upper Village commercial area. Retail stores, professional offices and restaurants are predominant in this area.

Most of the homes in this area are single-family residences situated on small lots of between 5,000 and 8,000 square feet. Although there are very few multifamily residences in Croton-on-Hudson, three of the largest exist within the Upper Village area - Bari Manor off Old Post Road South, Van Wyck Apartments on Grand Street and Symphony Knoll/Mt. Airy Woods off South Mount Airy Road. Bari Manor consists of three two-story buildings containing 82 rental apartments. Van Wyck Towers, built in 1929, is a six-story building with 35 rental apartments. Symphony Knoll/Mt. Airy Woods provides 23 affordable housing units in four buildings. There are also several other multifamily residences scattered about the Upper Village area, each containing from four to 10 units; some of these units are apartments located above stores.

The Croton River Basin Planning Area

The Croton River Basin Planning Area encompasses the land that directly relates to the second major waterway in the WRA - the Croton River. From its inception just south of the Croton Dam to its confluence with the Hudson River at Croton Bay, the beauty of the River, with its wooded shoreline, fast-moving water and outcroppings of rock, provides unlimited opportunities for enjoyment. Residents living along Truesdale, Morningside and Nordica Drives, bordering the Croton River, benefit from their views of its natural beauty. A number of recreation areas can be found along the Croton River including Silver Lake Park, Paradise Island, Fireman's Island, Black Rock Park, Mayo's Landing and the private historical site Van Cortlandt Manor. The recreational uses along the Croton River are highlighted in the aerial in Figure 5.

The Village-owned beach and picnic area known as Silver Lake is a very popular swimming area for Village residents, especially in the late spring and early summer months when the Croton River is high and fast running. Often, by late July, however, the water level becomes too low for swimming. This swimming and picnic area is close to the main residential areas of the Village, and although at the base of the gorge the terrain is very steep, it is accessible to many residents. There is a trail that follows the edge of the River from Silver Lake to the northeast. Boat access to Silver Lake is precluded by strong water currents and by regulations.

The Carrie E. Tompkins Elementary School, owned by the Croton-Harmon School District, is another significant land use in the area. The school is buffered from the surrounding neighborhood by the Croton Gorge Area open space to the north and Firefighter's Memorial Field to the south.

Figure 5: Recreational Uses along the Croton River

As can be seen in the land use map (see Figure 3), the majority of the land in this area is single-family residential. In the northeast portion of this area, large parcels of 1 acre or more can be found on Georgia Lane and along Mt. Airy Road between Grand Street and the Village boundary line. An area known as the "Trails," a hilly area with narrow roads that is bounded by Mt. Airy Road, Grand Street and Batten Road, has an unusual mixture of homes new and old, large and small, on varying size plots. Until 1931, the Trails were not part of the Village; this was originally a summer community and was independently managed by a private homeowners' association, the Mt. Airy Associates. The variety of homes and lot sizes in this area is partially a reflection of its independent past.

The North End Planning Area

The North End planning area of the Croton-on-Hudson WRA is generally the area in the Village west of the Upper Village and north of Route 9. The area contains most of the undeveloped land in Croton-on-Hudson. It is generally very steep, is less densely populated and has only one major road (Route 9A-Albany Post Road and Old Post Road North) bisecting it in a north-south direction. Unlike the Hudson Riverfront and the Croton River Basin planning areas, the North End does not border directly on a major water body. In spite of this, its hilly topography in conjunction with generally large lot sizes and substantial open spaces, give it excellent visual access to the Hudson River.

Because there are few crossroads in the North End, residences tend to be on large plots of land adjacent to the main north-south road. Most are single-family residences. Along Route 9A, many of these residences are not visible as long driveways lead either west towards the Hudson or east, up into the open hilly spaces. Two long private roads in the North End, Prickly Pear Hill Road and Finney Farm Road, extend eastward into the hills from Albany Post Road and Old Post Road North. These steep roads provide access to a number of single-family residences which generally are large and secluded. A large portion of the residential properties in this portion of the Village were rezoned in 2014 to a new RA-60 zone which has a minimum lot size of 60,000 sq. feet (1.5 acres).

Three high-density residential sites are also located in the North End. These sites are in contrast to the low-density pattern that generally prevails in the area. The Skyview Nursing and Rehabilitation Center provides a residence for the elderly in need of nursing and rehabilitation care. Scenic Ridge is a community consisting of 17 groups of attached single family dwelling units in groups of four to seven, totaling 97 units in all. Adjacent to Scenic Ridge is Amberlands, a large apartment complex (more than 30 buildings of three stories with 20+ apartments each) which lies in the Town of Cortlandt.

The Brinton Brook Preserve, owned by the Saw Mill Audubon Society, provides passive recreation opportunities through use of its trails. Spectacular views of the Hudson may

be seen from this nature preserve high on the hills on the east side of Route 9A. Hudson National Golf Course is another recreational amenity in the North End. The 260-acre private club opened in 1996 and is sited at one of the highest elevation points in Westchester County.

A tract of land in the North End that runs along the Village boundary line with the Town of Cortlandt is owned by Consolidated Edison. High tension lines from the Indian Point Nuclear Power plant run through this area., Although the plant has now closed, no development plans are being considered for this property at this time.

C. ZONING DISTRICTS

The Village covers a land area of 4.8 square miles, most of it zoned for residential use. The predominant non-residential uses consist of open space and park areas; commercial districts in the Upper Village and along North and South Riverside Avenues and Maple Street; and industrial/transportation areas associated with the Metro-North facilities. Several small office districts are in the Upper Village, North Riverside, the Municipal Place area and at the north end of the Village. A description of the Village's zoning districts is summarized below and shown in Figure 6.

Residential Uses. Croton-on-Hudson's residential zoning reflects its historical pattern of development, which is typical of many villages: the highest density neighborhoods (those with more houses per acre of land) are situated closer to the commercial centers, with the density decreasing farther away from these centers. The neighborhoods situated closest to the Village's four commercial centers – Harmon, the Upper Village, North Riverside and the Municipal Place area – consist primarily of single-family homes built on 5,000 and 9,375 square foot lots. These neighborhoods also contain the majority of the two- and multi-family residences in the Village. Moving away from the commercial centers, the lot sizes increase to a minimum of 25,000 and 60,000 square foot lots.

Single Family Housing. Croton-on-Hudson has five single-family residential zoning districts: RA-5, RA-9, RA-25, RA-40 and RA-60. The districts range in permitted density, from homes built on one-eighth acre lots (RA-5) to homes on 1.5 acre lots (RA-60). The northern area of the Village is zoned primarily RA-40 and RA-60, with the exception of a small RA-25 district and an office district in the northwest corner of the Village.

Multi-Family Residential. The Village has two zoning districts permitting multi-family residential: RB (two-family residences) and RC (multi-family residences). These districts are limited to the Upper Village and North Riverside Avenue. The WD district along

the Hudson River between Croton Point and Senasqua Park also permits multi-family development. The Half Moon Bay condominium development is in this district.

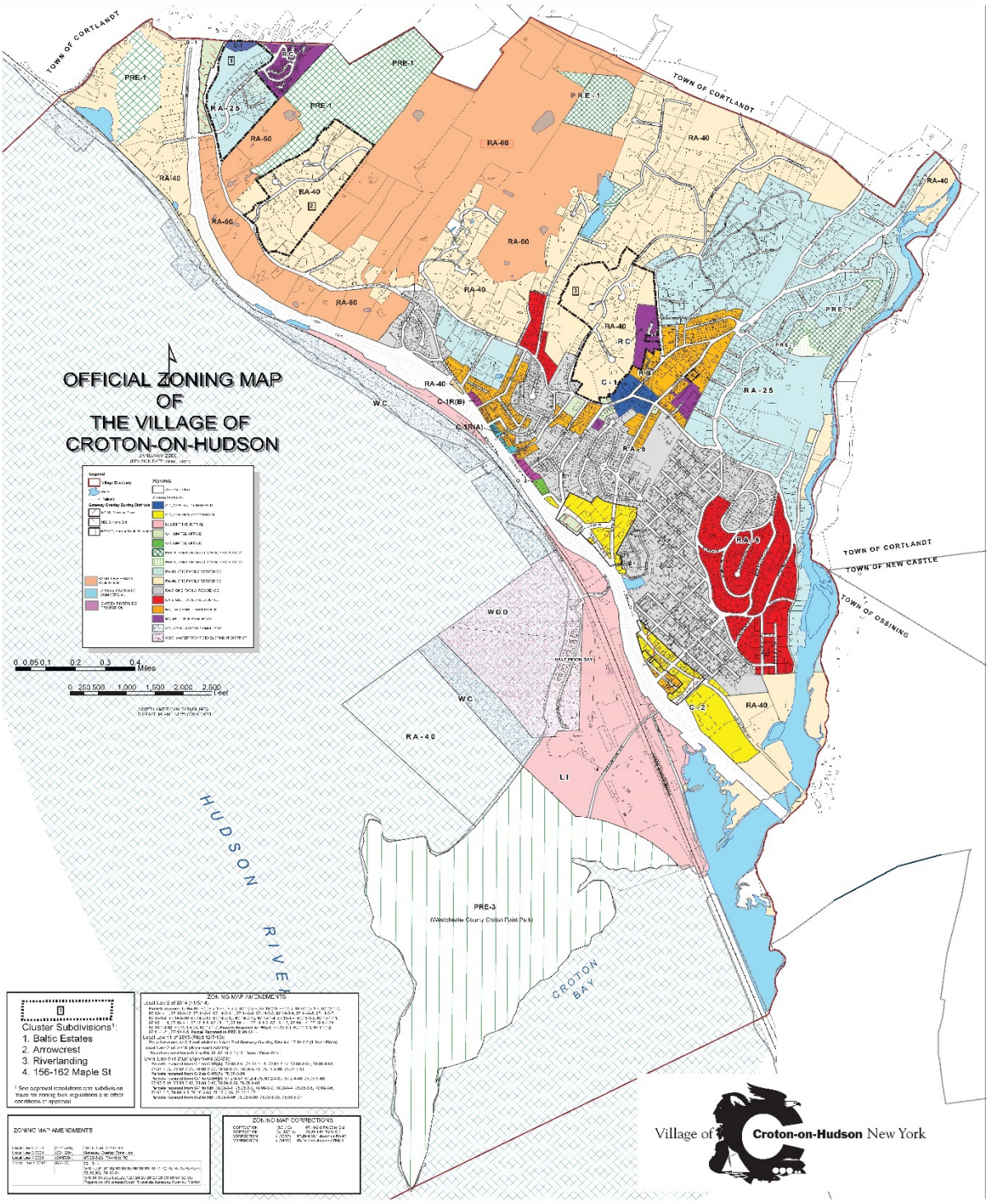
Commercial Centers. The Village has four commercial centers: the Upper Village, North Riverside, the Municipal Place area, and the South Riverside/Harmon area. These districts are zoned C-1, C-1R(A) and C-1R(B) for central commercial as well as C-2 for general commercial uses. C-1 commercial districts are found in the older commercial areas such as the Upper Village. C-1R(A) and C-1R(B) zoning districts were established by the Village Board via local law in 2019 to rezone portions of the North Riverside commercial corridor. These districts allow for downtown uses such as retail, service-oriented uses, offices, restaurants, dry cleaners, and theaters. C-2 districts allow C-1 uses along with the following uses by special permit: retail, auto-related uses (service stations, gas stations, automobile sales); social clubs; animal hospitals; hotels; utility structures; and residential uses on upper floors.

Office Districts. Most of the office space in Croton-on-Hudson consists of small-scale offices and home office use. The Village has five small office districts, found in the North End area of the Village (zoned O-1); the Municipal Place area (O-1); Route 9A/Grand Street (O-2); and Grand Street/Old Post Road (O-1). These office districts comprise approximately 0.5% of Village land. O-1 districts allow for single- and two-family residences, offices and day care centers. O-2 districts do not permit residential but allow for offices and some manufacturing uses.

Waterfront Commercial (WC) zoning was created to enhance waterfront areas for recreation, conservation and development of aquatic resources, and commercial uses where appropriate. The Village's Hudson riverfront area, from the northwestern tip of the Village to the area just south of Senasqua Park is zoned WC. Land uses in this district include Senasqua Park, the Croton Yacht Club and Croton Landing. The zoning requirements include a provision for public waterfront access.

Waterfront Development (WD) zoning is a riverfront development district that was created to facilitate the development of property along the Hudson River in a manner consistent with the Village's Comprehensive Plan (2017), Local Waterfront Revitalization Program (1992) and the Greenway Vision Plan. The WD district has provisions to expand uses and public accessibility for purposes of recreation, leisure and year-round residence. Permitted uses include recreational facilities and residential uses. Uses permitted by special permits include restaurants, marinas, ferries and cultural uses such as theaters, bandshells and museums. WD zoning requires larger tracts of land to be developed as a single, unified and comprehensive project.

Figure 6: Zoning Districts



Parks Recreation and Education (PRE) districts were created in 1988 to preserve natural resources and other community resources. The district allows for public parks, recreational activities, schools and other educational facilities, nature preserves, bird and wildlife sanctuaries, and other similar uses. Several natural areas, including the Jane E. Lytle Arboretum, the Graff and Brinton Brook sanctuaries, Kaplan's Pond, Croton Point Park and the Village owned land in the Croton Gorge were designated PRE districts in 2014.

Light Industrial (L-I) Industrial and rail transportation uses are located in the L-I light industrial zone located along the Hudson River waterfront. In this district, the Croton Harmon railroad complex occupies approximately 100 acres, dominating the central area of the Hudson River Waterfront planning area, but not directly fronting it. There is also an industrial area along Half Moon Bay Drive.

Gateway Districts In addition to the general zoning districts there are "gateway districts" identified for three Croton-on-Hudson commercial areas. Gateways mark a sense of arrival, and connection to a community, and establish an image for the community. The three gateway districts are:

- Harmon/South Riverside (H/SRGD): The area is an important link to the train station via Croton Point Avenue and to the Harmon neighborhood. It also adjoins historic Van Cortlandt Manor to the south.

- Municipal Place (MPGD): The Municipal Place gateway district is an important entrance to the Village from Route 9. It connects to the Upper Village via Maple Street and to the surrounding neighborhoods.

- North End (NEGD): This area marks the entrance to the Village from the north along Route 9A.

The primary purposes of designating these as gateway areas are to upgrade the image and function of commercial areas, define the entry into the Village, strengthen the overall visual identity of the Village, promote economic development and improve linkages to adjacent residential neighborhoods. The gateway districts include special use, area and bulk regulations, and design regulations.

In the Harmon/South Riverside Gateway District area, mixed use buildings (i.e. retail on ground floor with residential units on upper floors) are allowed by special permit. Special area and bulk regulations and design guidelines apply specifically to mixed use buildings in this area.

D. WATER USE PLAN

a. In-Water and Water Dependent Uses

According to the Department of State (DOS), water-dependent[2] uses refer to activities which can only be conducted on, in, over or adjacent to a water body because such activity requires direct access to that water body and which involves the use of the water as an integral part of the activity. For purposes of best describing the existing water uses, the activities associated with the use of waters has been divided into two areas, the Hudson River and the Croton River.

The in-water uses in the Croton River primarily serve small pleasure crafts. The Village-owned in-water uses are focused on hand-launched vessels (canoes and kayaks) which are appropriate in shallow waters. The northern limit of the navigable and tidal portion of the river is generally at Fireman's Island, located just east of Silver Lake Park.

No commercial fishing is known to occur in the Waterfront Revitalization Area Boundary, however recreational fishing is found at Black Rock Park and throughout the Hudson River.

Use of the Hudson River

Public access to the Hudson River for boating activities is presently available at Senasqua Park, a small boat ramp in Croton Landing Park which is along the Hudson River Valley Greenway and the Echo Canoe Launch at the eastern end of the Croton-Harmon Station parking lot. Senasqua Park is available to Village residents for sailing boats, boat storage and picnicking. However, access to the park and parking space for boats, trailers and vehicles is extremely limited. The boat marina adjacent to Senasqua Park operates from May to mid-October. Mooring space is available by permit to residents and non-residents. The Croton Yacht Club, which operates on land leased from the Village, also provides a marina for boats. The recreational uses along the Hudson Riverfront are highlighted in Figure 4 in Section II-B.

[2] As defined in 19 NYCRR § 600.2(ai)

The in-water uses along the Hudson River are depicted in Figure 4 and are described below. The two largest in-water uses in Croton-on-Hudson are the Croton Yacht Club, located on Elliott Way on Village-owned land leased to the club, and the Half Moon Bay Marina adjacent to the condominium complex.

Croton Yacht Club

Senasqua Park

Croton Point Park. The Westchester County-owned park offers a range of amenities including camping, fishing, beach/swimming areas, hiking, picnicking and play areas (see parks and recreation section). Road access is provided from Croton Point Avenue, which connects to Routes 9 and 9A.

Senasqua Park & the Croton Sailing School. Senasqua Park is a 4.5-acre Village-owned park used for boating, picnicking and other civic activities. The boat marina next to Senasqua Park, which contains a boat ramp, floating dock and boat storage, operates from May to mid-October. Sailing lessons are offered by the Croton Sailing School, a privately owned business that operates on Village-owned land. Mooring space is available by permit to residents and non-residents. Rules and regulations for the boat basin can be found in Appendix B.

Croton Yacht Club. The Croton Yacht Club (CYC) site includes a modular building, a parking area, and several floating docks with slips for boats. The Croton Yacht Club has been in operation since the 1950's. The property is owned by the Village and has been leased to the CYC through the year 2034.

CYC operates a 120-slip marina for vessels up to 35 feet, with the average boat stored approximately 25 feet in length. The marina also provides storage options for trailer boats and personal watercraft, as well as canoe and kayak storage. Croton Yacht Club has three floating docks with 120 slips. Each slip is equipped with its own finger pier, with access to water and electric utilities. Guest docks are available for overnight stays. The yacht club has two boat ramps for launching and removing day sailors and trailer-able watercraft, available on a first-come, first-served basis. In addition, the club provides dry-dock storage and related services including hauling services and power washing.

As part of the CYC's lease, the Club has agreed to assist the Village by periodically removing sediment at the mouth of the Brook Street drainage culvert, performing seasonal maintenance work at Senasqua Boat Basin and providing docking for the

Village's Police or Fire Department. The dock at the Club is available to pedestrians for recreation and fishing.

Half Moon Bay Marina. The Half Moon Bay Marina, located just south of the intersection of Half Moon Bay Drive and Elliott Way, has 173 boat slips and can accommodate boats of up to 150 feet long. Boat slips are available for rent by the season, month or day when available. The entire marina is protected by a breakwater.

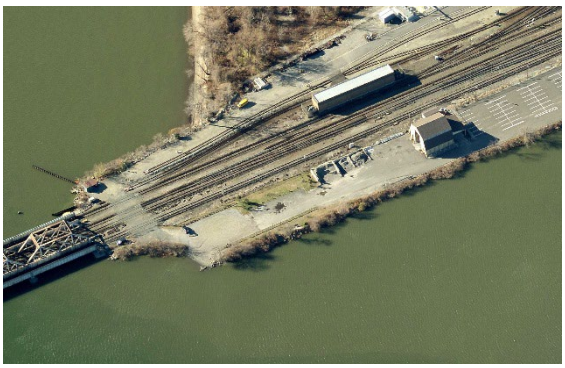
Boat slips are served by water and electricity, as well as hookups for telephone and cable television. A pump-out facility is also available. A 1,000-foot breakwater protects the marina, extending to the west and south. Half Moon Bay Marina operates as a "dockominium," in which each boat slip is individually owned, and the facility is managed by a boatowner's association. The marina also offers slips to transient boaters during its season (March 1 through November 25).

Croton Landing Park. The park offers Hudson River views and a handicapped accessible path along the waterfront. The pedestrian bridge over Route 9 provides access to the park from the bottom of Brook Street on North Riverside Avenue. A small boat launch (canoes and kayaks) with adjacent kayak storage is located in the parking lot. Creation of the park extended the Westchester County RiverWalk Trail one mile to the north from Senasqua Park. In addition to the riverfront trail, Croton Landing Park has picnic areas, a playing field, benches, public restroom facilities, parking and the Buchanan-Cortlandt-Croton 9/11 memorial.

Use of the Croton River

The in-water uses along the Croton River are depicted in Figure 5 (in Section II-B) and also described below. Along the Croton River, in-water uses include the Village's Echo Canoe Launch just east of the Metro-North rail crossing over Croton Bay; the swimming beach at Silver Lake Park; and the fishing area at Black Rock Park.

Echo Canoe Launch. Located south of the Village salt shed (adjacent to the Croton Harmon Station Parking Area), this area provides a launching area primarily for canoes and kayaks and other small boats, as well as fishing and passive recreation. Kayak rentals and lessons are available at the site on a seasonal basis. Recent improvements to the boat launch, and the surrounding Village-owned land have been made to improve accessibility and use.



Echo Canoe Launch

Silver Lake. Located alongside the Croton River at the end of Truesdale Drive, this facility is open to village residents and their guests for swimming during the summer season. Permits or daily fees are required.

Silver Lake Park

Paradise Island. This County-owned, undeveloped 22-acre island in the Croton River is accessed by canoe or kayak and is only available for passive recreation purposes.

Fireman's Island. Located within the Croton River just east of Silver Lake Park, this Village-owned open space area represents the northern limit of the navigable and tidal portion of the river.

Black Rock Park. Located on Quaker Bridge Road along the Croton River, the park offers access to the Croton River for fishing and picnic space. There is also an enclosed dog park for resident use.

b. Water-Enhanced Uses

A water-enhanced use is defined in 19 NYCRR § 600.2(ai) as "a use or activity which does not require a location adjacent to coastal waters, but whose location on the shore adds to the public use and enjoyment of the water's edge. Water-enhanced uses are primarily recreational, cultural, retail, or entertainment uses." There are a number of water-enhanced uses in the Village's waterfront revitalization area (WRA) adjacent to the Hudson and Croton Rivers. Because of Croton-on-Hudson's topography, many residences in the WRA have excellent views of one of the rivers.

The Half Moon Bay condominium complex, located next to the Half Moon Bay Marina, is enhanced by its location along the Hudson River. The development consists of 337 residential units in 20 buildings plus clubhouses, a common building, two pools, tennis courts and pedestrian trails. A public waterfront esplanade, restricted to Croton-on-Hudson residents, stretches the length of the development along the Hudson riverfront. Public parking is available at the gatehouse.

The Pierre Van Cortlandt Manor, owned and operated by Historic Hudson Valley (formerly Sleepy Hollow Restorations) is a water-enhanced use. This property fronts directly on the Croton River and is the site of the historic Pierre Van Cortlandt manor house dating from the time of Dutch control over the Hudson Valley. Tours are conducted of the house and grounds by Historic Hudson Valley. Picnicking spots are available (with an entrance fee).

In addition, a small bait and tackle shop on North Riverside Avenue relies on being close to the waterfront, and several restaurants along this roadway also benefit from their location near the Hudson.

c. Navigable Waters

The Village's Hudson River waterfront and Croton Bay are situated east of the natural navigational channel of the Hudson River Tidal Estuary. Within the WRA, there are no navigation channels maintained by the U.S. Army Corps of Engineers (see Figure 7). Originally constructed by the Corps of Engineers as a Federal navigation project, navigation channels are no longer maintained regularly by the Corps of Engineers unless used for commercial shipping purposes. A 30-foot-deep navigation channel exists west of Croton-on-Hudson that allows vessels with a deeper draft to pass through Haverstraw Bay, and is actively dredged by the Corps of Engineers. This channel leads into the natural navigational channel, where it is naturally deeper than 30 feet.

Figure 7: Hudson River Navigational Channel, New York to Wappinger Creek

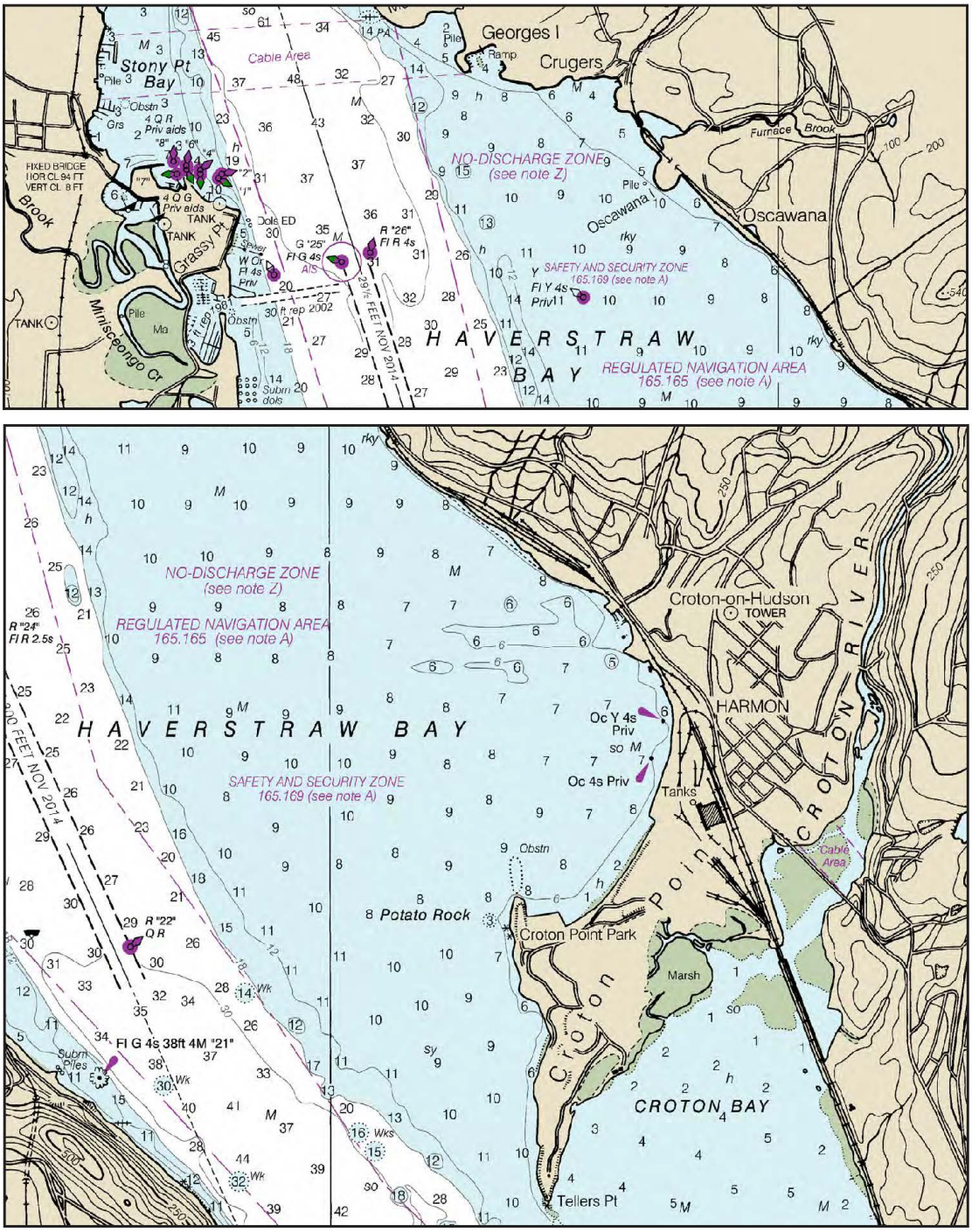


FIGURE 7: HUDSON RIVER NAVIGATIONAL CHANNEL, NEW YORK TO WAPPINGER CREEK

CROTON-ON-HUDSON LWRP

CROTON-ON-HUDSON, NY

Source: National Oceanic and Atmospheric Administration, National Ocean Service

BFJ Planning

As seen in the National Oceanic and Atmospheric Administration (NOAA) Navigational Charts depicted in Figure 7, Haverstraw Bay generally has depths ranging from approximately 5 feet along the Croton-on-Hudson shoreline to 18 feet adjacent to the federal channel. In Croton Bay and along the northern shoreline of Croton Point Park, the depths are shallower, ranging from 1 to 8 feet.

The Village-owned in-water uses are focused on hand-launched vessels (canoes and kayaks) which are appropriate in shallow waters. No dredging is anticipated to be required for these uses.

d. Harbor Management

Harbor Management Plan

In 1992, the NYS Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways, was amended to provide local governments with the clear authority to comprehensively manage activities in near shore areas within their LWRP boundary by developing comprehensive harbor management plans (HMPs) and local laws to implement these plans.

Pursuant to Section 922 of Article 42 of the Executive Law, the Village of Croton-on-Hudson prepared a Harbor Management Plan to manage potential conflicting uses in the portion of the Hudson River and the Croton River within the WRA. The HMP considers local and regional needs, the competing needs of recreational boating and fishing, habitat and other natural resource protection, water quality, public access, and recreation, open space and aesthetic values.

The Village of Croton-on-Hudson does not have a municipally-operated harbor. Within the Village boundaries, there are two private marinas, the Croton Yacht Club and the Half Moon Bay Marina. Additionally, there are two public boat launches located at Croton Landing Park and the southern end of the Croton-Harmon Train Station parking lot (Echo Canoe Launch). These facilities are spaced far enough apart along the Village's waterfront that are no documented or anticipated issues of conflict, congestion or competition. The private harbors maintain buoys and signage to ensure all boaters follow navigation guidelines in shallow waters. For example, the Croton Yacht Club recently adopted a Navigation Aid and Barge Sign Plan to ensure compliance.

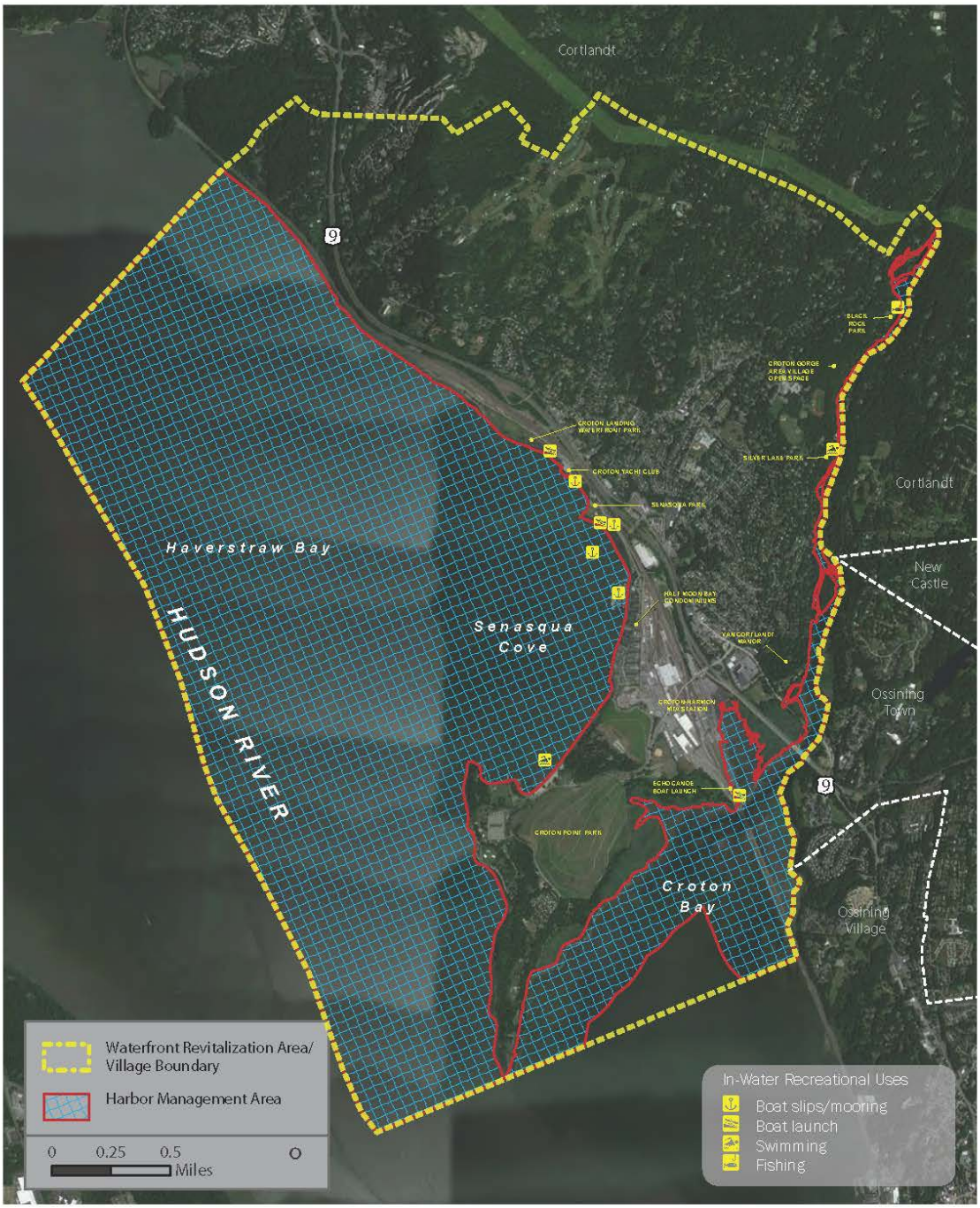
The nearshore areas of Croton-on-Hudson (those within the HMP boundary area) are patrolled by the Village of Croton-on-Hudson Police Department marine unit, the Westchester County Police Department marine unit and the United States Coast Guard.

Emergency incidents in the nearshore areas would also be responded to by the marine unit of the Croton-on-Hudson Fire Department.

Pursuant to 19 NYCRR Part 603, the HMP boundary of the Waterfront Revitalization Area is provided in Figure 8. The boundary includes the Croton River and the Hudson River within areas that are 1,500 feet of the shoreline and within the municipal boundary.

Pursuant to 19 NYCRR Part 603.3 the contents of the HMP have been integrated into the LWRP document. Information on the required topics, issues, etc. can be found Appendix B.

Figure 8: Harbor Management Area



CROTON-ON-HUDSON LWRP FIGURE 8: HARBOR MANAGEMENT AREA

CROTON-ON-HUDSON, NY Source: Westchester GIS BFJ Planning

Jurisdiction and Management of Hudson River

Haverstraw and Croton Bays are located within Regulated Navigation Area § 165.165 as defined by Chapter 2, U.S. Coast Pilot 2, and are governed by the rules and regulations set forth therein. The U.S. Coast Guard is the Federal Authority tasked with enforcement. Any pleasure vessel, whether propelled in whole or in part by mechanical means, must be registered with the New York State Department of Motor Vehicles.

Regionally, the Westchester County Police Department Marine Unit conducts police operations upon the navigable waterways in conjunction with other State and local police and fire agencies. The unit maintains a visible law enforcement presence in an effort to enhance boater safety and security and to facilitate safe community events along the shoreline. The Marine Unit also conducts rescues of boaters or swimmers in distress and removes dangerous boaters or vessels from the water.

The Croton Volunteer Fire Department operates three marine units. Its primary vessel is a 24-foot fireboat that responds to all emergencies in the Hudson River most of the year. The other two units respond to all water rescue incidents in areas other than the Hudson. The members from all five companies are trained for and respond to water incidents; however, the members of Harmon Engine Company and Croton Fire Patrol have the responsibility of maintaining these vessels.

Mooring space is available at the Senasqua Boat Basin to residents and non-residents. The Croton Yacht Club, which operates on land leased from the Village, also provides a marina for boats. Rules and Regulations for the boat basin can be found in Appendix B.

Jurisdiction and Management of Croton River

Locally, the Village of Croton-on-Hudson regulates boating activities within the portion of the Croton River lying within the Village boundaries northeast of the railroad bridge. Chapter 83 of the Village of Croton-on-Hudson Code, Boats and Boating, encompasses the Village navigational laws governing the operation and mooring of watercraft in the Croton River. The regulations pertain to the portion of the Croton River lying wholly within the boundaries of the Village of Croton-on-Hudson northeast of the Railroad Bridge.

In this area, speed limits are set at 5 miles per hour, and moorings within the river are prohibited (except by property owners at the shoreline of their own property). The discharge of sewage, garbage or other waste material from any boat is also prohibited.

Other rules and regulations for the Kayak/Canoe Rack at the Echo Canoe Launch and for Silver Lake can be found in Appendix B.

e. Issues and Planning Considerations

The following is a list of current issues, considerations and objectives regarding future development, use, and preservation of areas within the Harbor Management Plan Area.

Public Health, Safety, and Welfare

Use of the harbor and the waterfront areas should be properly managed to assure the most orderly and efficient use, reduce and avoid conflicts among competing uses, and otherwise provide for the continued health, safety, and welfare of everyone who uses and enjoys the HMP area.

Public Access to the Waterfront

The Village's waterfront is characterized by a significant amount of public open space and recreational use however, such resources are constrained by limitations upon physical access to the waters of the Hudson and Croton Rivers. The Village supports measures that will increase waterfront access in an environmentally sound manner.

Water-dependent recreational use at Silver Lake, Black Rock Park, Croton Point Park, Senasqua Park, Croton Landing Park, Mayo's Landing, Echo Canoe Launch and the Croton Yacht Club should be maintained and improved where appropriate. In addition, the provision of public access to the water's edge and specifically to water-dependent uses at the Half Moon Bay site and at any other privately held sites should be enforced.

Specifically, the Village-owned land adjacent to the commuter parking lots at the Metro-North railroad station, the site of the Echo Canoe Launch, is an important recreational resource. There is an opportunity to upgrade this property and improve maintenance so as to enhance public access to the Croton River and Bay and the Hudson River. Improvements would include maintenance and improvement as necessary of the boat ramp; exploring additional parking opportunities for the ramp; and enhancing walkways, benches, signage and wayfinding measures. The existing small boat storage facility is well utilized, and the Village may expand it in the future to accommodate more boats.

The Village will also continue to pursue opportunities to improve access to the waterfront for vehicles, pedestrians and bicyclists. Pedestrian access is available in some areas, but the safety of such access should be improved. Enhanced pedestrian paths could be provided at Echo Canoe Launch and at Black Rock, where the linkage to a Croton River Gorge Trail would mean the development of a footpath or sidewalk. The potential exists for a future pedestrian link from Croton Landing Park to Oscawana County Park in the Town of Cortlandt, with a possible connection to the Graff Sanctuary in Croton.

The Village recognizes that while the Croton River is within the boundary of the Village, the Towns of Cortlandt, New Castle, and Ossining are located on the eastern side of the River. Some people access the River from the eastern shore. To the extent practical, the Village should coordinate harbor management initiatives with these neighboring communities. This coordination should be for the purpose of addressing any common interests and concerns that may affect the Croton River, including, but not limited to, concerns for boating safety, protection of coastal resources, and water quality.

Recreational Boating

Opportunities for recreational use of the HMP area, consistent with the Village's capacity to support that use without the occurrence of significant adverse impacts on environmental quality or on the public's health, safety, welfare, and enjoyment will be maintained and enhanced.

Recreational use of powerboats on the waterfront sites should be strictly monitored so as to ensure that such uses are compatible with existing forms of recreational use. Enforcement of regulations related to boat speed, turbidity, safety and mooring activities must be undertaken by the proper authorities. Such regulations are determined at the Federal, State and local level. Chapter 83 of the Village Code (Local Law #9 of 1977) regulates the use of power boats on the Croton River and Bay. Such regulations include limits on boat speed, mooring and discharge of waste into the Croton River and Bay. However, no such restrictions are in place regarding the use of boats within the Village's jurisdiction along the Hudson River.

To the extent practical, the Town should coordinate harbor management initiatives with the Croton Yacht Club. These initiatives include proper signage in the harbor and channels, the coordination of debris removal from the harbor and nearshore waters as practical and the limitation of docked vessels to ensure there is no conflict, congestion or competition for space.

Human-powered boating activities such as rowing, canoeing, and kayaking conducted in a safe and environmentally sound manner, including organized events, should be encouraged and supported in the HMP area, in balance with other beneficial recreational and commercial uses, and in a manner that avoids or minimizes the risk of conflict with other vessels, including vessels operating in any federal navigation project. Human-powered vessels should not operate in a manner that poses a hazard or significant adverse impact to navigation.

Continued operation of sailing classes and small craft training programs is supported; such programs should be conducted in accordance with all applicable boating laws, regulations, and ordinances, and should not operate in federal navigation channels and

any designated navigation fairway in a manner that poses a hazard or significantly adverse impact to navigation.

Continued recreational areas at Croton Point Park, Senasqua Park, Croton Landing Park, Croton Yacht Club, Black Rock, Silver Lake and Paradise Island should be maintained. The Village also encourages any effort to improve water quality which would enable the public to swim and fish in the coastal water.

Environmental Quality

Because all wetlands, water-bodies and watercourses are presumed to be of importance, their protection, preservation and proper maintenance and use is essential to the health, safety, economic and general welfare of the citizens of the Village. Protection, preservation and proper maintenance and use of the Village's wetlands, water-bodies and watercourses shall be provided by preventing damage from misuse and mismanagement, erosion or siltation; minimizing disturbance; preserving natural habitats; and protecting against flooding and pollution.

Of particular note are the Croton River and Bay and Haverstraw Bay, which are designated Significant Coastal Fish and Wildlife Habitats, which are particularly sensitive to changes in water quality, turbidity or sedimentation, flows, temperature, salinity, and pollution. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants may result in significant adverse impacts on fish populations.

Runoff from the parking areas at the Croton Harmon Station are a particular concern as the property is directly adjacent to the Croton River and Bay. Other areas of concern are the Shoprite shopping center on South Riverside Avenue, the Route 9/9A roadway and the Metro-North train station and repair yards. The Village should work with private property owners, NYS DOT and MTA to reduce stormwater flows and improve catchment basins, on-site stormwater treatment, and improved maintenance and cleaning of catchment basins and surface areas. These recommendations are supported by the Indian Brook-Croton Gorge Watershed Conservation Action Plan.

Another concern to the Croton River and Bay major tributary system are the potential effects of upstream disturbances, including water withdrawals, impoundments, stream bed disturbances and effluent discharges. Establishment of minimum flow requirements for the Croton River up to the first impassable barrier to fish has had a significant beneficial effect on the area; however, under drought conditions, releases from the Croton Reservoir can be reduced to zero. Minimum flow requirements for the Croton River should be maintained up to the New Croton Dam. The Village should work with NYC DEP to improve inter-agency communication about the conservation flow. A study of mandated base flows is needed to ensure the NYC's Water Supply needs do not

negatively affect the Croton River watershed downstream from the New Croton Dam. This would require additional investigation into the current demand on the Croton River water supply needs and the ecological implications inter-basin exports of water have on downstream ecological health.

Other Water-Enhanced Uses along the Waterfront

The concept of a waterfront restaurant, or another use at the southern end of Croton Landing Park, adjacent to the Croton Yacht Club, has been discussed by the Village for years. In 2001, the Village conducted a feasibility study of alternative uses for a 13.4-acre property which included the Croton Yacht Club (CYC) and Croton Landing Park. As part of the study, which included a community survey, respondents noted that a passive recreation area was desired; however, a restaurant was a preferred use if any commercial development were to occur within Croton Landing Park. The Village should continue to engage and work with the community to evaluate the community's support for new uses in this location. If a restaurant were to be developed at the site, it would be situated so as not to conflict with any water-dependent uses. Existing public access to the waterfront would need to be maintained, specifically the marina at the Croton Yacht Club and the boat launch and riverfront path at Croton Landing Park. Existing locations used for fishing shall be maintained.

E. UNDERUTILIZED, VACANT, OR DETERIORATED SITES

Most of the WRA is built out; however, there are a few remaining vacant or underutilized sites. Most of the development potential exists in the North End planning area of the Village, where there are a few remaining large tracts of open land. These and other vacant or underutilized sites are discussed in more detail below.

The Hudson Riverfront Planning Area

Most of the developable land in this section is currently utilized. There are a few scattered vacant parcels in the residential area west of Route 9 in the northernmost portion of the village. This area is zoned RA-40 (1-acre residential lots).

Croton River Basin Planning Area

Most of the developable land in this area is utilized. The vacant parcels are scattered throughout the single-family neighborhoods which are zoned either RA-25 or RA-9.

Upper Village/Harmon Planning Area

Like the Hudson Riverfront and Croton River Basin, most of the developable land is currently utilized. Vacant parcels are scattered throughout the single-family neighborhoods. There is a 2.4-acre vacant parcel at the intersection of Maple Street and Municipal Place, which is zoned for commercial use (C-2) and is in the Municipal Place Gateway Overlay Zoning District. This parcel is currently in the development process and is expected to contain 33 affordable housing units when constructed.

North End Planning Area

Several large tracts of open land and many smaller parcels are to be found in the North End. Its present low-density use (except in the extreme north part) and remaining large tracts of open land mean that opportunities for development are real considerations. Most of this vacant land is situated on hilly terrain from which the Hudson River may be viewed. How and when the land in this area is eventually used will have an impact on the visual, environmental and economic character of the Village of Croton-on-Hudson and its WRA. Although there are large areas of open land in the North End, development potential is somewhat limited due to the hilly, wooded, rocky nature of land in the area, combined with the lack of transportation infrastructure.

There are various privately owned tracts that are in various stages of planning. A former commercial property on South Riverside Avenue is being developed into approximately

40 units of housing. Another noteworthy vacant area includes 13.3 acres off Mt. Airy Road near the northern border of the Village, which is zoned RA-40.

F. OPEN SPACE, PARKS AND RECREATIONAL RESOURCES

Croton Landing Park

The extensive network of parks, trails and open space throughout Croton-on-Hudson takes up almost one-half (45%) of the Village's land area. The largest and most notable is Croton Point Park on the Hudson River waterfront. Although not all open space is available for public recreation or use (utility and transportation sites, privately owned vacant undeveloped lands and common space areas at residential developments), this extensive and varied network of open space contributes to the semi-rural character and open vistas of the Village (Figure 9, page II-33)). A list of each of the existing park and recreational facilities in the Village, including Village-, school- and County-owned facilities, nature preserves and private recreation is below. Additional details about parks and opens spaces found along the waterfront are discussed in Section II-D: Water-Dependent and Water-Enhanced Uses.

Table 3: Open Space, Parks and Recreational Resources

Name and Location	Size (acres)	Features and Activities	Ownership
Parks			
Dobbs Park (Maple Street/Route 129)	1.9	Baseball field, basketball court, playground	Village
Duck Pond Park (Bungalow Road off S. Riverside Avenue)	2.7	Baseball field, basketball court, Playground, ice skating on pond in winter	Village
Firefighter's Memorial Field (Gerstein Street, behind CET Elementary School)	9.8	Softball field	Village
Senasqua Park and Boat Basin (Elliott Way)	4.6	Boat launch ramp, movies and evening concerts during the summer, pavilion, picnicking, windsurfing, playground, mooring and boat storage space, sailing lessons (Croton Sailing School)	Village
Silver Lake (Truesdale Drive)	13.5	Freshwater swimming in Croton River	Village

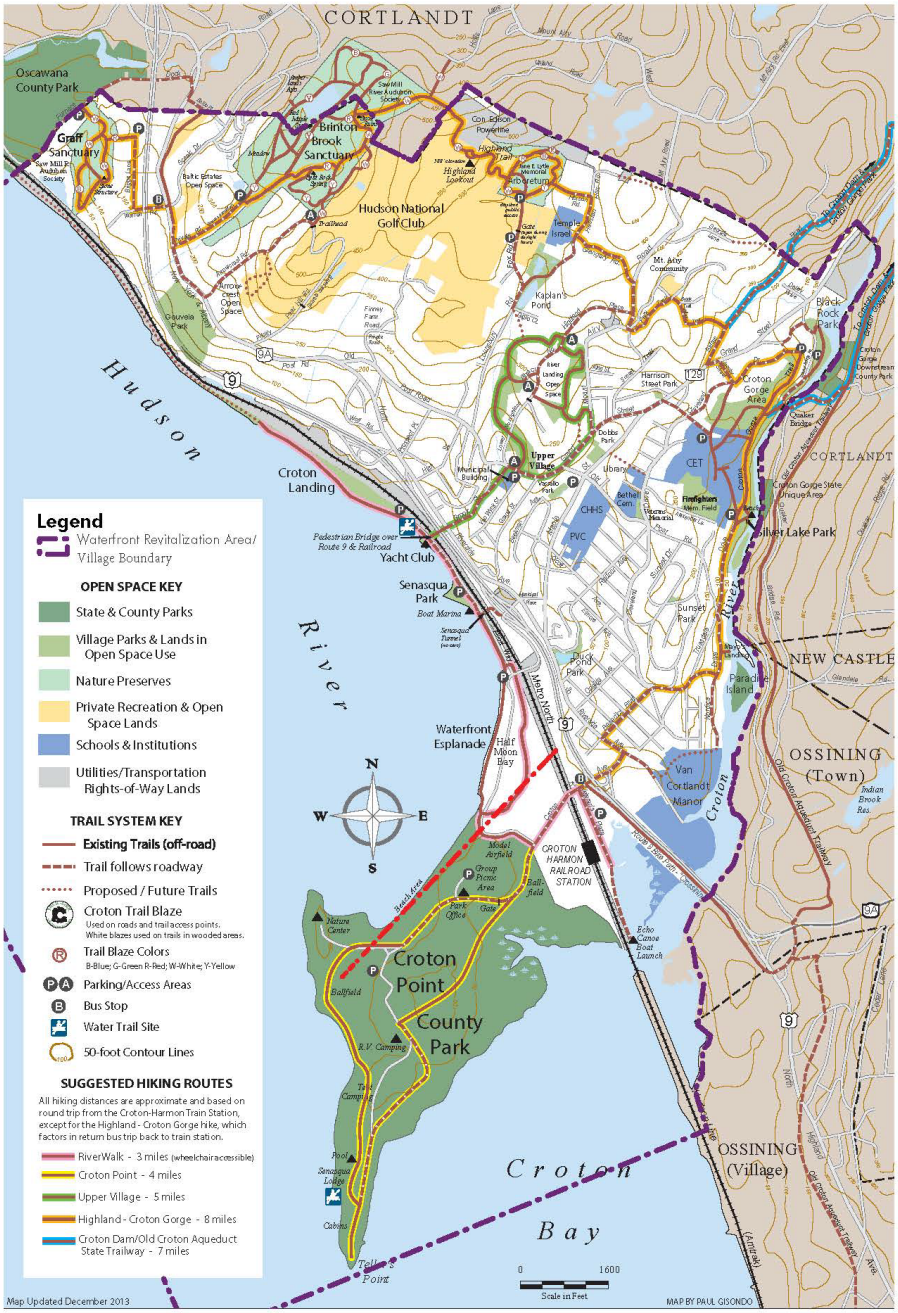
Table 3: Open Space, Parks and Recreational Resources

Name and Location	Size (acres)	Features and Activities	Ownership
Sunset Park Playground (Sunset & Lexington Drives)	0.4	Playground	Village
Harrison Street Park (Harrison Street)	0.3	Playground	Village
Black Rock Park (Quakerbridge Road)	10.5	Fishing, trail access, picnicking, dog park	Village
Vassallo Park (Old Post Road & Grand Street)	1.1	Outdoor stage, open grass area	Village
PVC Middle School Tennis Courts (Olcott Avenue)	0.5	Three clay tennis courts	School
Kaplan's Pond (Lounsbury Road)	8.5	Pond, wetland area, natural preserve	Village
Croton Landing Park (Elliott Way)	12.2	Passive recreation, multipurpose playing fields, boat launch and fishing	Village
Echo Canoe Launch (south end of station)	1.17	Canoe, kayak and small boat launch and fishing	Village
Croton Point Park (Croton Point Ave)	503.8	Camping, fishing, children's play area, hiking, concerts, craft shows, and guided walks held throughout the year	County
Paradise Island	22.2	Undeveloped island in Croton River accessible by boat	County
Fireman's Island	1.1	Undeveloped	Village/State
David J. Manes Memorial Field (downhill from Firefighter's Field)	N/A	Multi-purpose ball field	Village
Spencer Field (Gerstein Street, near CET Elementary School)	N/A	School district sports, track	School
Preserves, Sanctuaries and Private Open Space			
Brinton Brook Sanctuary (off Albany Post Road North)	156	Three miles of hiking trails	Audubon Society
Graff Sanctuary (Furnace Dock Road or Briggs Lane)	29	Walking trails	Audubon Society

Table 3: Open Space, Parks and Recreational Resources

Name and Location	Size (acres)	Features and Activities	Ownership
Jane E. Lytle Memorial Arboretum (access road across Hudson National Golf Course)	20.4	Loop walking trail system that connects to Village's Highland Trail.	Village land managed by nonprofit organization
Croton Gorge Area (between CET Elementary School and Croton Gorge Trail)	22	Walking trails	Village
Hudson National Golf Club (Arrowcrest Drive)	260	Golf club	Private
Van Cortlandt Manor (S. Riverside Avenue)	5	Tours of historic house and grounds, picnicking, seasonal events	Historic Hudson Valley
Croton Yacht Club (Elliott Way)	1.5	Private marina, fishing use	Village-owned, leased to Yacht club
Half Moon Bay Marina (Half Moon Bay Drive)	2.2	Private marina	Private

Figure 9: Parks, Open Space and Trails



CROTON-ON-HUDSON LWRP

FIGURE 9: PARKS, OPEN SPACE AND TRAILS

CROTON-ON-HUDSON, NY

Source: Village of Croton-on-Hudson, 2013

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Croton Trail System

The Croton Trails Committee completed a Village Trailway Master Plan in 1993, establishing and mapping an interconnected Village-wide network of existing and proposed trails that link open space sites, and connect to sections of the Old Croton Aqueduct Trailway within Cortlandt and Ossining. The up-to-date map of existing and proposed trails developed by the Village is shown in Figure 9 (page II-33). Other regional networks linked to by trails within the Village include the Route 9 Bike Path (via the "Crossining" over the Croton River), and the Westchester County RiverWalk. In addition, several trails in Croton – the Croton Bridge pathway, Croton Gorge Trail and Croton RiverWalk Trail – are designated by the New York State Hudson River Valley Greenway. Figure 7 (page II-20) shows existing trails, proposed trails, and access areas for vehicles and boats.

Senasqua Park

RiverWalk Trail Signage

The "Crossining" is a one-mile paved path that crosses the Croton River, providing a bicycle/pedestrian connection between Croton and Ossining. It runs parallel to Route 9 between Croton Point Avenue in Croton and North Highland Avenue in Ossining. This route is part of the Westchester RiverWalk, a County-planned 51.5-mile pathway paralleling the Hudson River in Westchester. When completed, it will link village centers, historic sites, parks and river access points via a connection of trails, esplanades and boardwalks. In Croton-on-Hudson the RiverWalk trail is continuous from the Croton River and the Village of Ossining to the northern extent of Croton Landing Park. There is a missing link between Croton Landing Park and Oscawana Park (Westchester County) in the Town of Cortlandt to the North. Access to the waterfront along this segment is limited by the Metro-North Railroad tracks which are located at the water's edge. While the County has long-range plans to extend the RiverWalk trail along this segment, there are no plans in place or dedicated funds to complete the project.

Most of the Village's Hudson River waterfront area is part of the Westchester County RiverWalk trail system and/or the Hudson River Valley Greenway trail system, and is easily accessible to pedestrians. The Village completed a critical section along a very narrow section of Elliott Way between Senasqua Park and the Croton Yacht Club that was difficult for pedestrians to traverse. The improved 775-foot segment includes pedestrian accommodations as well as shoreline stabilization measures.

Waterfront Access

Along the Hudson River, public waterfront access from upland areas is limited to a few locations. Vehicular access is provided at Municipal Place/Half Moon Bay Drive. Public parking is available at the Half Moon Bay Marina parking lot and Senasqua and Croton Landing Parks. Croton Point Park is accessed via Croton Point Avenue.

Brook Street Pedestrian Bridge

Senasqua Tunnel

Pedestrian and bicycle access paths across the railroad tracks are provided at the Brook Street Pedestrian Bridge, the Half Moon Bay Bridge and the Senasqua Tunnel at Municipal Place. The Brook Street Pedestrian Bridge was built by the New York State Department of Transportation (NYS DOT) as part of a project to eliminate the at-grade railroad crossing at Brook Street. The Senasqua Tunnel, once used for vehicular traffic, was refurbished in 2004 and designated for pedestrian and bicycle use only. Vehicular traffic was diverted to the roadway from the Half Moon Bay Bridge running north to the Croton Yacht Club. Sidewalks over the Half Moon Bay Bridge allow for pedestrian access from the riverfront trails into the rest of the Village. The Half Moon Bay complex offers a public waterfront walkway connecting Croton Point and Senasqua Parks. An easement for the walkway was included in the approval process to ensure continued public access; however, access along the walkway is constrained by the narrowness of the walk, the number of spaces in the public parking lot and the use of the area solely for passive recreation, mainly walking. A bike/pedestrian trail is also located behind the Half Moon Bay complex. In addition, there are two Hudson River Valley Greenway-designated water trails in the Village: one at Croton Landing Park (near the boat ramp) and one at the Westchester County Croton Point Park (northern shore).

Public access to the Hudson River for boating activities is presently available at Senasqua Park, a small boat ramp in Croton Landing Park which is along the Hudson River Valley Greenway and the Echo Canoe Launch at the southern end of the Croton-Harmon Station parking lot. Senasqua Park is available to Village residents for sailing boats, boat storage and picnicking. However, access to the park and parking space for boats, trailers and vehicles is extremely limited. The boat marina adjacent to Senasqua Park operates from May to mid-October. Mooring space is available by permit to residents and non-residents. The Croton Yacht Club, which operates on land leased from the

Village, also provides a marina for boats. The recreational uses along the Hudson Riverfront are highlighted in Figure 4 in Section II-B.

Along the Croton River, public access to the waterfront is found at Silver Lake Park and Black Rock Park and Mayo's Landing. Silver Lake and Black Rock have parking facilities for Village residents. Silver Lake allows swimming when a lifeguard is present. Paradise Island, an undeveloped island in the River can be accessed by canoe or kayak.

G. UNDERWATER LAND OWNERSHIP

As indicated in Table 3 and Figure 9, a significant portion of Croton-on-Hudson's Hudson River waterfront is publicly owned, including Croton Landing Park, the Croton Yacht Club property and Senasqua Park (all Village-owned) and Croton Point Park (owned by Westchester County). The two areas of privately owned land along the riverfront are at the northernmost area of the Village (between the Graff Sanctuary and Furnace Dock Road), which is low-density single-family, and the Half Moon Bay Condominiums adjacent to the Croton-Harmon train station and Croton Point Park. This pattern of public land ownership also extends to underwater lands, a discussion of which is below.

Public Trust Doctrine

New York, upon attaining Statehood, succeeded the King of England in ownership of all lands within the State not already granted away, including all rights and title to the navigable waters and the soil under them (Public Lands Law, Section 4; People v. Trinity Church, 22 N.Y. 44, 1860; Langdon v. Mayor, 93 N.Y. 129, 1883). Broadly speaking, the State holds title to all underwater lands not otherwise conveyed away by patents or grants. The State holds title to these tidelands and submerged lands in its sovereign capacity in trust for the use and enjoyment of the public under the *Public Trust Doctrine* (People v. Steeplechase Park Co., 218 N.Y. 459, 1916; Appleby v. City of New York, 271 US364, 1926; Coxe v. State, 144 N.Y. 396, 1895). This legal doctrine emerged from the ancient concept that the sovereign had the right of way, an "incorporeal hereditament," to all navigable streams and waterways; the underlying theory being the protection of the public interest in fisheries and navigation.

State title to the public foreshore and submerged lands, and the power of disposition, is incident and part of its sovereignty, which cannot be surrendered, alienated or delegated, except for some public purpose or some reasonable use for the public benefit, and without impairing rights in the remaining lands and water. Inherent in the nature of public trust lands is that they support diversified and important ecosystems without which many public rights, including fishing, swimming and the like, would be

impossible to enjoy. The public interest demands the preservation and conservation of this vital natural resource against pollution, overuse, destruction and infringement by others, whether public or private.

It is in the public interest that State and other governmental ownership of public trust lands be maintained and, when possible, recovered from private ownership. Where full public ownership no longer exists, the application of the Public Trust Doctrine requires that any remaining rights of the public to use such lands should be preserved and protected for present and future enjoyment.

Occupation of public trust lands by riparian owners for purposes of gaining access to navigable waters should be undertaken in a reasonable manner that does not unnecessarily interfere with the public's right of passage upon, the use of the waters overlying such lands, and other public trust purposes. Considerations of public safety, resource protection and the need for access at a given location may be utilized as factors in determining the level and types of access to be provided. Public use of publicly owned underwater lands and lands immediately adjacent to the shore shall be discouraged only where such use would be inappropriate for reasons of public safety, military security, or the protection of coastal resources.

Underwater Land Ownership

State-owned underwater lands in the Hudson River are managed by the New York State Office of General Services (OGS). The OGS issues grants, leases, easements and other interests for these underwater lands. They also investigate encroachments on littoral rights (the right of an upland owner to access the navigable waters of the river) and administer New York State Navigation Law and Public Lands Law with respect to the location of structures in or on navigable waters. OGS reviews NYSDEC and Army Corps of Engineers comments for proposed projects that affect State-owned bottom lands to ensure that the benefits of the public will not be deprived and that the environment will not be adversely impacted. The OGS strives to achieve satisfaction on the part of all parties involved prior to the issuance of an interest (grant, lease or easement).

Underwater Land Grants and Leases

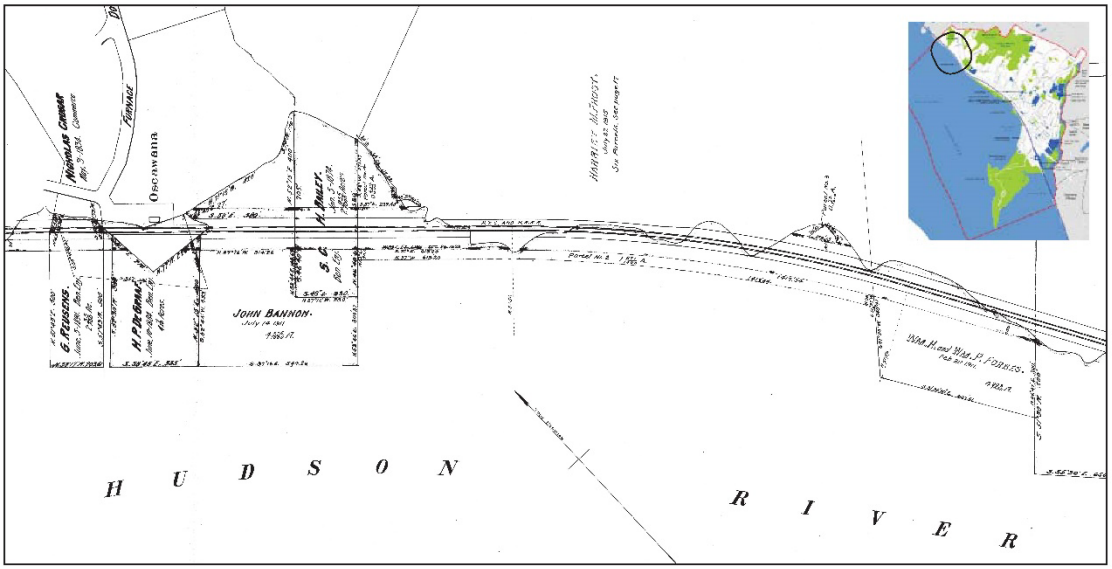
Over the years, a number of underwater land grants have been issued by the State along the Hudson River shoreline in the Village of Croton-on-Hudson (see Figure 10 and Figure 11). These grants were issued for the express purpose of either *commercial* or *beneficial enjoyment*. Grants issued for commerce were given to shorefront businesses for more restricted activities and were usually written with conditions. If the conditions were not followed, the State could bring an action to declare the grant void and thereby recover ownership, per Section 78 of the Public Lands Law. Beneficial enjoyment grants

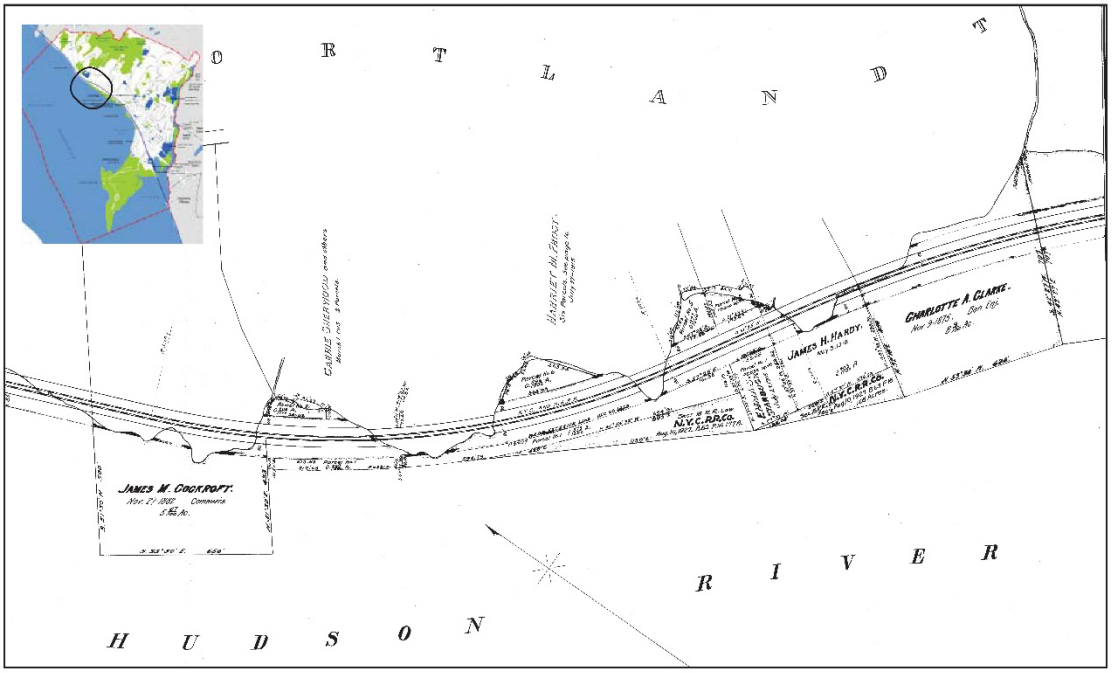
were given to shorefront property owners without restriction and provided more complete title to the underwater lands. In either case, the grantee was given full ownership rights to the bottom lands. Grants for commerce were issued in the early to mid-1800s, and then the issuance of grants for beneficial enjoyment became more commonplace. Around 1890, the State began to restrict the grants issued for beneficial enjoyment as well. Furthermore, in making grants of underwater lands, the State could also impose conditions on the use of these lands.

Water grant index maps were acquired from OGS Bureau of Land Management for the Croton-on-Hudson waterfront area. These maps indicate that numerous underwater land grants were issued in the area, primarily during the late 1800s and early 1900s, and most for beneficial enjoyment. These underwater grant lands consisted of offshore area that was likely used for the installation of docks or other offshore structures, or, in the case of railroad lands, for access to railroad structures along the Hudson River and across the mouth of the Croton River. In general, the present-day form of the Village's Hudson River waterfront is due in part to fill, bulkheading and other activity that occurred through the issuance of the underwater land grants.

Underwater land ownership has been transferred, over the years, to the present-day owners of the upland properties. In the future, when shoreline property owners are proposing the installation of off-shore docking facilities or other structures requiring the use of bottom lands, confirmation of the land grants should be cleared with OGS.

Figure 10: Underwater Land Grants (1)





CROTON-ON-HUDSON LWRP

FIGURE 10: UNDERWATER LAND GRANTS (1)

CROTON-ON-HUDSON, NY

Source: NYS Office of General Services, Bureau of Land Management

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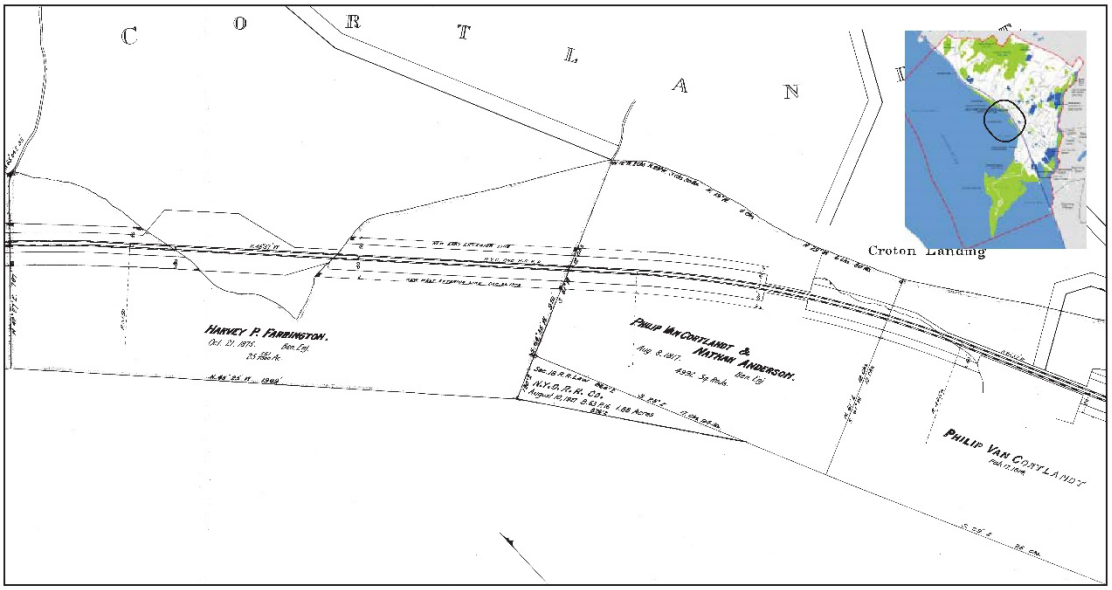
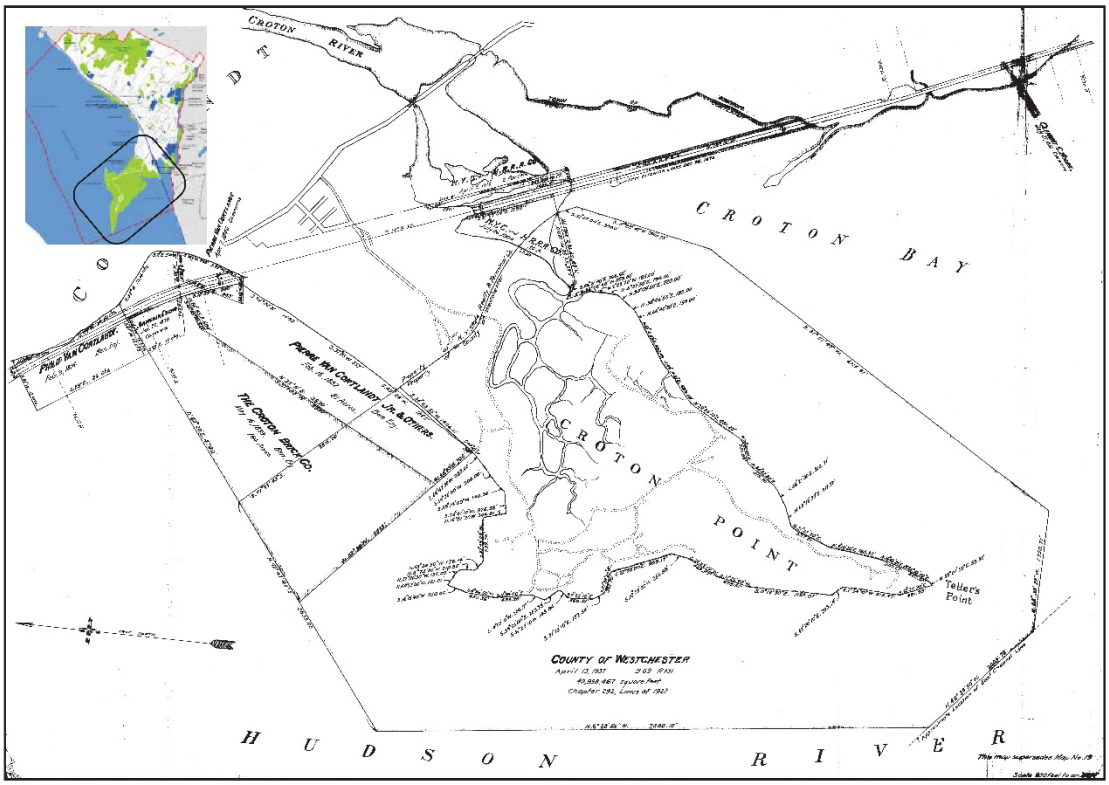
Figure 11: Underwater Land Grants (2)





CROTON-ON-HUDSON LWRP

FIGURE 11: UNDERWATER LAND GRANTS (2)

CROTON-ON-HUDSON, NY

Source: NYS Office of General Services, Bureau of Land Management

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H. HISTORIC STRUCTURES, SITES AND DISTRICTS

Historic Preservation

As discussed in Section 1A, the Village of Croton-on-Hudson has a long and colorful history. The Hudson River was the impetus for its earliest settlements in the 1600s and industries including shipping and brick manufacturing. There are still many buildings dating back to the 19th century and earlier.

The Village has several properties which have been listed on the National or Westchester County registers of historic properties:

Van Cortlandt Manor. A National Historic Landmark, this estate was developed in the 18th century on lands owned by the Van Cortlandt family. The Manor buildings include the stone manor house, a tavern and a reconstructed tenant dwelling. The Manor is owned and operated by Historic Hudson Valley and is open to the public as a working estate and museum, on five acres of land.

Croton North Railroad Station. The Croton North Station, constructed in the 1890s, is located on the west side of Route 9 north of Brook Street. The Station served as the second Metro-North railroad stop in Croton-on-Hudson until the mid-1900s. The site is listed on the National Register of Historic Places.

126 Old Post Road North. 126 Old Post Road North was built in 1905 in the English Cotswold style. The fieldstone house was built from the same stone used in the construction of the Croton Dam. The house is one of a network of structures that were part of the former Wyndhurst Estate and is listed on Westchester County's inventory of historic places.

Baker House, 35 Old Post Road North. The Baker House was constructed in 1927. The house, listed on Westchester County's inventory of historic places, is built of the same stone used in the Wyndhurst Estate houses and for the Croton Dam.

Bethel Chapel, Old Post Road South. Built in the late 1700s, the chapel was home to Croton-on-Hudson's Methodist congregation until it moved into the Asbury Church in 1883. The adjoining cemetery contains graves of several Revolutionary War soldiers and Native Americans. The Chapel is on the National Register of Historic Places.

New Croton Dam. While this structure is in the Town of Cortlandt, and not the Village, the structure is closely linked with the development of the Village. The dam was designed by the Aqueduct Commission of the City of New York and has been owned and operated by the New York City DEP since its completion in 1906. The structure features a waterfall-like spillway, a sprawling retaining wall and a stone bridge.

Heritage Areas

National Heritage Areas involve voluntary partnerships among federal, state and local governments rather than land acquisitions and regulation. Croton-on-Hudson is in the following Heritage Areas:

Hudson River Valley National Heritage Area. Croton-on-Hudson is part of the Hudson River Valley National Heritage Area which includes all of Albany, Orange, Rockland, Putnam, Ulster and Westchester counties and parts of Rensselaer, Columbia, Greene and Dutchess Counties. This designation acknowledges the scenic, historic and cultural resources of the area and encourages participating communities to work with the National Park Service to develop themes relating to such topics as the Revolutionary War, the Hudson River School of Art, the Industrial Revolution and patterns of rural landscape and agriculture.

American Heritage River. The Hudson River is one of 10 American Heritage Rivers designated by the United States Environmental Protection Agency. The designation supports economic, environmental, and historic preservation programs provided by federal agencies that support community's efforts to protect their rivers. The Natural Resources Conservation Service is this program's lead agency for the Hudson River.

Scenic Areas of Statewide Significance

The New York State Department of State has developed a program to identify Scenic Areas of Statewide Significance (SASS). The designation provides special protection to the landscape through review of projects requiring State or federal actions, including direct actions, permits or funding. In addition, municipalities can use their local land use authority to protect scenic resources including using the scenic areas narratives guidance in their LWRP.

There are no designated Scenic Areas of Statewide Significance located within the Village of Croton-on-Hudson.[3] However, in many areas, generally on higher elevations and from portions of Route 9, there are views of the Hudson River. Property owners living on the high land that runs along South Riverside Avenue starting just south of the Duck Pond at Bungalow Road and running south have a wonderful view of the Hudson River. There are also panoramic views from homes along North Riverside Avenue and on the bluffs above North Riverside Avenue.

[3] The Scenic Areas of Statewide Significance dataset can be viewed and downloaded from the NYS Geographic Information Gateway: http://opdgig.dos.ny.gov/#/map

Croton Point Park, Croton Landing Park, Senasqua Park, and the Half Moon Bay promenade are public locations on the Hudson Riverfront offering panoramic views of the Hudson River, both north and south. However, to get to many of these locations, one must travel across Route 9 and, in the case of Croton Point Park, the railroad tracks, which both negatively impact scenic vistas.

Most of the undeveloped land along the waterfront is owned by the Village. Those areas not owned by the Village include the Half Moon Bay Condominium complex, Croton Point Park (owned by Westchester County) and the Harmon Yards (owned by the Metropolitan Transportation Authority). At this time, any possible redevelopment of these properties is remote. Nevertheless, the Village's land use boards (Planning, Zoning and Water Control) would be responsible for ensuring the waterfront remains accessible and as a local scenic resource.

Historic Preservation Programs

Historic Hudson River Towns of Westchester (HHRT) is a consortium of 15 municipalities along the east and west banks of the Hudson River: Haverstraw, Nyack, Peekskill, Cortlandt, Buchanan, Croton-on-Hudson, Town and Village of Ossining, Briarcliff Manor, Mount Pleasant Sleepy Hollow, Tarrytown, Irvington, Dobbs Ferry, Hastings-on-Hudson, and Yonkers, as well as Historic Hudson Valley. These communities participate in joint activities to promote the historic and cultural heritage of the area.

Westchester County developed a Greenway Compact Plan (see Appendix A for synopsis) that includes a regional economic development strategy for the HRTW that promotes tourism while incorporating protection of natural, cultural, and historic resources, main street revitalization, and increased access to the Hudson River. The Plan includes such projects as the Hudson RiverWalk, a promenade that would stretch from Yonkers to Cortlandt, and a Route 9 signage program to draw people to downtowns, historic sites, parks and trailways. The Hudson River Valley Greenway Communities Council adopted the Greenway Plan in June 2001. The Village of Croton-on-Hudson adopted the Plan in November 2001, making it the second one to be adopted in the 13-county Hudson River Valley region. In 2004, the Village received the first Greenway Visions in Planning Award, recognizing its completion of a series of projects that resulted in the preservation of the Croton River Gorge and its parks, trails and well field protection area, as well as the development of Echo Canoe Launch.

I. NATURAL FEATURES

a. Land Resources

Topography

Croton-on-Hudson's topography includes low-lying areas along the Hudson River, Route 9, and the railroad tracks, a fairly deep ravine along the Croton River and a plateau along its northern boundary that in some areas reaches elevations up to 500 to 600 feet within a mile of the Hudson River. This steep terrain has formed a series of ravines and the following watershed drainage areas within the Village (Figure 12 & Figure 13, page II-46, II-47):

- Hudson River Basin: draining to the Hudson River to the west
- Croton Gorge Basin: draining to the Croton River and Bay to the south and east.
- Furnace Brook Basin: draining to the north where the drainage terrain is less steep and flows to lakes and streams, including the Furnace Brook and Lake in Cortlandt.

Croton-on-Hudson's topographical features also create dramatic views that orient most of the Village toward its two riverfronts: the steeper elevations in the northern section of the Village slope down to more level ground to the west along the Hudson and to the southern portion along the Croton River.

Soils and Geology

Croton-on-Hudson is located within a bedrock complex approximately 480 million years in age. Known as the "Manhattan prong," this series of metamorphic rocks extends from southwestern Connecticut and northern Westchester County, south to the southern tip of Manhattan Island.

Soils within the Village of Croton-on-Hudson are typical of those in Northern Westchester, due to similar bedrock structure and glacial activity. In general, the Village is composed of upland soils associations, with glacial outwash, and organic materials along the Hudson River shoreline. Most of its soils are glacial in nature, consisting primarily of till (soils containing rocks and pebbles of irregular size), finely sorted soils (pebbles and stones of regular size), and fine outwash sands. The shoreline of the Hudson River is a mixture of glacial soils, alluvial deposits, and organic materials and Croton Point was formed as a remnant of a glacial delta.

In general, depth to bedrock tends to increase as one goes downslope, leading to alluvial deposits that form the banks of the Croton and Hudson Rivers. Soil depths tend to be deeper along the Croton River ravine closer to the mouth of the Croton River. This is due to the collapse of the original Croton Dam during the mid-19th century, when dammed water broke free, rushing massive quantities of soil, sediment, trees, and even houses, downstream.

Due to irregularity of the bedrock, the soil cover in the Village varies from almost non-existent on tops of the hills to deep at the bottoms. Since the bedrock is irregular on the sloped surfaces, soil depths cannot be generalized. Without taking soil borings, trees can often be used as indicators of depth of soil. On steep slopes where few trees exist, obviously there is not sufficient soil to support them. Often the tree roots extend above the soil indicating that while there was sufficient cover for the tree's original tap roots, insufficient soil exists to allow all roots sufficient burial.

Given the irregular bedrock in the Village, trees and ground covering plants are crucial for slope stabilization. According to the Village's municipal code (Chapter 195), erosion along steep slopes is a major issue for the Village, as this process includes the loss of topsoil, a valuable natural resource, which can result in the disturbance of habitats, degradation of the quality of surface water, alteration of drainage patterns, the gullying of land, obstruction of drainage structures and intensification of flooding. The unstable slopes in the Village can result in "slumping," which produces cracks and gaps in sidewalks, retaining walls, and railroad ties; many Village roads show the results of frost heaving in the late winter and early spring.

Human activities as well as natural activities such as deer over-grazing have both contributed to a reduction in protective vegetative features along slopes.[4] It is the public policy of Croton-on-Hudson as stated in the Village's Steep Slope Law "to preserve, protect and conserve its steep slopes so as to maintain and protect the natural terrain and its vegetative features, preserve wetlands, water bodies and watercourses, prevent flooding, protect important scenic views and vistas, preserve areas of wildlife habitat, provide safe building sites and protect adjoining property by preventing surface erosion, creep and sudden slope failure."

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[4] Croton-on-Hudson's Conservation Advisory Council Recommendations for Controlling the White-Tailed Deer Population, March 8, 2010.

Figure 12: Steep Slopes

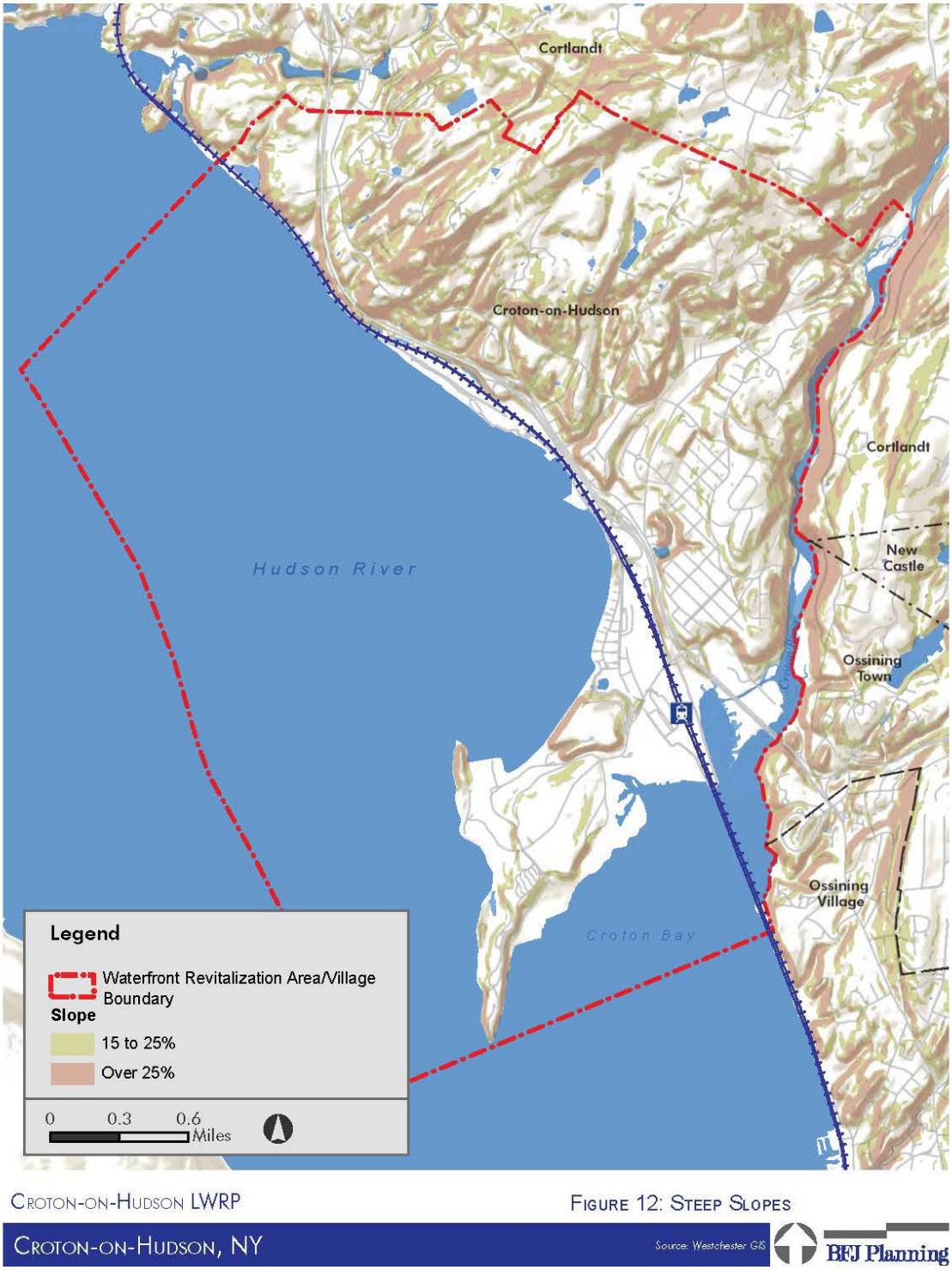
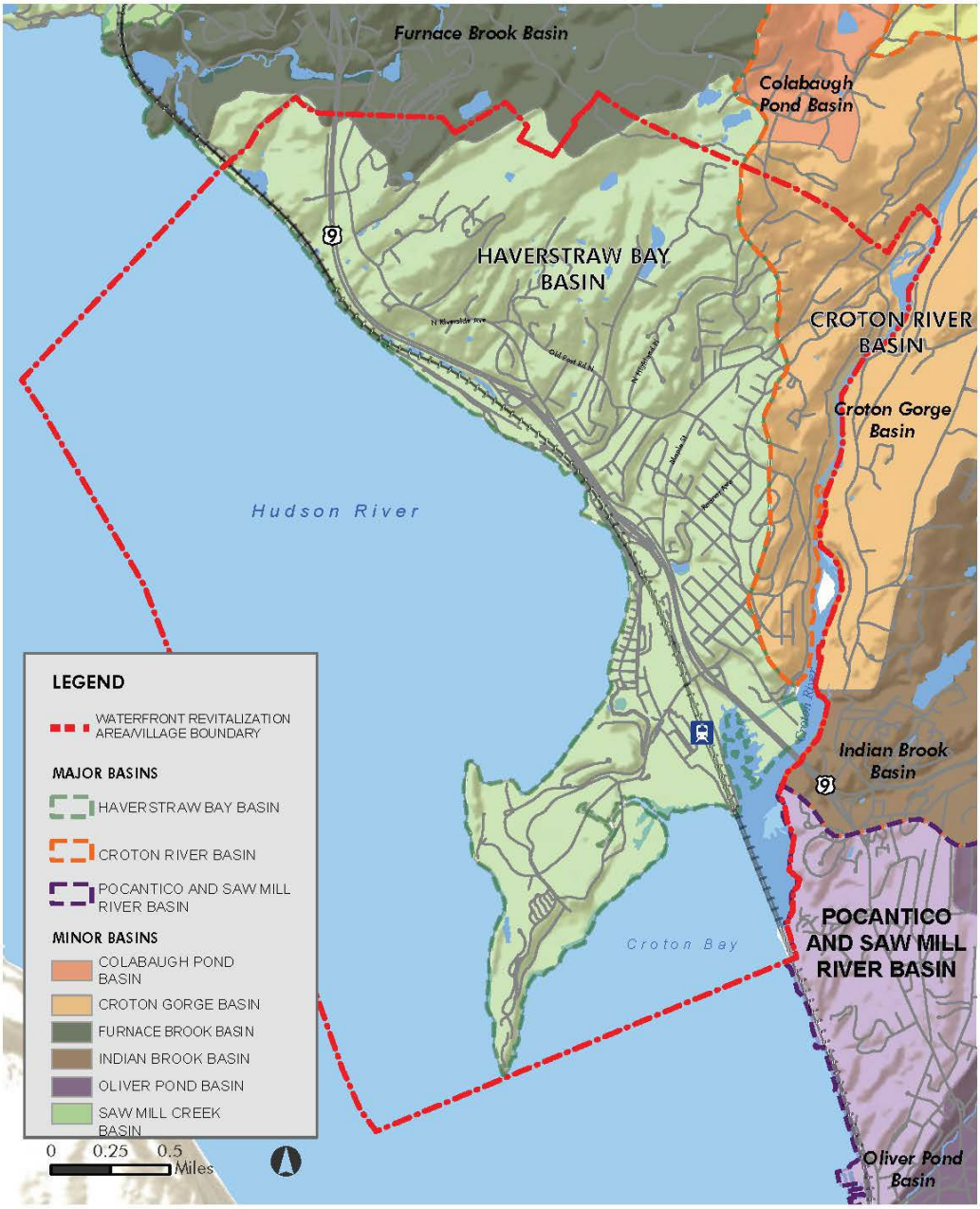


Figure 13: Major and Minor Drainage Basins



CROTON-ON-HUDSON LWRP FIGURE 13: MAJOR AND MINOR DRAINAGE BASINS

CROTON-ON-HUDSON, NY Source: Westchester GIS BFJ Planning

Environmental Remediation

Due to previous industrial uses, several waterfront areas of Croton have required environmental remediation. Three formerly polluted sites have been remediated. Croton Landing Park (former Seprieo Site) was remediated as part of the waterfront park development. Two other federally-designated Superfund sites include the landfill at Croton Point and the PCB-contaminated lagoon at the Metro-North repair yard.

Croton Point Sanitary Landfills (Croton Point Park)

This site was operated as a county landfill from 1927 until 1986, and accepted both municipal and industrial wastes. In 1996, the 125-acre site was remediated and restored for use as a County Park. The footprint of the former landfill site is covered with grass and there are no buildings or structures on top. Remediation at the site is complete. Environmental monitoring is ongoing to determine the effectiveness of the remediation and ensure the protection of public health.[5]

In addition, Westchester County remediated its Railroad 1 Landfill at Croton Point in 2003-2004 by recapping the landfill with a new impervious synthetic membrane. The entire surface of the landfill was regraded, and new underdrains and groundwater monitoring wells were installed, along with a maintenance building used by County staff to monitor the landfills. The landfill re-capping project reduced infiltration of surface water and the subsequent generation of leachate, which if not controlled would migrate into and impact the Hudson River.

Harmon Railroad Yard - Waste Water Area

Years of Metro-North railroad repair yard operations resulted in the contamination of its wastewater treatment plant lagoon and pond system, the surface soils next to the lagoon and components of the original Wastewater Treatment Plant for the facility. Remediation of these elements was substantially complete by May 1996. Later investigation found that the non-aqueous phase liquid (NAPL) around the former wastewater treatment plant lagoon was the only remaining environmental media requiring remedial action. Remedial actions have reduced the NAPL, and since 2004, tests have not exceeded concentrations that would deem the NAPL as a hazardous waste. Remedial efforts are on-going to remove NAPL to the extent possible. [6]

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[5] New York State DEC. Environmental Site Remediation Database: Croton Point Sanitary Landfill. http://www.dec.ny.gov/cfmx/extapps/derexternal/haz/results.cfm?startRecord=101&api=0

[6] NYS DEC. Environmental Site Remediation Database: Harmon Railroad Yard - Waste Water Area.

J. WATER RESOURCES

a. Tidal and Freshwater Wetlands

The water resources of the Village define much of its natural character: Hudson River and Croton River and associated freshwater wetlands, the ponds at the north end of the Village and several smaller streams that run from the higher elevations to the lower rivers, and their wetlands. The Croton Water Control Commission reviews all construction within 120 feet of a water body (which includes wetlands). Wetland areas within the Village are located along Croton Bay, in the tidal flats and in a few areas in the northeast section of the Village (Figure 14, page II-51).

According to the New York State Department of Environmental Conservation (NYSDEC), wetlands (swamps, marshes, bogs, and similar areas) are areas saturated by surface or ground water sufficient to support distinctive vegetation adapted for life in saturated soil conditions. Wetlands serve as natural habitat for many species of plants and animals and absorb the forces of flood and tidal erosion to prevent loss of upland soil.[7] In New York, wetlands are regulated at the state and federal level, and in some locations, at the local level as well. Hydric soils are permanently or seasonally saturated by water, and have comparable anaerobic conditions as found in wetlands.

b. Flood Hazard Areas

The Preliminary Flood Insurance Rate Map (FIRM) provided by the Federal Emergency Management Agency (FEMA) shows Special Flood Hazard Areas (SFHA) and the risk premium zones applicable to a community. Figure 15 shows the SFHA, with areas identified as being in the 100-year flood zone, which have a 1-percent chance of being inundated in any given year. The 500-year flood zone indicates areas with a 0.2-percent chance of inundation in any year. There are no areas that have additional hazards due to storm-induced velocity wave action (VE Zones).

The low-lying properties located within the SFHA include Croton Landing Park, the Croton Yacht Club, Senasqua Park, Croton Point Park, Van Cortlandt Manor and a significant portion of the Croton-Harmon Station and parking areas. The Village formerly had a DPW maintenance facility located adjacent to the station parking lot that was within the

[7] http://www.dec.ny.gov/lands/305.html

SFHA. Salt and other road maintenance material leached from the facility into the Croton Bay in the past. The facility was relocated out of the SFHA in 2019.

c. Groundwater and Surface Water Quality

Groundwater Resources

The Village is located immediately adjacent to the Croton and Kensico Watersheds of the Croton Aquifer System. The Croton River has a drainage area of 375 square miles; it is the predominant source of groundwater supply for the Croton-on-Hudson well system. The Village's wells tap into sand and gravel aquifers along the Croton Basin, just northeast of Black Rock Park; this groundwater provides a local source of clean water. More details about groundwater quality and water supply infrastructure are found in Section II.M.b.

Surface Water Resources

The waterbodies in the Village have different NYS DEC Surface Water Classifications. Class A surface waterbodies are associated with water suitable for drinking. The Croton River from the New Croton Dam to the Glendale Lake Tributary (adjacent to Black Rock Park) is the only Class A waterbody in the Village. The water at this location is tapped for the Village's water supply.

Class B waters are suitable for primary contact recreation and any other uses except as a source of water supply for drinking, culinary or food processing purposes. Class B waters in the Village are found along the Croton River from the Glendale Lake Tributary to the tidal portion at its mouth (near Van Cortlandt Manor). The Hudson River within the boundaries of Croton is also classified as Class B. Surface waters at Silver Lake Park are tested for bacterial contamination periodically and during the summer months when the park is open to swimming.

The remaining streams within the Village of Croton (one in the Prickly Pear Hill area, the second running parallel to Lounsbury Road, and the third running parallel to Beekman Avenue), all of which are tributaries to the Hudson River, are classified as Class C. Class C waters are suitable for fishing and fish propagation.

Figure 14: Tidal and Freshwater Wetlands

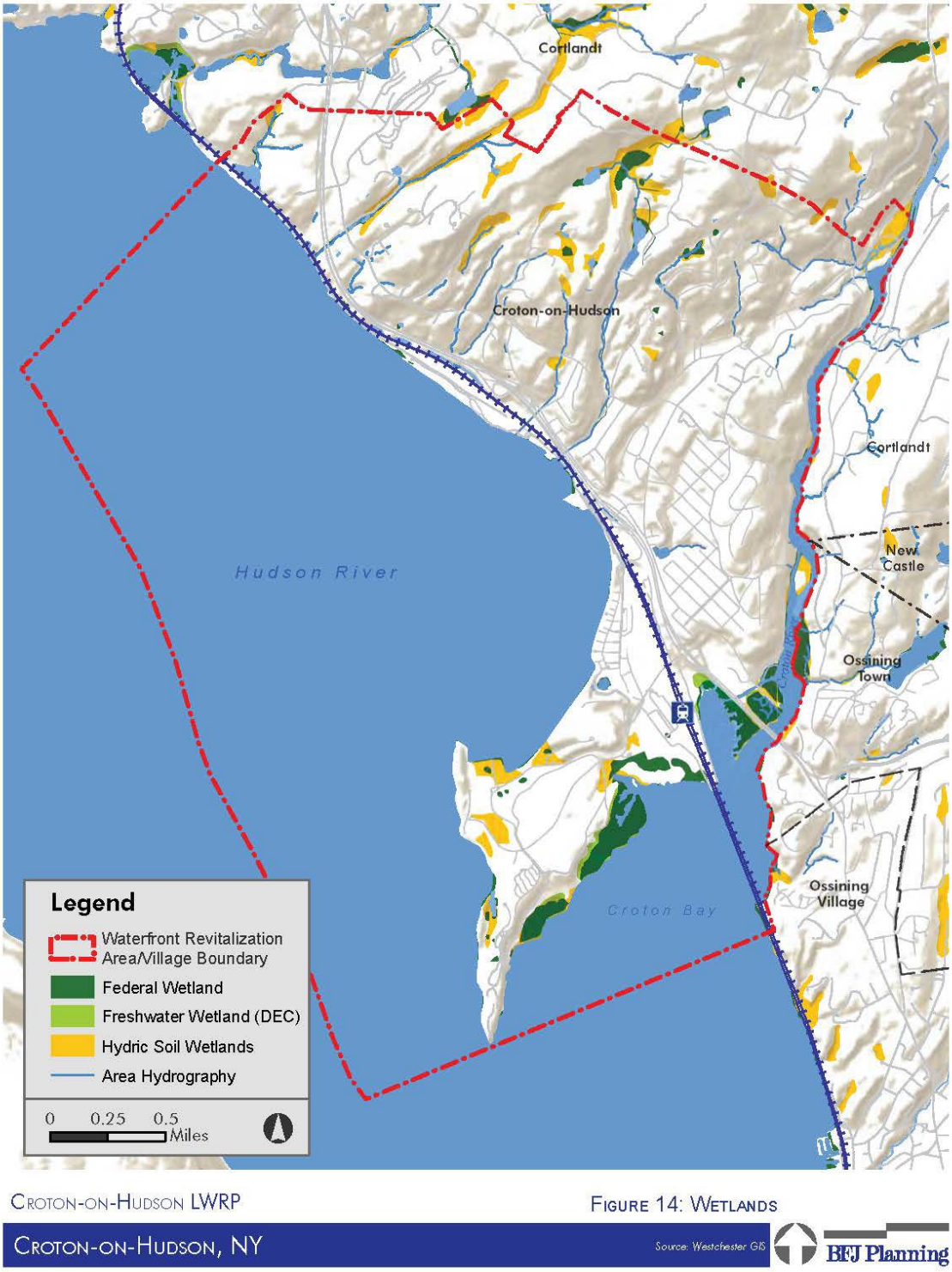
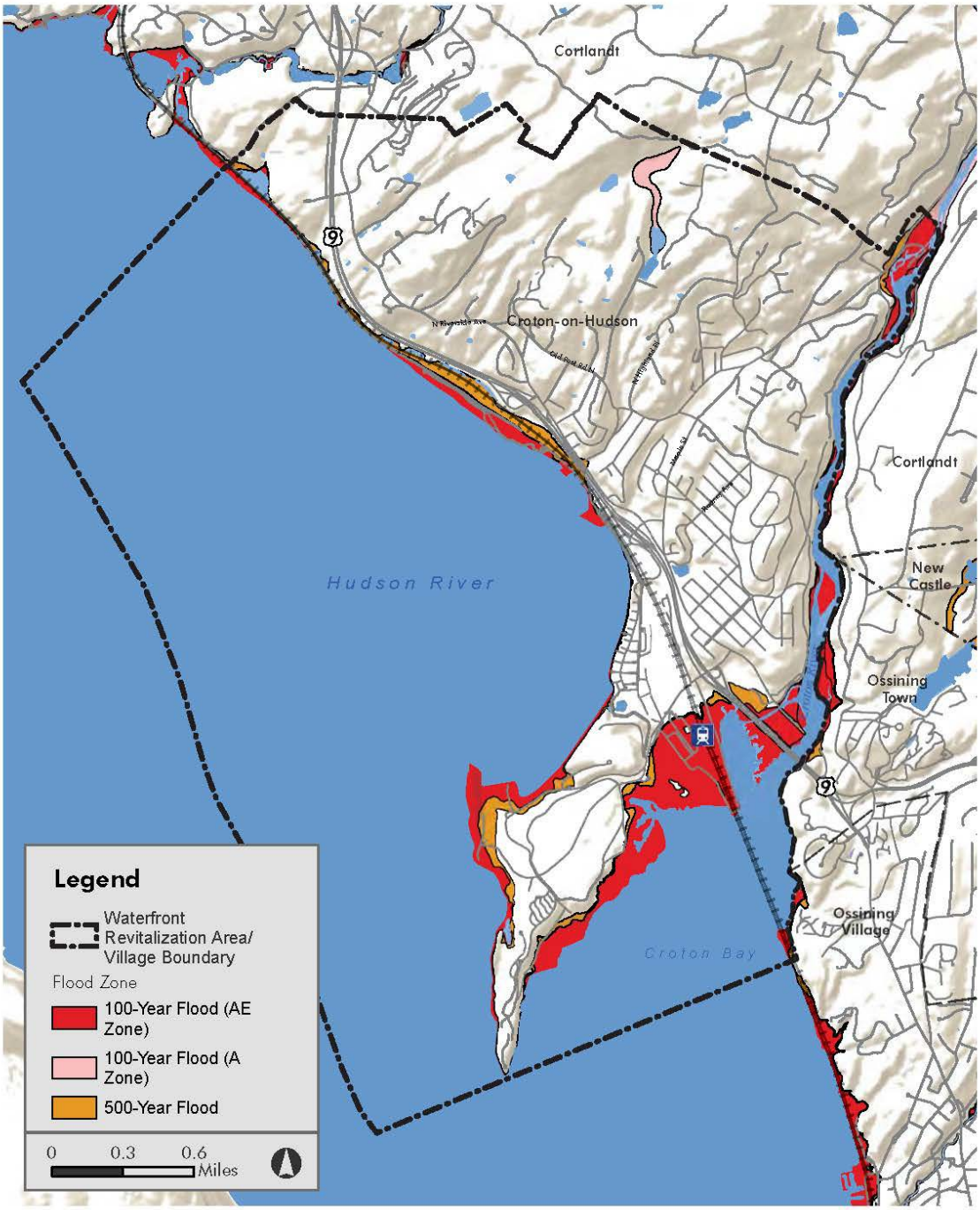


Figure 15: FEMA Special Flood Hazard Areas (SFHAs)



CROTON-ON-HUDSON LWRP FIGURE 15: FEMA SPECIAL FLOOD HAZARD AREAS (SFHAS)

CROTON-ON-HUDSON, NY Source: Westchester GIS BFJ Planning

K. NATURAL RESOURCES AND HABITATS

Significant Fish and Wildlife Habitats

There are two NYSDOS-designated Significant Coastal Fish and Wildlife Habitats in the Village. One is the Croton River and Bay habitat. The Croton River is a relatively large 3.5-mile stream fed by the New York City watershed system at New Croton Dam and the New Croton Reservoir. The other is Haverstraw Bay located in the widest section of the Hudson River estuary. The Bay includes extensive shallow areas and is a place where the freshwater from the upper river mixes with the salt water from the Atlantic, producing a predominantly brackish water habitat.

Croton River and Bay Significant Coastal Fish and Wildlife Habitat[8]

Croton River

The Croton River and Bay fish and wildlife habitat includes an approximate one-mile segment of the river (within tidal reach of the Hudson) and an approximate 1,200-acre shallow bay and mudflat area south of Croton Point. The bay contains extensive beds of submergent aquatic vegetation. The Croton River is a relatively large, warm water stream, with a drainage area of over 375 square miles, and an average annual discharge volume in excess of 500 cubic feet per second. The upper two-thirds of the stream is freshwater and the lower third is brackish due to the mixing of tidal inflows from the Hudson River. The freshwater section includes the Village watershed area with numerous wells supplying the Village with potable water.

During periods of State-declared drought emergency, the freshwater flow can be diverted out of the Croton River for municipal water supplies to a maintenance level in the Croton River of 12 inches. Therefore, the tidal portion of the Croton River is included in the habitat. In addition to flow diversions, Croton River and Bay have been subject to considerable habitat disturbance, including filling of wetlands for waste disposal at the Croton Point Landfill, discharges of stormwater runoff, industrial and residential development, and the presence of road and railroad crossings.

[8] Croton River and Bay Significant Fish and Wildlife Habitat Coastal Fish and Wildlife Assessment Form, NYS DOS. https://dos.ny.gov/system/files/documents/2020/03/croton_river_and_bay_final.pdf

Croton River and Bay comprise one of the largest shallow bay areas in the lower Hudson River sheltered from strong currents and, to some extent, from prevailing winds. Although no unusual concentrations of any fish or wildlife have been documented in Croton River and Bay, it is a productive year-round habitat for resident fish species, such as largemouth bass, brown bullhead, carp, and panfish, and serves as a resting, foraging, and nursery area for anadromous species. As a result of the abundant fish supply and accessibility of the area, Croton River and Bay are very popular for recreational fishing, as a recognized "hot spot" for striped bass. In addition, these fish populations may be important for osprey, a New York State-threatened species, during migration. Locally significant numbers of waterfowl occur in the area during spring (March-April) and fall (September-November) migrations.

There is a popular trout fishery in the Croton River downstream of the New Croton Reservoir that NYSDEC stocks annually with rainbow and brook trout yearlings.

Haverstraw Bay Significant Coastal Fish and Wildlife Habitat

The Haverstraw Bay fish and wildlife habitat encompasses the entire River over an approximate six-mile reach, in the widest section of the Hudson estuary. Haverstraw Bay has extensive shallow water areas which deepen to a dredged navigation channel in the western half of the bay. During much of the year, Haverstraw Bay is a place where freshwater from the upper River mixes with salt water from the Atlantic, producing a predominantly brackish water habitat. Habitat disturbances, such as dredging, filling, bulkheading, waste disposal and pollution from upland and in-river sources, have all been significant at some time during the recent history of this area.

Despite various disturbances, Haverstraw Bay is an important fish and wildlife habitat in the Hudson River estuary. Haverstraw Bay regularly comprises a substantial part of the nursery area for striped bass, tomcod and Atlantic sturgeon that are produced in the Hudson. Other anadromous species, such as American shad, blueback herring and alewife, spawn in upstream freshwater areas, but move south and feed in this area before leaving the River in the fall. Haverstraw Bay is also an important nursery and feeding area for certain marine species, most notably bay anchovy, Atlantic menhaden, bluefish, weakfish, and blue claw crab. Depending on location of the salt front, a majority of the spawning and juvenile Atlantic sturgeon wintering in the Hudson may reside in Haverstraw Bay. A portion of the shortnose sturgeon population, a Federal endangered species, also winters in this area.

Lower Hudson River Estuary

Croton-on-Hudson is one of the many communities located along the Hudson River estuary, which has long been recognized as a valuable state and local resource, as well

as an important part of the North Atlantic coastal environment. The Hudson River is regionally significant as a productive estuary and is one of only a few major tidal rivers on the North Atlantic coast of the United States. The lower Hudson supports regionally significant fish populations as well as populations of wintering and migratory birds that feed on the rich fish and benthic resources. This is the primary nursery and overwintering area for striped bass in the Hudson River estuary, and striped bass from the Hudson account for an impressive portion of the total North Atlantic population.

The estuary contains important spawning and nursery grounds for many commercially valuable fish and shellfish species as well as significant acreage of tidal freshwater wetlands within the State. These wetlands, along with the river's brackish tidal wetlands and stands of submerged aquatic vegetation, contribute essential nutrients which support the Hudson's complex web of life.

Critical Environmental Areas

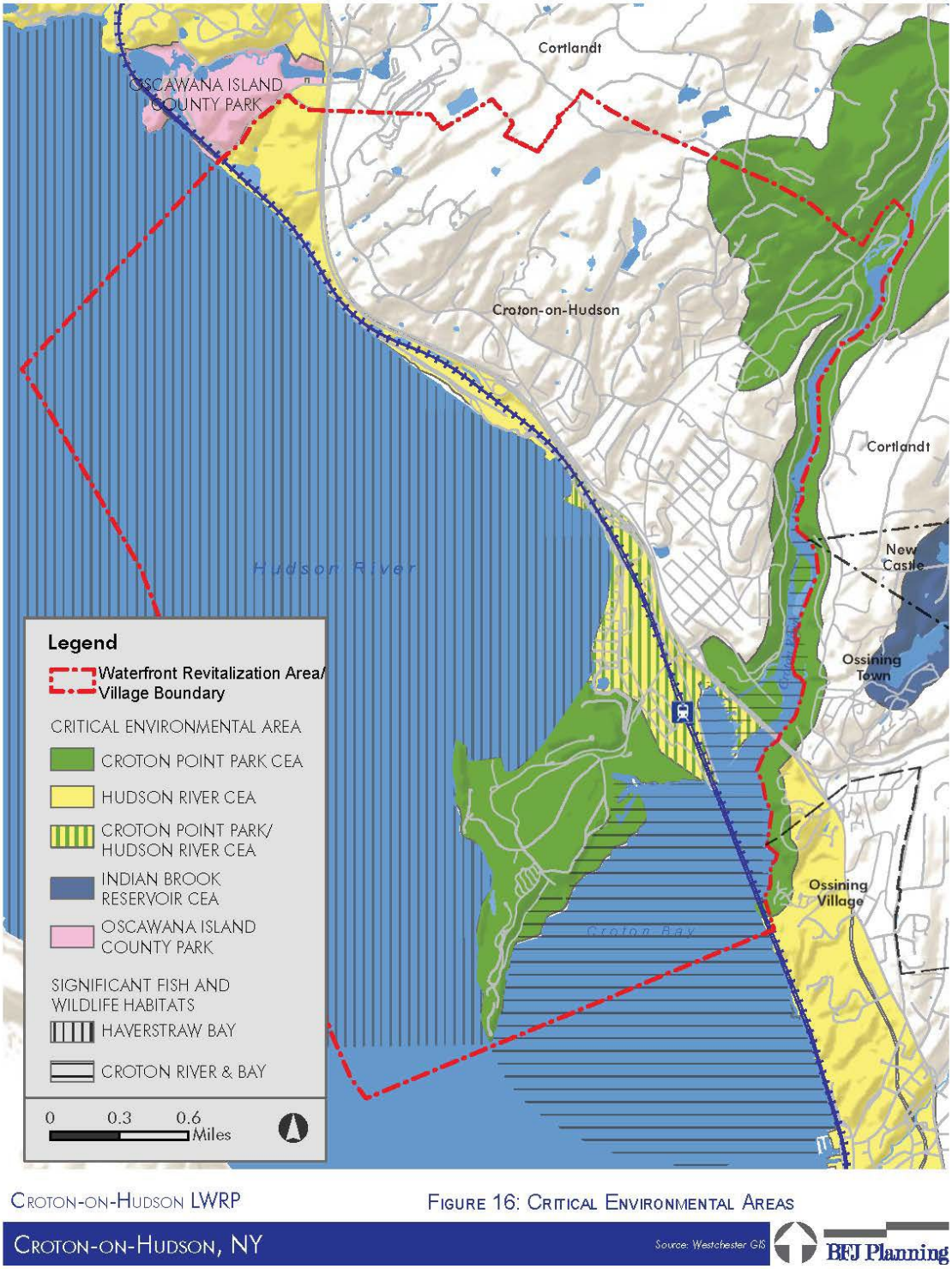
Westchester County has designated two areas within Croton-on-Hudson as Critical Environmental Areas (CEAs): the Hudson River CEA and Croton Point Park CEA (see Figure 16). According to the County, these areas have exceptional or unique character due to their history, ecology, scenery, and recreational opportunities associated with the shoreline.

To be designated as a CEA, an area must have an exceptional or unique character with respect to one or more of the following:

- A benefit or threat to human health;
- a natural setting (e.g., fish and wildlife habitat, forest and vegetation, open space and areas of important aesthetic or scenic quality);
- agricultural, social, cultural, historic, archaeological, recreational or educational values; or
- an inherent ecological, geological or hydrological sensitivity to change that may be adversely affected by any change.

As described in New York State's Environmental Quality Review Act (SEQRA), a CEA has special protection under SEQRA. Following designation, the potential impact of any Type I or Unlisted Action on the environmental characteristics of the CEA is a relevant area of environmental concern and must be evaluated in the determination of significance.

Figure 16: Critical Environmental Areas



L. INFRASTRUCTURE

a. Transportation

State Routes 9 and 9A are north-south travel corridors which pass through the Village. While Route 9 is a limited-access four-lane highway, Route 9A is more of a minor arterial with numerous driveways and intersecting local roads. Roadways such as Route129, Old Post Road and Grand Street collect traffic from local streets in Croton's residential neighborhoods and channel it into arterials. See Figure 17.

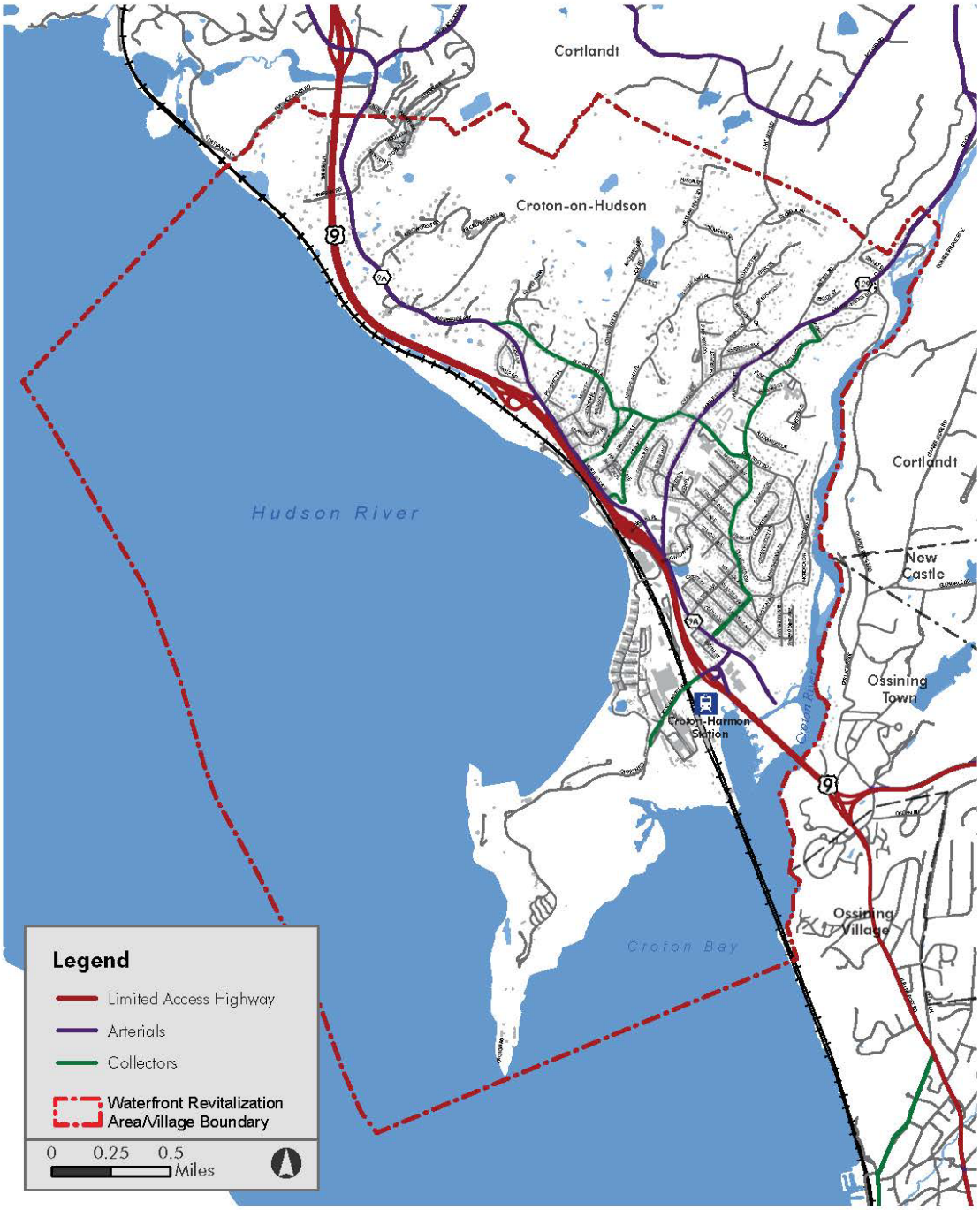
Traffic flow and parking in the Upper Village/Harmon area have become increasingly difficult. Additional commercial parking is needed in the Upper Village area, and parking may be needed in the Harmon area in the future if new development puts pressure on the existing parking supply. Many streets in this area are steep and narrow, particularly those in the "Trails" area, around the Municipal Building and near and bordering on the Croton River. Many houses along these streets were built without garages. As a result, residential parking on Upper Village streets is common where small lots with minimal driveway space cannot accommodate the demands of multi-car families.

Croton-Harmon Train Station

The Croton-Harmon railroad station at the south end of the Village is a regional rail transportation center, providing local commuter service to New York City via Metro-North, and service to points north including Albany, Buffalo, Toronto, and Montreal via Amtrak. Over 100 Metro-North trains stop daily at the Croton-Harmon Station on route to or returning from Midtown Manhattan's Grand Central Terminal. The commute between Croton-Harmon and Grand Central ranges from 45 to 70 minutes depending on the time of day and whether the train is an express or local. Due to the station's location adjacent to a major interchange with Route 9, the area represents a highly visible segment of the community.

The Croton-Harmon Railroad Station is the seventh-largest of Metro-North's stations by ridership. In 2013, 2,665 commuters boarded trains (including transfers) at the station during weekday peak AM commuting hours on route to Grand Central Terminal. Most commuters are from Westchester municipalities (including Croton, Ossining, Cortlandt and Yorktown Heights), although commuters from Putnam, Dutchess and Orange Counties also use the station.

Figure 17: Transportation Infrastructure



CROTON-ON-HUDSON LWRP

FIGURE 17: TRANSPORTATION INFRASTRUCTURE

CROTON-ON-HUDSON, NY

Source: Westchester GIS

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Croton-Harmon Metro-North Railroad Station and Harmon Yards (Source: Bing Maps)

The parking facility at the train station is owned and operated by the Village of Croton-on-Hudson. The Village provides a 2,150-space commuter parking facility at the station, with 1,650 spaces reserved for monthly permit holders and 500 daily spaces. The majority (65%) of parking permit holders live outside of the Village.

Since the 1992 LWRP, Croton-on-Hudson has evaluated a number of alternatives to improve land surrounding the Metro-North train station to better serve future community needs; increase parking supply; improve vehicular, pedestrian, and bicycle access; increase revenue for the village; and improve the overall appearance and image of the train station hub. The Village has completed a project to provide safer accommodations into the parking facility that better balance the needs of all users (vehicular, bicyclists and pedestrians) and provide effective vehicular mobility through the corridor during all periods of the day with appropriate traffic control measures. This was accomplished through the construction of new sidewalks, re-delineation of the existing roadway to accommodate bike lanes, and installation of three new traffic signals and geometric improvements to key intersections. This project was funded from a federal Transportation Enhancement grant, a State Department of Transportation grant, Westchester County funding and the Village's capital project fund.

In 2010, the Village completed a major construction project to alleviate the risk of tidal flooding in 5.3 acres on the parking lot adjacent to Croton Bay. There are about 600 spaces in this area. Due to past flooding and increased demand for train station parking, the Village conducted *a Parking Garage Feasibility Study* to analyze the potential development of structured parking at Croton-Harmon Station (see Appendix A for

synopsis).[9] The study area included the entire parking lot area, which at the time had 2,036 spaces on 47 acres. As described in the report, the overall intent of the feasibility study was to evaluate alternatives that would increase parking capacity to meet future growth, free up portions of the lot for other uses, enhance the station environment and commuter experience by improving pedestrian, bicycle, and vehicular safety and traffic flow, or potentially serve as replacement parking should the flood repaired areas of the lot be impacted by tidal flooding in the future.

The 2011 study found that adequate parking capacity exists at Croton-Harmon Station for the near future, and recommended that the Village continue to monitor parking demand. In 2019, the Village relocated the DPW garage which had been located within the confines of the train station parking lot and added 150 parking spaces.

Bus Service

The Village is served by Westchester County buses on Route 9A, Croton Point Avenue, Riverside Avenue, Benedict Boulevard, Cleveland Drive, Old Post Road South, and Maple Street. These buses provide transportation north through the City of Peekskill to Cortlandt Town Center (the location of a regional shopping center), and south to White Plains, which is a major hub of the bus transportation system for the County.

b. Water and Sewer Infrastructure

Water Supply

Although Croton-on-Hudson is situated close to the New York City-owned Croton Aqueduct System and borders the Croton River, it does not tap into the reservoir system for its water. Instead, its water supply comes directly from sand and gravel aquifers pumped from three deep wells under the Croton River Basin, which are located in the northern portion of the Village, just south of the New Croton Dam. According to a 2004 report by Chazen Companies, in non-pumping conditions, the water table of the well fields is, generally, in equilibrium with the elevation of the river. Recharge to the system comes from sources such as precipitation, surface flow from the Croton River and groundwater flow from upland areas. Well water provides a very pure source of water because it requires only a minimum amount of treatment and avoids the potential

[9] Village of Croton-on-Hudson – Parking Garage Feasibility Study Report, February 17, 2011. Timothy Haahs and Associates, Inc.

problems with pollution run-off that are associated with surface water from the reservoir system. Groundwater pumped from the sand and gravel aquifer is treated with chlorine at the water treatment plant for disinfection purposes.

According to the Village's 2020 Annual Water Report, the water system (Figure 18, page II-66) supplies approximately 8,060 people, in residences, business and industries through approximately 2,500 service connections. Most residents receive water from this system; however, some residents use private wells.

The Village's three active wells are located on Route 129. The wells can produce up to 1.8 to 2 million gallons of water per day. During 2013, the daily average volume of water treated and pumped into the distribution system was slightly more than 1 million gallons per day. The automation of the well pumping system was completed in 2001. Water pumped from the wells is stored in a network of four reservoir tanks located throughout the Village: two tanks in the Mount Airy area, one on Hessian Hills Road and the fourth on the Hudson National Golf Course. The four tanks can hold a total of 2.3 million gallons of water. The capacity (by tank) is summarized in Table 4.

Table 4: Tank Capacity

Tank	Capacity (in gallons)
1. Upper North Highland:	1,250,000
2. North Highland underground:	400,000
3. Hessian Hill Road:	500,000
4. Hudson National Golf Course:	150,000
Total:	2,300,000

Source: Village of Croton-on-Hudson

In 2014, all three wells were refurbished. Work included cleaning the wells, upgrading the pumps and other improvements to meet the regulations related to chlorine contact time. The newly refurbished wells and pumps are expected to operate more efficiently and pump water at a greater capacity than what was previously possible. In 2018, the Village installed a corrosion control system to reduce the presence of lead and copper in the water supply.

Since 2013 the Village has completed a significant water main relining and replacement project in the areas from Cleveland Drive (south of Alexander Lane) to the Croton River, on: Wolf and Cook Lanes, Old Post Road North from High Street to Albany Post Road, Stevenson Place, Mt. Green Road and Elliott Way. These areas experienced severe brown water problems due to the age of the unlined cast iron water mains, some over 110 years old. The Village replaced or added approximately 8,600 feet of new water mains and relined about 31,000 feet of existing water mains for a total of nearly 7.5 miles of water main improvements. The project also included the installation of 50 new or replacement fire hydrants and more than 175 new or replacement water valves.

Drinking Water Quality

The New York State Department of Health (NYS DOH) completed a Source Water Assessment for the Village's water system in 2003. Based on available information, potential and actual threats to this drinking water source were evaluated. The State Source Water Assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells.

The Source Water Assessment has rated three of the wells as having a medium-high susceptibility to microbials. These ratings are due primarily to the fact that the wells are high-yielding wells, drawing from a possible unconfined aquifer, which is a shallow aquifer that occurs immediately below the ground surface and has no overlying protective layer to prevent contamination from potential sources. While these wells were rated as being susceptible to microbials, all water from the wells is disinfected prior to delivery to ensure that it meets New York State's drinking water standards for microbial contamination. The Village monitors the water supply to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants.

The Village's Municipal Code establishes protective land use regulations for the watershed affecting well fields.[10] The Water Supply Protection Code defines the three zones in the watershed which affect the well heads and a degree of regulation and management is provided for each zone. The three-zone system is superimposed on existing land use zones, with the more restrictive requirements prevailing when the zones are in conflict. The three zones are defined as follows and are shown in Figure 19.

- Zone 1: the wellhead protection area, including the cone of influence.
- Zone 2: the recharge area of the aquifer.
- Zone 3: the watershed area tributary to the recharge area.

The health of the three-mile section of the Croton River between the New Croton Reservoir and the Hudson River is highly influenced by management of the New Croton Reservoir. Currently, water levels in the Croton River are regulated as part of the New York City (NYC) Croton Water Supply System, which supplies a portion of New York City's water through reservoirs and tunnels. Although flows in the Croton River can be naturally low due to climate and seasonal conditions, NYC DEP is required to maintain certain baseflow conditions in the river as part of their NYS DEC water withdrawal permit.

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[10] Village of Croton-on-Hudson NY Water Supply Protection, Code of the Village of Croton-on-Hudson NY. Chapter 223: Water, Article II Water Supply Protection.

NYS DEC's draft streamflow standard (a candidate to include in surface water quality standards) proposes a process to arrive at aquatic baseflows for protecting aquatic life below impoundments. Based on this proposed flow standard, the applicable minimum flow or the "conservation flow" for the lower Croton River is 0.5 cubic feet per second per square mile (cfsm) of watershed in "summer" (April through September) and 1.0 cfsm in "winter" (October through March). These conservation flows are similar to minimum flows the U.S. Fish and Wildlife Service recommends for New England waterways.[11]

The release schedule was originally designed to support seasonal use by anadromous fish species. According to a study conducted by the New York State Water Resources Institute at Cornell University, the schedule can sometimes lead to fluctuations in water temperatures, especially during the summer months when cool water is released for baseflow requirements from the bottom of the reservoir. In this instance, the conservation flow is composed of cold (50° F) water. With a little rain or a reduction in the amount NYC is withdrawing for water supply purposes, the reservoir can rise and spill warm (70°s to low 80°s F) water in volumes many times greater than the deep cold water minimum release. When this happens, Croton River water temperatures can fluctuate wildly by as much as 30° F in a matter of only a few hours or days, as the reservoir alternately pulses between not spilling and spilling.[12]

Some fluctuations are normal for a river, but extreme fluctuations can cause increased erosion of the stream banks, excessive silting and drastic temperature changes. This severe variation in water temperature impacts the ecological processes downstream including fish and in-stream wildlife habitats. Data documenting ecological impacts of the New Croton Reservoir on the Croton River are sparse. The available data does demonstrate that the Croton River does experience fluctuations that could adversely affect the river's ecosystem. Additional studies are needed to determine how flow changes actually affect wildlife in the Croton River corridor.

A study conducted by the New York State Water Resources Institute, showed that during certain years, and during certain months of those years, the flow rate in the Croton River below the reservoir is only a fraction of what naturally should be observed in a watershed of this size. The extent to which the reduction in flow to the Croton River influences the water located in the aquifer is not completely known. While NYC DEP is required to maintain certain baseflow conditions, the conservation flow may not be sufficient to

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[11] A Preliminary Assessment of Croton River Hydrologic Alterations below New Croton Reservoir. New York State Water Resources Institute at Cornell University

[12] *Ibid.*

maintain water levels necessary to recharge and protect the aquifer, support fish and wildlife species as well as public recreation on the river. In addition to temperature fluctuations, a study of mandated base flows is needed to ensure New York City's Water Supply needs do not negatively affect the Croton River watershed downstream from the New Croton Dam.

New York City Department of Environmental Protection (DEP) recently completed a $13.4 million project to upgrade certain parts of the New Croton Dam. The project involved reconstruction of the low-level outlet works, which provide critical operational and safety functions, including the management of the conservation flow to the Croton River and the capability to lower the reservoir level in the event of a dam safety emergency. These functions were limited by outdated and inoperable equipment.

Sewer Infrastructure

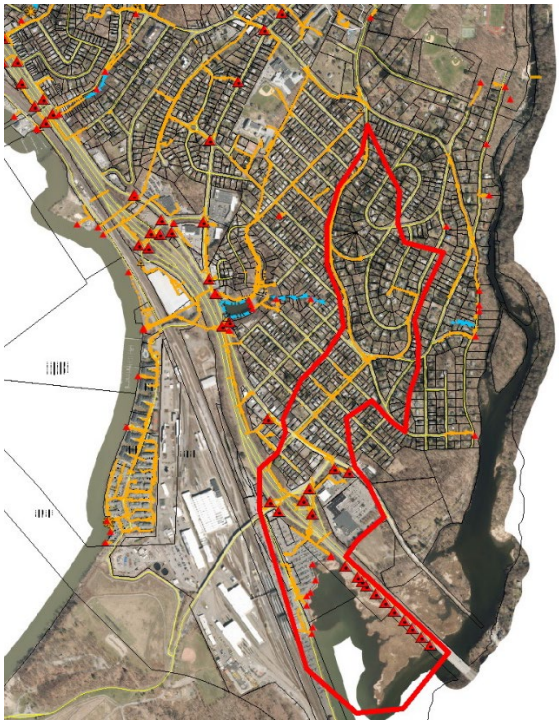
The Village is within the County's Ossining Sanitary Sewer District, which serves the central and southern areas of the Village (Figure 18). According to the Village Engineer, there is sufficient capacity in the system to serve Village residents. Individual septic systems are primarily located in the North End of the Village.

Most of the Village's sanitary sewer system was installed during the 1920s and 1930s, connecting existing houses to the sewer system. Subdivisions constructed more recently by private developers also have sewer connections, as the Village required private developers to install sanitary sewers. However, houses developed after the 1930s by individual residents in the outlying areas of the Village on single lots were often not connected to the system. These homes are served by private septic systems.

Most of the Village's sewer lines are between 80 and 90 years old and are beginning to show signs of age. Some lines are cracking and need to be re-lined or replaced. There are periodic issues with these lines and the Village has focused efforts on manholes and sewer lines that have problems. The Village has also focused on upgrading sewer pump stations in in order to increase the reliability and safety of the stations as well as increasing energy efficiency. The Phase I upgrade to the Nordica Sewage Pump station was completed in 2010 and the phase II improvements are being planned.

Stormwater Infrastructure

Stormwater runoff presents an additional problem to the Village. The Village has taken a significant step in identifying problem areas by developing a map of the Village's stormwater system. In 2003, a Village-wide drainage study was performed by Dvirka & Bartilucci Consulting Engineers (D&B). The study identified 13 drainage basins and provided a brief analysis of each. Since the study was completed, work has been undertaken on many of the basins including the four given the highest priority – the Brook Street, High Street, Grand Street and Batten Road basins. The Brook Street Watershed improvements included the rebuilding of Kaplan's Pond so that it can be drained and utilized as a detention basin before large storm events. Storm drain pipes and catch basins were built along Batten Road to reduce flooding in that area. Storm drains in the Grand Street drainage basin were inspected, but no further improvements are planned. A supplemental report completed in 2011 analyzed a problematic watershed: Georgia Lane. DPW undertook improvements to this area by increasing the diameter of the existing culvert, modifying the existing spillway and constructing a new outlet structure. This work was completed in 2018. Another area of concern is the 170-acre stormwater drainage area that includes the residential area east of Cleveland Drive, the Shoprite shopping center, and the Route 9/9A right-of-way. Untreated stormwater from this drainage area is discharged directly into the Croton Bay, which is detrimental to the health of the estuarine ecosystem. The outfall pipes at this location are maintained by the New York State Department of Transportation (NYS DOT).



Approximate area draining directly into the Croton Bay

Figure 18: Water and Sewer Districts

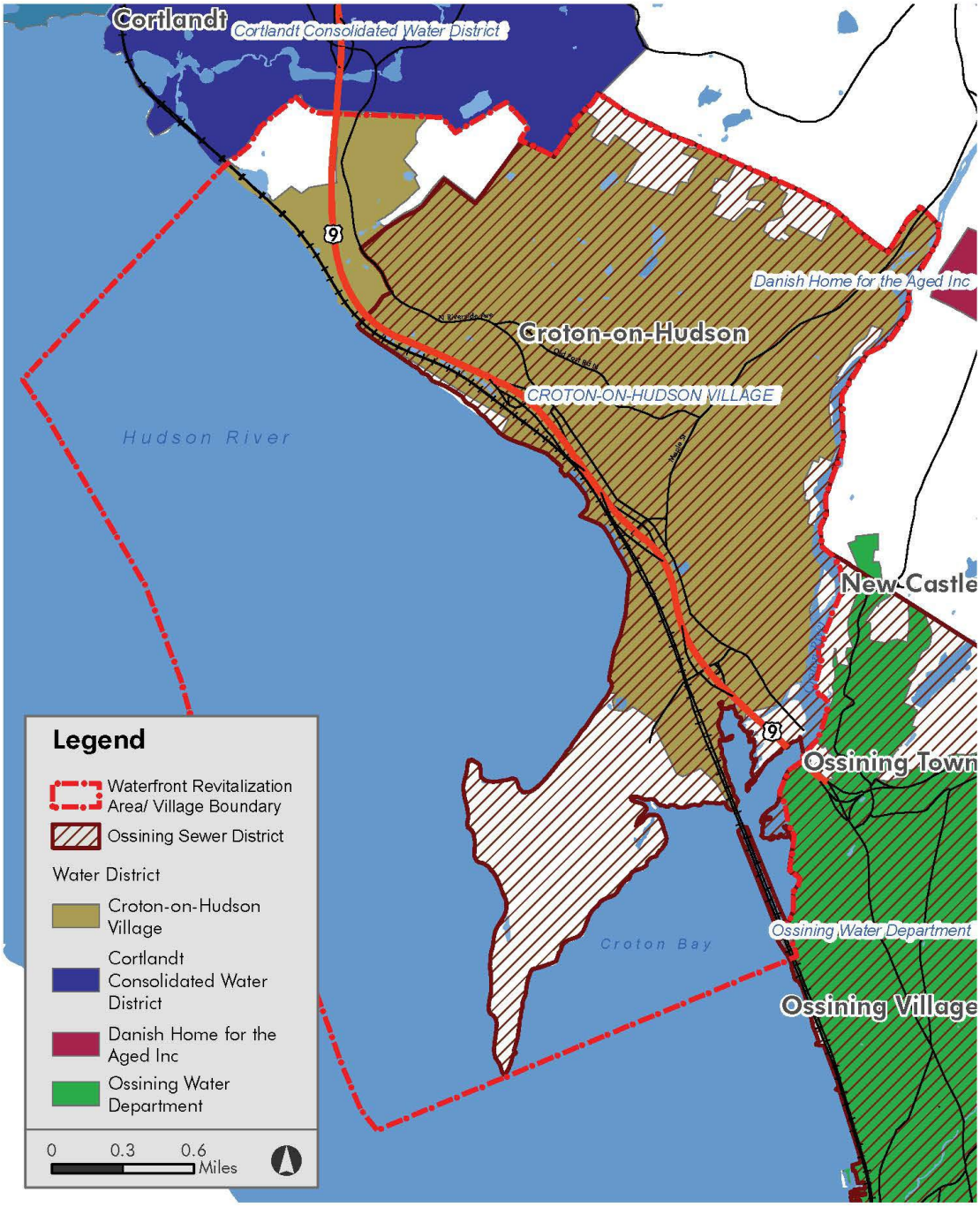


Figure 19: Zones of Groundwater Protection, Croton-on-Hudson Well Field

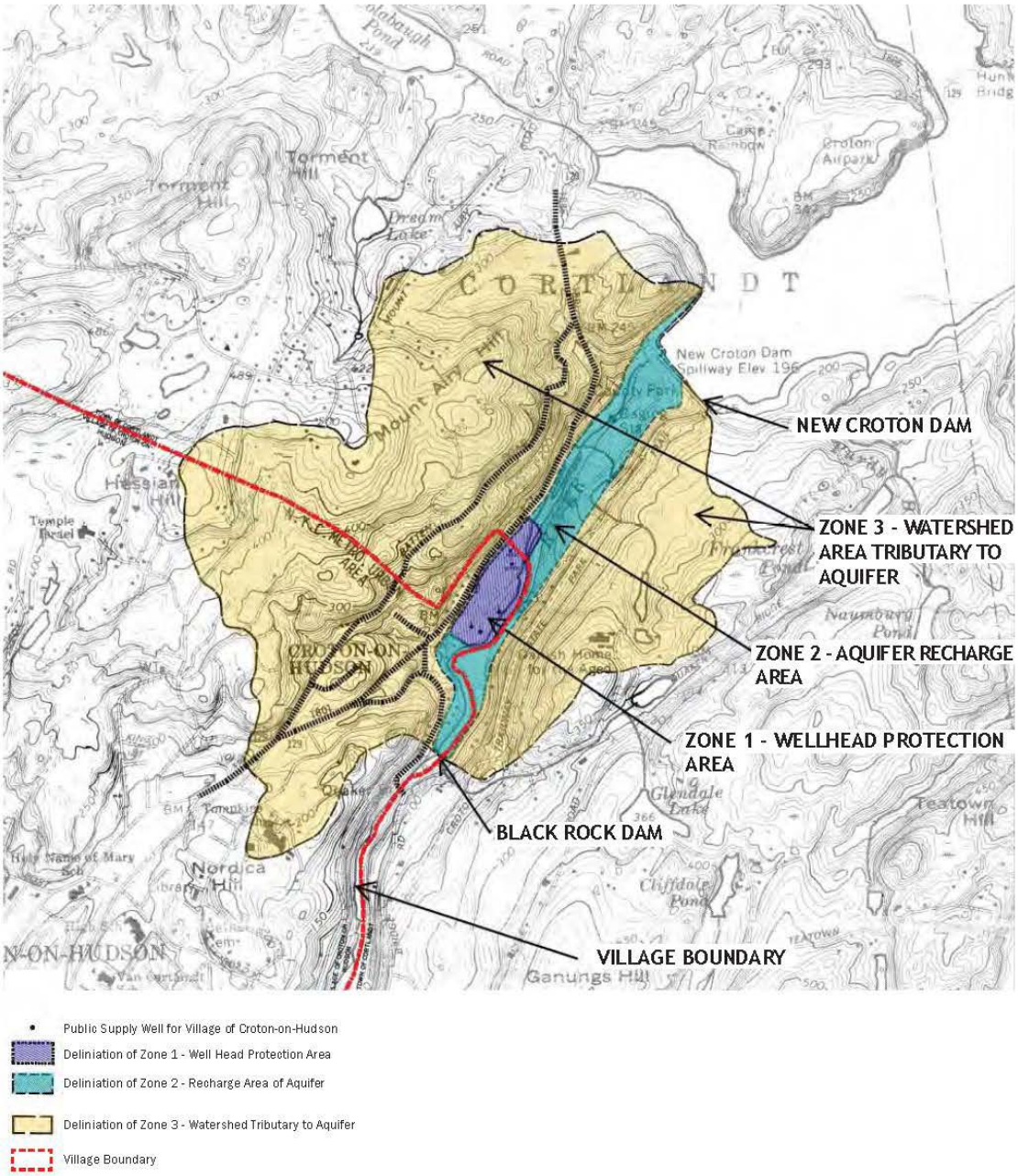


FIGURE 19: ZONES OF GROUNDWATER PROTECTION, CROTON-ON-HUDSON WELL FIELD

CROTON-ON-HUDSON LWRP

CROTON-ON-HUDSON, NY

Source: Village of Croton-on-Hudson, 1988

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SECTION III:
STATE AND LOCAL POLICIES

The LWRP policies and sub-policies, collectively referred to as "policies," presented in this chapter consider the economic, environmental and cultural characteristics of the waterfront. The policies represent a balance between economic development and preservation that will permit beneficial use of and prevent adverse effects on coastal resources. They also represent the enforceable policies of the New York State Coastal Management Program for the waterfront area subject to this LWRP. The policies are comprehensive and reflect the community's concerns, and they will be enforced by Croton-on-Hudson. The policies are the basis for Federal and State consistency determinations for activities affecting the waterfront area. The policies are enforceable as a matter of state and local law; however, for reviews conducted under the Federal Coastal Zone Management Act, the explanatory text is for explanatory purposes only.

A. DEVELOPMENT POLICIES

Policy 1:

Restore, revitalize, and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational and other compatible uses.

Policy 1A:

Encourage integrated development of Village property to assure fulfillment of requirements relating to parking and accessory uses of Metro-North train station, while facilitating public access to the bay area and recreational use.

Policy 1B:

Encourage restoration of deteriorating structures related to railroad use and assure appropriate maintenance and screening to reduce visual impact.

Policy 1C:

Encourage the appropriate re-use of the old sewage treatment plant site at the intersection of Route 9A and Municipal Place.

Explanation of Policies

State and federal agencies must ensure that their actions further the revitalization of urban waterfront areas. The transfer and purchase of property; the construction of a new office building, highway or park; the provision of tax incentives to businesses; and establishment of enterprise zones, are all examples of governmental means for spurring economic growth. When any such action or similar action is proposed, it must be analyzed to determine if the action would contribute to or adversely affect a waterfront revitalization effort.

It must be recognized that revitalization of once dynamic waterfront areas is one of the most effective means of encouraging economic growth in the State, without consuming valuable open space outside of these waterfront areas. Waterfront redevelopment is also one of the most effective means of rejuvenating or at least stabilizing residential and commercial districts adjacent to the redevelopment area.

In responding to this policy, several other policies must be considered: (1) Uses requiring a location abutting the waterfront must be given priority in any redevelopment effort. (Refer to Policy 2 for the means to effectuate this priority); (2) As explained in Policy 5, one reason for revitalizing previously dynamic waterfront areas is that the costs for providing basis services to such areas is frequently less than providing new services to areas not previously developed; (3) The likelihood for successfully simplifying permit procedures and easing certain requirements (Policy 6) will be increased if a discrete area and not the entire urban waterfront is the focus for this effort. In turn, ease in obtaining permits should increase developers' interest to invest in these areas. Further, once this concentrated effort has succeeded, stabilization and revitalization of surrounding areas is more likely to occur.

Local governments through waterfront revitalization programs have the primary responsibility for implementing this policy. Though local waterfront revitalization programs need not be limited to redevelopment, local governments are urged to identify areas as suitable for redevelopment, and establish and enforce redevelopment programs.

1. When a Federal or State action is proposed to take place in an urban waterfront area regarded as suitable for redevelopment, the following guidelines will be used:

    a. Priority should be given to uses which are dependent on a location adjacent to the water (see Policy 2)

    b. The action should enhance existing and anticipated uses. For example, a new highway should be designed and constructed so as to serve the potential access needs for desirable industrial development

    c. The action should serve as a catalyst to private investment in the area

    d. The action should improve the deteriorated condition of a site and, at a minimum, must not cause further deterioration. For example, a building could not be abandoned without protecting it against vandalism and/or structural decline

    e. The action must lead to development which is compatible with the character of the area, with consideration given to scale, architectural style, density, and intensity of use

f. The action should have the potential to improve the existing economic base of the community and, at a minimum, must not jeopardize this base. For example, waterfront development meant to serve consumer needs would be inappropriate in an area where no increased consumer demands were expected and existing development was already meeting demand

g. The action should improve adjacent and upland views of the water, and, at a minimum, must not affect these views in an insensitive manner

h. The action should have the potential to improve the potential for multiple uses of the site

2. If a State or Federal action is proposed to take place outside of a given deteriorated, underutilized urban waterfront area suitable for redevelopment, and is either within the relevant community or adjacent coastal communities, the agency proposing the action must first determine if it is feasible to take the action within the deteriorated, underutilized urban waterfront area in question. If such an action is feasible, the agency should give strong consideration to taking the action in that area. If not feasible, the agency must take the appropriate steps to ensure that the action does not cause further deterioration of that area.

The Village's waterfront is characterized by a significant amount of public open space and recreational use; however, such resources are constrained by limitations upon physical access to the waters of the Hudson and Croton Rivers. Although there are Village-owned parks and recreational areas on the Croton and Hudson Rivers' edges, access to these parks can be difficult. Due to the limited amount of land with direct access to and from the rivers, opportunities for new water-dependent developments are constrained. In addition, the railroad, associated structures and other transportation corridors separate the Hudson and Croton Bay waterfronts from the rest of the Village. However, opportunities do exist for redevelopment and revitalization of Village-owned land within the WRA.

See also Policies 19, 24 and 25.

Specifically, the Village-owned land adjacent to the commuter parking lots at the Metro-North railroad station, the site of the Echo Canoe Launch, is an important recreational resource. Policy 1A encourages the continued improvement of this property so as to enhance public access to the Croton River and Bay and the Hudson River by maintenance and improvement as necessary of the boat ramp; exploring additional parking for the ramp; and enhancing walkways, benches, signage and wayfinding measures. In addition, the central Village garage facility should be relocated out of the 100-year floodplain, where it would be more appropriate for storage of bulk items and

road maintenance and more efficient in terms of maintenance and operation. In addition, the Village should explore opportunities to improve the Village-owned commuter parking lots at the Metro-North railroad station, to improve circulation, ensure sufficient parking and reduce the stormwater impact through landscaping and similar measures.

Restoration and maintenance of railroad-related structures is also of prime importance. These structures present significant visual intrusions to the viewsheds of the Hudson River from many areas of and to the Village.

The Village has adopted a Park, Recreation and Education zoning district in order to preserve natural resources, scenic beauty and other land and community resources whose retention is necessary for the continued maintenance of the quality of the environment. It is designed to provide for public parks; recreational activities including all types of athletic activities; schools and other educational facilities; nature preserves; bird and wildlife sanctuaries; and similar uses.

Sites that have been designated either PRE-1 or PRE-3 are Croton Point Park, Brinton Brook Sanctuary, the Graff Sanctuary, the Jane E. Lytle Memorial Arboretum, Kaplan's Pond and Village-owned open space in the Croton Gorge area. Other possible sites for designation include all Village-designated parks, Van Cortlandt Manor, public schools, Village-owned open space and the Croton Free Library.

See also Policies 10, 19, 20, 21 and 22.

Policy 2:

Facilitate the siting of water dependent uses and facilities on or adjacent to coastal waters.

Policy 2A:

Encourage water-enhanced commercial uses where such uses complement water-dependent uses and do not result in displacement of such uses.

Explanation of Policies

There is a finite amount of waterfront space suitable for development purposes. Consequently, while the demand for any given piece of property will fluctuate in response to varying economic and social conditions, on a statewide basis, the only reasonable expectation is that long-term demand for waterfront space will intensify.

The traditional method of land allocation, i.e., the real estate market, with or without local land use controls, offers little assurance that uses which require waterfront sites will, in fact, have access to the State's coastal waters. To ensure that such "water-dependent" uses can continue to be accommodated within the State, State agencies will avoid undertaking, funding, or approving non water dependent uses when such uses would preempt the reasonably foreseeable development of water dependent uses; furthermore, agencies will utilize appropriate existing programs to encourage water dependent activities.

Water dependent activities shall not be considered a private nuisance, provided such activities were commenced prior to the surrounding activities and have not been determined to be the cause of conditions dangerous to life or health and any disturbance to enjoyment of land and water has not materially increased.

A water-dependent use is an activity which can only be conducted on, in, over, or adjacent to a water body because such activity requires direct access to that water body, and which involves, as an integral part of such activity, the use of the water.

The following uses and facilities are considered as water-dependent:

1. Uses which depend on the utilization of resources found in coastal waters (for example: fishing, mining of sand and gravel, mariculture activities)
2. Recreational activities which depend on access to coastal waters (for example: swimming, fishing, boating, wildlife viewing)
3. Uses involved in the sea/land transfer of goods (for example: docks, loading areas, pipelines, short-term storage facilities)

4. Structures needed for navigational purposes (for example: dams, locks, lighthouses)
5. Flood and erosion protection structures (for example: breakwaters, bulkheads)
6. Facilities needed to store and service boats and ships (for example: marinas, boat repair, boat construction yards)
7. Uses requiring large quantities of water for processing and cooling purposes (for example: hydroelectric power plants, fish processing plants, pumped storage power plants)
8. Uses that rely heavily on the waterborne transportation of raw materials or products which are difficult to transport on land, thereby making it critical that a site near to shipping facilities be obtained (for example: coal export facilities, cement plants, quarries)
9. Uses which operate under such severe time constraints that proximity to shipping facilities become critical (for example: firms processing perishable foods)
10. Scientific/educational activities which, by their nature, require access to coastal waters (for example: certain meteorological and oceanographic activities)
11. Support facilities which are necessary for the successful functioning of permitted water- dependent uses (for example: parking lots, snack bars, first aid stations, short-term storage facilities). Though these uses must be near the given water dependent use they should, as much as possible, be sited inland from the water dependent use rather than on the shore.

In addition to water dependent uses, those uses which are enhanced by a waterfront location should be encouraged to locate along the shore, though not at the expense of water dependent uses. A water enhanced use is defined as a use or activity which does not require a location adjacent to or over coastal waters, but whose location on land adjacent to the shore adds to the public use and enjoyment of the water's edge. Water enhanced uses are primarily recreational, cultural, retail, or entertainment uses. A restaurant which uses good site design to take advantage of a waterfront view is an example of a water enhanced use.

If there is no immediate demand for a water dependent use in a given area but a future demand is reasonably foreseeable, temporary non-water dependent uses should be considered preferable to a non-water dependent or enhanced use which involves an irreversible or nearly irreversible commitment of land. Parking lots, passive recreational facilities, outdoor storage areas, and non-permanent structures are uses

or facilities which would likely be considered as "temporary" non-water dependent uses.

In the actual choice of sites where water-dependent uses will be encouraged and facilitated, the following guidelines should be used:

1. Competition for space - competition for space, or the potential for it, should be indicated before any given site is promoted for water dependent uses. The intent is to match water dependent uses with suitable locations and thereby reduce any conflicts between competing uses that might arise. Not just any site suitable for development should be chosen as a water dependent use area. The choice of a site should be made with some meaningful impact on the real estate market anticipated. The anticipated impact could either be one of increased protection to existing water dependent activities or else the encouragement of water dependent development.

2. In-place facilities and services - most water dependent uses, if they are to function effectively, will require basic public facilities and services. In selecting appropriate areas for water-dependent uses, consideration should be given to the following factors:

   a) The availability of public sewers, public water lines and adequate power supply;

   b) Access to the area for trucks and rail, if heavy industry is to be accommodated; and

   c) Access to public transportation, if a high number of person trips are to be generated.

3. Access to navigational channels - if commercial shipping, commercial fishing, or recreational boating are planned, the locality should consider setting aside a site, within a sheltered harbor, from which access to adequately sized navigation channels would be assured.

4. Compatibility with adjacent uses and the protection of other coastal resources – water dependent uses should be located so that they enhance, or at least do not detract from, the surrounding community. Consideration should also be given to such factors as the protection of nearby residential areas from odors, noise and traffic. Affirmative approaches should also be employed so that water dependent uses and adjacent uses can serve to complement one another. For example, a recreation-oriented water dependent use area could be sited in an area already oriented towards tourism. Clearly, a marina, fishing pier or swimming area would enhance, and in turn be enhanced by, nearby restaurants, motels and other non-water-

oriented tourist activities. Water dependent uses must also be sited so as to avoid adverse impacts on the significant coastal resources.

5. Preference to underutilized sites: The promotion of water-dependent uses should serve to foster development as a result of the capital programming, permit expediting and other State and local actions that will be used to promote the site. Nowhere is such a stimulus needed more than in those portions of the State's waterfront areas which are currently underutilized.
6. Providing for expansion - a primary objective of the policy is to create a process by which water dependent uses can be accommodated well into the future. State agencies and localities should therefore give consideration to long-term space needs and, where practicable, accommodate future demand by identifying more land than is needed in the near future.

In promoting water dependent uses, the following kinds of actions will be considered:

1. Favored treatment to water dependent use areas with respect to capital programming. Particular priority should be given to the construction and maintenance of port facilities, roads, railroad facilities, and public transportation within areas suitable for water dependent uses.
2. When areas suitable for water dependent uses are publicly owned, favored leasing arrangements should be given to water dependent uses.
3. Where possible, consideration should be given to providing water dependent uses with property tax abatements, loan guarantees, or loans at below market rates.
4. State and local planning and economic development agencies should actively promote water dependent uses. In addition, a list of sites available for non-water dependent uses should be maintained in order to assist developers seeking alternative sites for their proposed projects.
5. Local, State and Federal agencies should work together to streamline permitting procedures that may be burdensome to water dependent uses. This effort should begin for specific uses in a particular area.
6. Local land use controls, especially the use of zoning districts exclusively for waterfront uses, can be an effective tool of local government in assuring adequate space for the development of water dependent uses.

To ensure that water-dependent uses can continue to be accommodated within the WRA, the Village will avoid undertaking, funding or approving non-water-dependent uses when such uses would preempt the reasonably foreseeable development of water-dependent uses on the existing vacant waterfront parcels.

The following uses and facilities are considered desirable as water-dependent in the Village:

1. Uses which depend on the utilization of resources found in coastal waters;

2. Recreational activities dependent on access to coastal waters;

3. Flood and erosion protection structures;

4. Scientific/educational activities, which, by their nature, require access to coastal waters; and

5. Support facilities necessary for successful functioning of permitted water-dependent uses. Though these uses must be near the given water-dependent use, they should, as much as possible, be sited inland from the water-dependent use rather than on the shore.

Water-dependent uses should be located so they enhance, or at least do not detract from, the surrounding community, and so that a balance of uses is achieved and maintained. Consideration should also be given to such factors as the protection of nearby residential areas from odors, noise and traffic. Affirmative approaches should also be employed so that water-dependent uses and adjacent uses can serve to complement one another. Water-dependent uses must also be sited so as to avoid adverse impacts on the significant coastal resources.

Water-dependent recreational use at Silver Lake, Black Rock Park, Croton Point Park, Senasqua Park, Croton Landing Park, Mayo's Landing, Echo Canoe Launch and the Croton Yacht Club should be maintained. In addition, the provision of public access to the water's edge and specifically to water-dependent uses at the Half Moon Bay site and at any other privately held sites should be enforced.

The Village has considered a restaurant near the Croton Yacht Club site in the past. A restaurant which uses good site design to take advantage of a waterfront proximity and views is an example of a water enhanced use. If a restaurant were to be developed at the site, it would be situated so as not to conflict with any water-dependent uses. Existing public access to the waterfront would need to be maintained, specifically the marina at the Croton Yacht Club and the boat launch and riverfront path at Croton Landing Park. Existing locations used for fishing shall be maintained. The location of the railroad lines virtually cuts off the Hudson River waterfront from the remainder of the Village, limiting public access to the waterfront. Priority should be given to water-enhanced or water-dependent uses which more directly complement the other goals for the WRA as expressed in this LWRP. Approval of any water-enhanced activity must be in

accordance with local policies regarding scenic resources (Policy 25) and erosion (Policies 14-17).

Recreational use of powerboats on the waterfront sites should be strictly monitored so as to ensure that such uses are compatible with existing forms of recreational use. Enforcement of regulations related to boat speed, turbidity, safety and mooring activities must be undertaken by the proper authorities. Such regulations are determined at the Federal, State and local level. Chapter 83 of the Village Code (Local Law #9 of 1977) regulates the use of power boats on the Croton River and Bay. Such regulations include limits on boat speed, mooring and discharge of waste into the Croton River and Bay. However, no such restrictions are in place regarding the use of boats within the Village's jurisdiction along the Hudson River. The Federal government regulates boat traffic in the navigable waters of the Hudson.

Policy 3:

Further develop the State's existing major ports of Albany, Buffalo, New York, Ogdensburg and Oswego as centers of commerce and industry, and encourage the siting, in these port areas, including those under the jurisdiction of State public authorities, of land use and development which is essential to, or in support of, waterborne transportation of cargo and people.

The State coastal policy regarding the development of major ports is not applicable to the Village of Croton-on-Hudson.

Policy 4:

Strengthen the economic base of smaller harbor areas by encouraging the development and enhancement of those traditional uses and activities which have provided such areas with their unique maritime identity.

Explanation of Policy

This policy recognizes that the traditional activities occurring in and around numerous smaller harbors throughout the State's coastal area contribute much to the economic strength and attractiveness of these harbor communities. Thus, efforts of state agencies shall center on promoting such desirable activities as recreational and commercial fishing, ferry services, marinas, historic preservation, cultural pursuits, and other compatible activities which have made smaller harbor areas appealing as tourist destinations and as commercial and residential areas. Particular consideration will be given to the visual appeal and social benefits of smaller harbors which, in turn, can make

significant contributions to the State's tourism industry. The following guidelines shall be used in determining consistency: 1. 2. 3. 4. 5. 6. 7. The action shall give priority to those traditional and/or desired uses which are dependent on or enhanced by a location adjacent to the water. The action will enhance or not detract from or adversely affect existing traditional and/or desired anticipated uses. The action shall not be out of character with, nor lead to development which would be out of the character with, existing development in terms of the area's scale, intensity of use, and architectural style. The action must not cause a site to deteriorate, e.g., a structure shall not be abandoned without protecting it against vandalism and/or structural decline. The action will not adversely affect the existing economic base of the community e.g., waterfront development designed to promote residential development might be inappropriate in a harbor area where the economy is dependent upon tourism and commercial fishing. The action will not detract from views of the water and smaller harbor area, particularly where the visual quality of the area is an important component of the area's appeal and identity. In applying the above guidelines the information in harbor management plans being developed by local governments pursuant to Article 42 of the Executive Law and local laws that would implement them shall be considered.

Policy 5:

Encourage the location of development in areas where public services and facilities essential to such development are adequate.

Policy 5A:

When feasible, development within the Village should be directed within the current service area of existing water and sewer facilities or in close proximity to areas where distribution lines currently exist.

<u>Explanation of Policies</u>

By its construction, taxing, funding and regulatory powers, government has become a dominant force in shaping the course of development. Through these government actions, development, particularly large-scale development, in the coastal area will be encouraged to locate within, contiguous to, or in close proximity to, existing areas of concentrated development where infrastructure and public services are adequate, where topography, geology, and other environmental conditions are suitable for and able to accommodate development.

The above policy is intended to accomplish the following:

- strengthen existing residential, industrial and commercial centers;
- foster an orderly pattern of growth where outward expansion is occurring;
- increase the productivity of existing public services and moderate the

need to provide new public services in outlying areas;

- preserve open space in sufficient amounts and where desirable
- foster energy conservation by encouraging proximity between home, work, and leisure activities.

For any action that would result in large scale development or an action which would facilitate or serve future development, a determination shall be made as to whether the action is within, contiguous to, or in close proximity to an area of concentrated development where infrastructure and public services are adequate. The following guidelines shall be used in making that determination:

1. Cities, built-up suburban towns and villages, and rural villages in the coastal area are generally areas of concentrated development where infrastructure and public services are adequate.
2. Other locations in the coastal area may also be suitable for development, if three or more of the following conditions prevail:
    a. Population density of the area surrounding or adjacent to the proposed site exceeds 1,000 persons per square mile;
    b. Fewer than 50% of the buildable sites (i.e., sites meeting lot area requirements under existing local zoning regulations) within one mile radius of the proposed site are vacant;
    c. Proposed site is served by or is near to public or private sewer and water lines;
    d. Public transportation service is available within one mile of the proposed site; and
    e. A significant concentration of commercial and/or industrial activity is within one-half mile of the proposed site.
3. The following points shall be considered in assessing the adequacy of an area's infrastructure and public services:
    a. Streets and highways serving the proposed site can safely accommodate the peak traffic generated by the proposed land development;
    b. Development's water needs (consumptive and firefighting) can be met by the existing water supply system;
    c. Sewage disposal system can accommodate the wastes generated by the development;
    d. Energy needs of the proposed land development can be accommodated by existing utility systems;
    e. Storm water runoff from the proposed site can be

accommodated by on-site and/or off-site facilities; and

f. Schools, police and fire protection, and health and social services are adequate to meet the needs of the population expected to live, work, shop, or conduct business in the area as a result of the development.

It is recognized that certain forms of development may and/or should occur at locations which are not within or near areas of concentrated development. Thus, this coastal development policy does not apply to the following types of development projects and activities.

1. Economic activities which depend upon sites at or near locations where natural resources are present, e.g., lumber industry, quarries.
2. Development which, by its nature, is enhanced by a non-urbanized setting, e.g., a resort complex, campgrounds, second home developments.
3. Development which is designed to be a self-contained activity, e.g., a small college, an academic or religious retreat.
4. Water dependent uses with site requirements not compatible with this policy or when alternative sites are not available.
5. Development which because of its isolated location and small scale has little or no potential to generate and/or encourage further land development.
6. Uses and/or activities which because of public safety consideration should be located away from populous areas.
7. Rehabilitation or restoration of existing structures and facilities.
8. Development projects which are essential to the construction and/or operation of the above uses and activities.

In certain urban areas where development is encouraged by this policy, the condition of existing public water and sewage infrastructure may necessitate improvements. Those State and federal agencies charged with allocating funds for investments in water and sewer facilities should give high priority to the needs of such urban areas so that full advantage may be taken of the rich array of their other infrastructure components in promoting waterfront revitalization.

Development, particularly large-scale development, in the WRA will be encouraged to locate within, contiguous to or in close proximity to, existing areas of concentrated development where infrastructure and public services are in place, and where

topography, geology and other environmental conditions are suitable for and able to accommodate development. In evaluating each proposal, the scale and type of development will be assessed with respect to consistency with the present character of the community.

The above policies are intended to accomplish the following:

1. Strengthen existing residential, industrial and commercial centers, such as in the Upper Village and Harmon sections;
2. Increase the productivity of existing public services and moderate the need to provide costly new public services in outlying areas; and
3. Preserve open space.

The following points shall be considered in assessing the adequacy of an area's infrastructure and public services:

1) Streets and highways servicing the proposed site can safely accommodate the peak traffic generated by the proposed land development. Traffic analysis of impacts from proposed development will be assessed during planning and environmental reviews. Any proposed development should include mitigation measures to reduce traffic impacts on existing Village streets. See Inventory and Analysis, Section D-1, for a discussion of Village roadways and the need for coordination of bus and train schedules to facilitate the use of public transportation.
2) Development's water supply (consumptive and firefighting) can be met by the existing water supply system.
3) The existing sewage disposal system can accommodate the wastes generated by the development.
4) Stormwater runoff from the proposed site can be accommodated by the on-site and/or off-site facilities.
5) Schools, police and fire protection and health and social services are adequate to meet the needs of the population expected to live, work, shop or conduct business in the areas as a result of the development.

It is recognized that certain forms of development may and/or should occur at locations which are not within or near areas of concentrated development. Such development can only occur if water supply and sewage disposal facilities are available.

This policy does not apply to water-dependent uses with site requirements not compatible with this policy, or when alternative sites are not available, or to uses and/or activities which because of public safety consideration should be located away from populous areas.

Policy 6:

Expedite permit procedures in order to facilitate the siting of development activities at suitable locations.

Explanation of Policy

For specific types of development activities and in areas suitable for such development, State agencies and local governments participating in the Waterfront Revitalization Program will make every effort to coordinate and synchronize existing permit procedures and regulatory programs, as long as the integrity of the regulations' objectives is not jeopardized. These procedures and programs will be coordinated within each agency. Also, efforts will be made to ensure that each agency's procedures and programs are synchronized with other agencies' procedures at each level of government. Finally, regulatory programs and procedures will be coordinated and synchronized between levels of government, and, if necessary, legislative and/or programmatic changes will be recommended.

When proposing new regulations, an agency will determine the feasibility of incorporating the regulations within existing procedures, if this reduces the burden on a particular type of development and does not jeopardize the integrity of the regulations' objectives.

In order to expedite procedures for development applications, the Village shall direct the applicant to all relevant laws, including ones recently adopted or amended. This will ensure that proposals are developed that would be consistent with the legal framework of the Village.

Legislative action taken by the Village includes the designation of the Waterfront Advisory Committee to review development proposals for consistency with the LWRP policies. This review is incorporated into the tasks of land use approval boards and commissions. The Planning Board, Zoning Board of Appeals, the Village Board, the Water Control Commission or other committees, as applicable and appropriate, shall review such proposals for consistency with the provisions of the Zoning Ordinance and the LWRP.

B. FISH AND WILDLIFE POLICIES

Policy 7:

Significant coastal fish and wildlife habitats will be protected, preserved, and, where practical, restored so as to maintain their viability as habitats.

Policy 7A:

The quality of the Croton River and Bay Significant Coastal Fish and Wildlife Habitat and Haverstraw Bay Significant Fish and Wildlife Habitat shall be protected and improved for conservation, economic, aesthetic, recreational, and other public uses and values. Its resources shall be protected from the threat of pollution, misuse, and mismanagement.

Policy 7B:

Materials that can degrade water quality and degrade or destroy the ecological system of the Croton River and Bay Significant Fish and Wildlife Habitat and the Haverstraw Bay Significant Fish and Wildlife Habitat shall not be disposed of or allowed to drain in, or on land within, the area of influence in the significant fish and wildlife habitats.

Policy 7C:

Storage of materials that can degrade water quality and degrade or destroy the ecological system of the Croton River and Bay Significant Fish and Wildlife Habitat or Haverstraw Bay Significant Fish and Wildlife Habitat shall not be permitted within the area of influence of the habitat unless best available technology is used to prevent adverse impacts to the habitat.

Policy 7D:

Restoration of degraded ecological elements of the Croton River and Bay and Haverstraw Bay Significant Fish and Wildlife Habitats and shorelands shall be included in any programs for cleanup of any adjacent toxic and hazardous waste sites.

Policy 7E:

Runoff from public and private parking lots and from storm sewer overflows shall be effectively managed so as to prevent oil, grease, and other contaminants from polluting surface and ground water and impact to the significant fish and wildlife habitats.

Policy 7F:

Construction activity of any kind must not cause a measurable increase in erosion or flooding at the site of such activity, or impact other locations. Construction activity in the Croton River and Hudson River spawning areas shall be timed so that spawning of anadromous fish species and shellfish will not be adversely affected.

Policy 7G:

Construction activity of any kind must not cause significant degradation of water quality or impact identified significant fish and wildlife habitats.

Policy 7H:

Habitat-related policies identified in the Indian Brook-Croton Gorge Watershed Conservation Action Plan will be considered in actions proposed for these areas (see Appendix C).

Explanation of Policies

The Croton River and Bay and Haverstraw Bay are designated Significant Coastal Fish and Wildlife Habitats. See Inventory and Analysis, Section C-3, for a description of these habitats.

Habitat protection is recognized as fundamental to assuring the survival of fish and wildlife populations. Certain habitats are critical to the maintenance of a given population and, therefore, merit special protection.

Such habitats exhibit one or more of the following characteristics: (1) are essential to the survival of a large portion of a particular fish or wildlife population (e.g. feeding grounds, nursery areas); (2) support populations of rare and endangered species; (3) are found at a very low frequency within a coastal region; (4) support fish and wildlife populations having significant commercial and/or recreational value; and (5) would be difficult or impossible to replace.

In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions destroy or significantly impair the viability of an area as a habitat. When the action significantly reduces a vital resource (e.g., food, shelter, living space) or changes environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism, then the action would be considered to "significantly impair" the habitat. Indicators of a significantly impaired habitat may include: reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The range of generic activities most likely to affect significant coastal fish and wildlife habitats include, but are not limited to the following:

1. Draining wetlands, ponds: Cause changes in vegetation, or changes in groundwater and surface water hydrology.
2. Filling wetlands, shallow areas of streams, lakes, bays, estuaries: May

change physical character of substrate (e.g., sandy to muddy, or smother vegetation, alter surface water hydrology).

3. Grading land: Results in vegetation removal, increased surface runoff, or increased soil erosion and downstream sedimentation.
4. Clear cutting: May cause loss of vegetative cover, increase fluctuations in amount of surface runoff, or increase streambed scouring, soil erosion, sediment deposition.
5. Dredging or excavation: May cause change in substrate composition, possible release of contaminants otherwise stored in sediments, removal of aquatic vegetation, or change circulation patterns and sediment transport mechanisms.
6. Dredge spoil disposal: May include shoaling of littoral areas, or change circulation patterns.
7. Physical alteration of shore areas through channelization or construction of shore structure: May change volume and rate of flow or increase scouring, sedimentation.
8. Introduction, storage or disposal of pollutants such as chemical, petrochemical, solid wastes, nuclear wastes, toxic material, pesticide, sewage effluent, urban and rural runoff, leachate of hazardous and toxic substances stored in landfills: May cause increased mortality or sublethal effects on organisms, alter their reproductive capabilities, or reduce their value as food organisms.

The range of physical, biological and chemical parameters which should be considered as applying the habitat impairment test include, but are not limited to, the following:

1. Physical parameters, such as living space circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;
2. Biological parameters, such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and
3. Chemical parameters, such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity and pollutants (heavy metals, toxics and hazardous materials).

When a proposed action is likely to alter any of the biological, physical or chemical parameters as described in the narrative beyond the tolerance range of the organisms

occupying the habitat, the viability of that habitat has been significantly impaired or destroyed. Such action, therefore, would be inconsistent with the above policy. In cooperation with the State's Coastal Management Program, the Department of Environmental Conservation has developed a rating system incorporating these five parameters (The Development and Evaluation of a System for Rating Fish and Wildlife Habitats in the Coastal Zone of New York State, Final Report, January 1981, 15 pp.).

To further aid Federal and State agencies in determining the consistency of a proposed action with this policy, a narrative will be prepared for each significant habitat which will: (1) identify the location of the habitat; (2) describe the community of organisms which utilize the habitat; (3) identify the biological, physical and chemical parameters which should be considered when assessing the potential impacts of a project on that habitat; (4) identify generic activities which would most likely create significant impacts on the habitat; and (5) provide the quantitative basis used to rate the habitat. Prior to formal designation of significant fish and wildlife habitats, copies of the individual habitat narratives plus copies of habitat maps and completed rating forms will be provided to Federal and State agencies and the public for the review and comment.

Activities in Croton River and Bay and Haverstraw Bay that would degrade water quality, increase turbidity or sedimentation, reduce flows, increase water temperatures or alter water salinities or temperature in the case of Haverstraw Bay would result in significant impairment of the habitat. Any physical alteration of the habitat, through dredging, filling or bulkheading, would result in a direct loss of valuable habitat area. Habitat disturbances would be most detrimental during fish spawning and incubation periods, which generally extend from April through August for most warmwater or anadromous species. Discharges of sewage or stormwater runoff containing sediments or chemical pollutants may result in significant adverse impacts on fish populations and must be prevented. Similarly, spills of oil or other hazardous substances from industrial activity, and leachate of contaminated groundwater, constitute a potential threat to fish and wildlife in the bays.

Of particular concern in the Croton River and Bay major tributary system are the potential effects of upstream disturbances, including water withdrawals, impoundments, stream bed disturbances and effluent discharges. These are also concerns in Haverstraw Bay, as are hydrologic disturbances (water withdrawals). Establishment of minimum flow requirements for the Croton River up to the first impassable barrier to fish has had a significant beneficial effect on the area; however, under drought conditions, releases from the Croton Reservoir can be reduced to zero. Minimum flow requirements for the Croton River should be maintained up to the New Croton Dam. See Policy 38A.

Existing areas of natural vegetation bordering Croton River and Bay and Haverstraw Bay should be maintained to provide bank cover, soil stabilization, perching sites and buffer areas. However, development of public access to the bay areas is desirable to ensure that adequate opportunities for compatible human uses of the fish and wildlife resources are available.

In addition, the owners of the parking lots at the Croton Harmon station should be required to control and filter runoff to prevent pollution of the Habitats.

See Policies 8, 25, 33, 34, 35, 37 and 44.

Policy 8:

Protect fish and wildlife resources in the coastal area from the introduction of hazardous wastes and other pollutants which bio-accumulate in the food chain or which cause significant sub-lethal or lethal effect on those resources.

Explanation of Policy

Hazardous wastes are unwanted by-products of manufacturing processes and are generally characterized as being flammable, corrosive, reactive or toxic. More specifically, hazardous waste is defined in Environmental Conservation Law [§27-0901 (3)] as "waste or combination of wastes which because of its quantity, concentration or physical, chemical or infectious characteristics may: (a) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or otherwise managed." A list of hazardous wastes (6NYCRR Part 366) will be adopted by DEC within 6 months after EPA formally adopts its list.

The handling (storage, transport, treatment and disposal) of the materials included on this list is being strictly regulated in New York State to prevent their entry or introduction into the environment, particularly in the State's air, land and waters. Such controls should effectively minimize possible contamination of and bio-accumulation in the State's coastal fish and wildlife resources at levels that cause mortality or create physiological and behavioral disorders.

Other pollutants are those conventional wastes, generated from point and nonpoint sources, that are not identified as hazardous wastes but are controlled through other State laws.

Debris and other construction or waste materials from the rail yards or other industries shall not be deposited in coastal areas where they may leach into groundwater supplies or directly affect wildlife resources.

In addition, the Village should facilitate upgrades to catch basins and outfalls as necessary, to address the issue of floatable debris in Croton River and Bay.

See Policies 7, 25, 30, 33, 34, 37, 40 and 44.

Policy 9:

Expand recreational use of fish and wildlife resources in coastal areas by increasing access to existing resources, supplementing existing stocks, and developing new resources.

Policy 9A:

Ensure continued recreational use and public access to the rivers through Village-owned land adjacent to the railroad parking lot, at Croton Point Park, at Senasqua and Croton Landing Parks, along the Croton River, and at the Croton Yacht Club. Efforts should be made to increase opportunities for public access and enjoyment in these areas.

Policy 9B:

Encourage passive recreational enjoyment of the wildlife in the designated significant fish and wildlife habitats, on the Audubon Society sanctuaries, Jane Lytle Arboretum, Gouveia Park and on other public or private lands within the Village where wildlife habitats are located, as well as the protection of such resources.

Explanation of Policy

Recreational uses of coastal fish and wildlife resources include consumptive uses such as fishing and hunting, and non-consumptive uses such as wildlife photography, bird watching and nature study.

Any efforts to increase recreational use of these resources will be made in a manner which ensures the protection of fish and wildlife resources and which takes into consideration other activities dependent on these resources. Also, such efforts must be done in accordance with existing State law and in keeping with sound resource management considerations. Such considerations include biology of the species, carrying capacity of the resource, public demand, costs and available technology.

The following additional guidelines should be considered by State and federal agencies as they determine the consistency of their proposed action with the above policy:

1. Consideration should be made by federal and State agencies as to whether an action will impede existing or future utilization of the State's recreational fish and wildlife resources.
2. Efforts to increase access to recreational fish and wildlife resources should not lead to overutilization of that resource or cause impairment of the habitat. Sometimes such impairment can be more subtle than actual physical damage to the habitat. For example, increased human presence can deter animals from using the habitat area.

3. The impacts of increasing access to recreational fish and wildlife resources should be determined on a case-by-case basis, consulting the significant habitat narrative for Croton River and Bay and Haverstraw Bay (see Policy 7) and/or conferring with a trained fish and wildlife specialist.

Continued recreational areas at Croton Point Park, Senasqua Park, Croton Landing Park, Croton Yacht Club, Black Rock, Silver Lake and Paradise Island should be maintained (see Policy 21 for the types of amenities to be provided or maintained at such sites). The Village also encourages any effort to improve water quality which would enable the public to swim and fish in the coastal water. Existing public access to the waterfront would need to be maintained, specifically the marina at the Croton Yacht Club and the boat launch and riverfront path at Croton Landing Park. Existing locations used for fishing shall be maintained.

Recreational opportunities in coastal waters and its tributaries will depend on continued monitoring by DEC and the maintaining or upgrading of water quality classifications. Currently, Village tributaries to the Hudson range from Class B to Class C (see Inventory and Analysis, Section C-2).

See also Policies 7, 19, 20, 21 and 31.

Policy 10:

Further develop commercial finfish, shellfish and crustacean resources in the coastal area by encouraging the construction of new, or improvement of existing on-shore commercial fishing facilities, increasing marketing of the State's seafood products, maintaining adequate stocks and expanding aquaculture facilities.

This policy does not apply to the Village at this time because there are no known or anticipated commercial fishing facilities located within the Village.

C. FLOODING AND EROSION POLICIES

Policy 11:

Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.

Explanation of Policy

On coastal lands identified as coastal erosion hazard areas, buildings and similar structures shall be set back from the shoreline a distance sufficient to minimize damage from erosion unless no reasonable prudent alternative site is available as in the case of piers, docks, and other structures necessary to gain access to coastal waters to be able to function. The extent of the setback will be calculated, taking into account the rate at which land is receding due to erosion and the protection provided by existing erosion protection structures, as well as by natural protective features such as beaches, sandbars, spits, shoals, barrier islands, bay barriers, nearshore areas, bluffs, and wetlands. The only new structure allowed in coastal erosion hazard areas is a moveable structure as defined in 6 NYCRR Part 505.2(x).

Prior to its construction, an erosion hazard areas permit must be approved for the structure. Existing non-conforming structures located in coastal erosion hazard areas may be only minimally enlarged.

In coastal lands identified as being subject to high velocity waters caused by hurricane or other storm wave wash - a coastal high hazard area - walled and roofed buildings or fuel storage tanks shall be sited landward of mean high tide, and no mobile home shall be sited in such area. In coastal lands identified as floodways, no mobile homes shall be sited other than in existing mobile home parks.

Where human lives may be endangered by major coastal storms, all necessary emergency preparedness measures should be taken, including disaster preparedness planning.

The entire River boundary of Croton-on-Hudson, including both the Hudson and Croton Rivers, is within designated floodplain areas. A number of the properties on the Hudson River are protected by bulkheads or riprap, including Croton Point Park, Senasqua Park, Croton Landing Park and the Croton Yacht Club. The properties fronting on the Croton River are unprotected. In addition, a vast amount of land within the Village consists of shallow soils with a high-water table. As such, these properties are subject to flooding and erosion.

This policy is particularly important in the siting and construction of new buildings. To protect human lives and property from flooding and erosion, the Village of Croton-on-

Hudson adopted Chapter 129, Flood Damage Prevention, of the Village Code (Local Law No. 2 of 2007) and Chapter 196, Stormwater, Drainage, Erosion and Water Pollution Control, of the Village Code (Local Law No. 3 of 2007). In addition, the Village adopted Chapter 195, Steep Slope Protection (Local Law No. 3 of 2008) to regulate the development and protection of steep slope areas.

In particular, the Village shall seek to address areas where existing drainage systems are known to contribute to erosion on steep slopes in the Croton Gorge areas, such as Mayo's Landing and the area behind Carrie E. Tompkins Elementary School.

The disaster preparedness agency in Westchester County is the Office of Emergency Management. Significant damage caused by erosion and flooding occurred in the 1840s, when the Croton Dam broke and sediment filled the Croton River and Bay. More recently, substantial damage occurred during Tropical Storm Irene in 2011 and Hurricane Sandy in 2012.

Policy 12:

Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.

Policy 12A:

Every effort should be made to protect Croton Point, a natural protective barrier to Croton Bay from activities or development that would increase erosion of or flooding of the point.

Explanation of Policies

Beaches, dunes, barrier islands, bluffs, and other natural protective features help safeguard coastal lands and property from damage, as well as reduce the danger to human life, resulting from flooding and erosion. Excavation of coastal features, improperly designed structures, inadequate site planning, or other similar actions which fail to recognize their fragile nature and high protective values, lead to the weakening or destruction of those landforms. Activities or development in, or in proximity to, natural protective features must ensure that all such adverse actions are minimized. Primary dunes will be protected from all encroachments that could impair their natural protective capacity.

Croton Point is an important natural protective feature which separates Croton River and Bay from the Hudson River. Croton Point helps safeguard the bay and the low tidal lands adjacent to it from flooding and erosion. Excavation around or on the Point, improperly designed structures, inadequate site planning or other actions which fail to recognize its fragile nature and high protective value, may lead to weakening or destruction of Croton Point, and should be avoided. The Village will work with Westchester County to ensure that activities and development occurring at Croton Point are undertaken to minimize or avoid such negative impacts.

Policy 13:

The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs.

Explanation of Policy

Erosion protection structures are widely used throughout the State's coastal area. However, because of improper design, construction and maintenance standards, many fail to give the protection which they are presumed to provide. As a result, development is sited in areas where it is subject to damage or loss due to erosion. This policy will help ensure the reduction of such damage or loss.

This policy is applicable along the entire length of the Village's waterfront along both the Croton and Hudson Rivers, where bulkheads have been constructed to protect the banks of the Rivers from erosion. Any reconstruction or repair of these bulkheads will be held to the 30-year standards of this policy. These standards should apply not only to public actions to repair deteriorated bulkheads but also to existing property owners along both rivers, who should be required to maintain and reconstruct the bulkhead along their water frontage, and private developers who propose new development for properties with river frontage.

The Village should continue to inspect and repair the bulkheads along Village property periodically according to Best Management Practices.

Any proposed construction must comply with Best Management Practices of Policy 37 and the development principles of Policy 11.

Policy 14:

Activities and development, including the construction or reconstruction of erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.

Explanation of Policy

Erosion and flooding are processes which occur naturally. However, by our actions, people can increase the severity and adverse effects of these processes, causing damage to, or loss of property, and endangering human lives. Those actions include: the use of erosion protective structures, such as groins, or the use of impermeable docks which block the littoral transport of sediment to adjacent shorelands, thus increasing their rate of recession; the failure to observe proper drainage or land restoration practices, thereby causing run-off and the erosion and weakening of shorelands; and the placing of structures in identified floodways so that the base flood level is increased, causing damage in otherwise hazard-free areas.

This policy applies not only to construction of erosion protection structures, but to development and construction of any kind that could have a potential effect on erosion or flooding. When developing in the Village's waterfront revitalization area, best management practices should be undertaken in compliance with related local laws to mitigate flooding impacts. Stormwater runoff must be retained on-site, in detention ponds or through other measures, and allow discharge at rates which do not over-burden the existing system and exacerbate flooding of Village streets.

See also Policies 7 and 11.

Policy 15:

Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.

Explanation of Policy

Coastal processes, including the movement of beach materials by water, and any mining, excavation or dredging in nearshore or offshore waters which changes the supply and net flow of such materials, can deprive shorelands of their natural regenerative powers. Such mining, excavation and dredging should be accomplished in a manner so as not to cause a reduction of supply, and thus an increase of erosion, to such shorelands. Offshore mining is a future alternative option to land mining for sand and gravel deposits which are needed to support building and other industries.

Although the Village of Croton-on-Hudson coastline has few areas where beach materials accumulate, the actions that occur in Village water which may affect the accumulation of such material in communities north and south of it shall be monitored for such impacts.

See also Policy 7.

Policy 16:

Public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.

Explanation of Policy

Public funds are used for a variety of purposes on the State's shorelines. This policy recognizes the public need for protection of human life and existing investment in development or new development which requires a location in proximity to the coastal area or in adjacent waters to be able to function. However, it also recognizes the adverse impacts of such activities and development on the rate of erosion and on natural protective features and requires that careful analysis be made of such benefits and long-term costs prior to expending public funds.

Policy 17:

Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.

Policy 17A:

Efforts to control erosion along the rivers and on the steep slopes inland shall be of a non-structural nature, wherever possible, to minimize the visual impact of structural measures.

Explanation of Policies

This policy recognizes both the potential adverse impacts of flooding and erosion upon development and upon natural protective features in the coastal area, as well as the costs of protection against those hazards which structural measures entail.

"Non-structural measures" shall include, but not be limited to: (1) within coastal erosion hazard areas identified under Section 0104 of Coastal Erosion Hazard Areas law (Environmental Conservation Law Article 34), and subject to the permit requirements on all regulated activities and development established under that law, (a) the use of minimum setbacks as provided for in Section 0108 of Environmental Conservation Law Article 34; and (b) the strengthening of coastal landforms by the planting of appropriate vegetation on dunes and bluffs, the installation of sand fencing on dunes, the reshaping of bluffs to achieve an appropriate vegetation on dunes and bluffs, the installation of sand fencing on dunes, the reshaping of bluffs to achieve an appropriate angle of repose so as to reduce the potential for slumping and to permit the planting of stabilization vegetation, and the installation of drainage systems on bluffs to reduce runoff and internal seepage of waters which erode or weaken the landforms; and (2) within identified flood hazard areas, (a) the avoidance of risk or damage from flooding by the siting of buildings outside the hazard area, and (b) the flood-proofing of buildings or their elevation above the base flood level.

This policy shall apply to the planning, siting and design of proposed activities and development, including measures to protect existing activities and development. To ascertain consistency with the policy, it must be determined if any one, or a combination of, non-structural measures would afford the degree of protection appropriate both to the character and purpose of the activity or development, and to the hazard. If non-structural measures are determined to offer sufficient protection, then consistency with the policy would require the use of such measures whenever possible.

In determining whether or not non-structural measures to protect against erosion or flooding will afford the degree of protection appropriate, an analysis, including review of other materials such as plans or sketches of the activity or development of the site

and of the alternative protection measures, must be prepared to allow an informed assessment to be made.

See also Policy 11.

D. GENERAL POLICY

Policy 18:

To safeguard the vital economic, social and environmental interests of the State and of its citizens, proposed major actions in the coastal area must give full consideration to those interests, and to the safeguards which the State has established to protect valuable coastal resource areas.

Explanation of Policy

Proposed major actions may be undertaken in the coastal area if they will not significantly impair valuable coastal waters and resources, thus frustrating the achievement of the purposes of the safeguards which the State has established to protect those waters and resources. Proposed actions must take into account the social, economic and environmental interests of the State and its citizens in such matters that would affect natural resources, water levels and flows, shoreline damage and recreation.

The Village is a transportation hub within northern Westchester County. Route 9 is a major thoroughfare and the Croton-Harmon Station is a significant public transportation node. Therefore, vehicular and rail traffic is a significant factor in the determination of the quality of life for Village residents. Heavy traffic results in noise, air and water quality impacts that must be assessed regularly. Measures should be taken whenever possible to keep such impacts to a minimum.

E. PUBLIC ACCESS POLICIES

Policy 19:

Protect, maintain, and increase the level and types of access to public water-related recreation resources and facilities.

Policy 19A:

Encourage the linkage of open space from upland areas to and along the Hudson and Croton Rivers in the form of a trail or walkway system.

Policy 19B:

Increase public access to areas that offer physical and visual connection to the Hudson River or Croton River and Bay.

Policy 19C:

Encourage the improvement of public transportation, when feasible, where water-dependent and water-enhanced recreation activities are located.

Policy 19D:

Improve and maintain access to Croton River and Bay at the Village-owned Echo Canoe Launch south of the Village parking lots at the Croton-Harmon Station.

Explanation of Policies

This policy calls for achieving balance among the following factors: the level of access to a resource or facility, the capacity of a resource or facility and the protection of natural resources. The imbalance among these factors is most significant in the State's urban areas. Because this is often due to access-related problems, priority will be given to improving physical access to existing and potential coastal recreation sites within the heavily populated urban coastal areas of the State and to increasing the ability of urban residents to get to coastal recreation areas by improved public transportation. The particular water-related recreation resources and facilities which will receive priority for improved access are public beaches, boating facilities, fishing areas and waterfront parks. In addition, because of the greater competition for waterfront locations within urban areas, the Coastal Management Program will encourage mixed-used areas and multiple uses of facilities to improve access. Specific sites requiring access improvements and the relative priority the program will accord to each will be identified in the Public Access Planning Process.

The following guidelines will be used in determining the consistency of a proposed action with this policy:

1. The existing access from adjacent or proximate public lands or facilities to public water-related recreation resources and facilities shall not be reduced, nor shall the possibility of increasing access in the future from adjacent or proximate public lands or facilities to public water-related recreation resources and facilities be eliminated, unless in the latter case, estimates of future use of these resources and facilities are too low to justify maintaining or providing increased public access, or unless such actions are found to be necessary by the public body having jurisdiction over such access as the result of a reasonable justification of the need to meet system-wide objectives.

   The following is an explanation of the terms used in the guidelines:

   a) Access - the ability and right of the public to reach and use public coastal lands and waters.

   b) Public water related recreation resources of facilities - all public lands or facilities that are suitable for passive or active recreation that requires either water or a waterfront location or is enhanced by a waterfront location.

   c) Public lands or facilities - lands or facilities held by State or local government in fee simple or less-than-fee simple ownership and to which the public has access or could have access, including underwater lands and the foreshore.

   d) A reduction in the existing level of public access - includes, but is not limited to, the following:

      (1) The number of parking spaces at a public water-related recreation resource or facility is significantly reduced.

      (2) The service level of public transportation to a public water-related recreation resource or facility is significantly reduced during peak season use and such reduction cannot be reasonably justified in terms of meeting system-wide objectives.

      (3) Pedestrian access is diminished or eliminated because of hazardous crossings required at new or altered transportation facilities, electric power transmission lines, or similar linear facilities.

      (4) There are substantial increases in the following: already existing special fares (not to include regular fares in any instance) of public transportation to a public water-related recreation resource or facility; and/or admission fees to such a resource or facility except where the public body having jurisdiction over such fares determines that such substantial fare increases are necessary and an analysis shows that such increases will significantly reduce usage by individuals or families and incomes

below the State government established poverty level.

e) An elimination of the possibility of increasing public access in the future includes, but is not limited to, the following:

(1) Construction of public facilities which physically prevent the provision, except at great expense, of convenient public access to public water-related recreation resources and facilities.

(2) Sale, lease, or other transfer of public lands that could provide public access to a public water-related recreation resource or facility.

(3) Construction of private facilities which physically prevent the provision of convenient public access to public water-related recreation resources or facilities from public lands and facilities.

2. Any proposed project to increase public access to public water-related recreation resources and facilities shall be analyzed according to the following factors:

a) The level of access to be provided should be in accord with estimated public use. If not, the proposed level of access to be provided shall be deemed inconsistent with the policy.

b) The level of access to be provided shall not cause a degree of use which would exceed the physical capability of the resource or facility. If this were determined to be the case, the proposed level of access to be provided shall be deemed inconsistent with the policy.

3. The State will not undertake or will not fund any project which increases access to a water-related resource or facility that is not open to all members of the public.

4. In their plans and programs for increasing public access to public water-related resources and facilities, State agencies shall give priority in the following order to projects located: within the boundaries of the Federal-Aid Metropolitan Urban Area and served by public transportation, within the boundaries of the Federal-Aid Metropolitan Urban Area but not served by public transportation, outside the defined Urban Area boundary and served by public transportation, and outside the defined Urban Area boundary but not served by public transportation.

At-grade crossings for public access to the Village's waterfront is severely limited due to the presence of the railroad, associated railroad structures and major transportation corridors (Route 9). To increase public access to the Croton and Hudson Rivers, this policy encourages the linkage of open spaces in the form of a trail or walkway system. Opportunities to link waterfront trails and other access opportunities to similar facilities

and opportunities in communities to the north, south and east should be identified and pursued. Such a system would allow the public access to the waterfronts for both passive and active recreation. The Village would be responsible for development and maintenance of the trail system along its property, and private property owners would be responsible for that part of the system along their parcels. If so desired, the Village and the private property owners may negotiate a contract to arrange for security and maintenance along the entire trail system. At this time, the Village negotiates public access with private landowners during the planning process.

In addition to pedestrian access via a trail system, the existing Metro-North tunnel to Senasqua Park should be maintained to allow pedestrian flow, and the Metro-North bridge to Croton Point Park should be maintained to provide two-way vehicular traffic and pedestrian access. The County is responsible for the surface of the bridge, while Metro-North is responsible for the bridge structure. In addition, the pedestrian bridge to Senasqua Park at Brook Street and North Riverside Avenue should be maintained and improved as necessary.

Public access to Croton waterfront areas must be maintained at Senasqua Park, Croton Landing Park, the Croton Yacht Club, Croton Point Park, Echo Canoe Launch, Paradise Island, Half Moon Bay, Silver Lake and Black Rock. Continued maintenance of the Duck Pond and the associated playing fields is important to keep this site as a viable recreational facility. The Duck Pond presents important year-round recreational opportunities to the residents of Croton-on-Hudson and should be properly maintained.

Policy 19C encourages the use of public transportation to areas where water-enhanced and water-dependent facilities are located. This is particularly important in Croton due to constrained parking at waterfront locations. New access structures (i.e. bridges) or larger parking areas are often inhibited by the lack of physical space, lack of adequate connections and the lack of public funds available for new construction. Pedestrian access is available in some areas, but the lack of safety precautions inhibits such access.

Policy 20:
Access to the publicly owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it should be provided in a manner compatible with adjoining uses.

Explanation of Policies

In coastal areas where there are little or no recreation facilities providing specific water-related recreational activities, access to the publicly-owned lands of the coast at large should be provided for numerous activities and pursuits which require only minimal facilities for their enjoyment. Such access would provide for walking along a beach or a city waterfront or to a vantage point from which to view the seashore. Similar activities requiring access would include bicycling, bird watching, photography, nature study, beachcombing, fishing and hunting.

For those activities, there are several methods of providing access which will receive priority attention of the Coastal Management Program. These include: the development of a coastal trails system; the provision of access across transportation facilities to the coast; the improvement of access to waterfronts in urban areas; and the promotion of mixed and multi-use development.

While such publicly-owned lands referenced in the policy shall be retained in public ownership, traditional sales of easements on lands underwater to adjacent onshore property owners are consistent with this policy, provided such easements do not substantially interfere with continued public use of the public lands on which the easement is granted. Also, public use of such publicly-owned underwater lands and lands immediately adjacent to the shore shall be discouraged where such use would be inappropriate for reasons of public safety, military security, or the protection of fragile coastal resources.

The regulation of projects and structures, proposed to be constructed in or over lands underwater, is necessary to responsibly manage such lands, to protect vital assets held in the name of the people of the State, to guarantee common law and sovereign rights, and to ensure that waterfront owners' reasonable exercise of riparian rights and access to navigable waters shall be consistent with the public interest in reasonable use and responsible management of waterways and such public lands for the purposes of navigation, commerce, fishing, bathing, recreation, environmental and aesthetic protection, and access to the navigable waters and lands underwater of the State.

The following guidelines will be used in determining the consistency of a proposed action with this policy:

1. Existing access from adjacent or proximate public lands or facilities to existing public coastal lands and/or waters shall not be reduced, nor shall the possibility of increasing access in the future from adjacent or nearby public lands or facilities to public coastal lands and/or waters be eliminated, unless such actions are demonstrated to be of overriding regional or Statewide public benefit or, in the latter case, estimates of future use of these lands and waters are too low to justify maintaining or providing increased access.

   The following is an explanation of the terms used in the above guidelines:

   a. (See definitions under Policy 19 of "access" and "public lands or facilities").
   b. A reduction in the existing level of public access – includes but is not limited to the following:
      i. Pedestrian access is diminished or eliminated because of hazardous crossings required at new or altered transportation facilities, electric power transmission lines or similar linear facilities.
      ii. Pedestrian access is diminished or blocked completely by public or private development.
   c. An elimination of the possibility of increasing public access in the future – includes but is not limited to the following:
      i. Construction of public facilities which physically prevent the provision, except at great expense, of convenient public access to public coastal lands and/or waters.
      ii. Sale, lease or other conveyance of public lands that could provide public access to public coastal lands and/or waters
      iii. Construction of private facilities which physically prevent the provision of convenient public access to public coastal lands and/or waters from public lands and facilities.
2. The existing level of public access within public coastal lands or waters shall not be reduced or eliminated.
   a. A reduction or elimination in the existing level of public access – includes, but is not limited to the following:
      i. Access is reduced or eliminated because of hazardous crossings required at new or altered transportation facilities, electric power transmission lines or similar linear facilities.
      ii. Access is reduced or blocked completely by any public developments.
3. Public access from the nearest public roadway to the shoreline and along the coast shall be provided by new land use or development, except where (a) it is inconsistent with public safety, military security, or the protection of identified fragile coastal resources; (b) adequate access exists within one-half mile; or (c)

agriculture would be adversely affected. Such access shall not be required to be open to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.

4. The State will not undertake or fund any project which increases access to a water-related resource or facility that is not open to all members of the public.
5. In their plans and programs for increasing public access, State agencies shall give priority in the following order to projects located; within the boundaries of the Federal-Aid Metropolitan Urban Area and served by public transportation; within the Federal-Aid Metropolitan Urban Area but not served by public transportation; outside the defined Urban Area boundary and served by public transportation; and outside the defined Urban Area boundary but not served by public transportation.
6. Proposals for increased public access to coastal lands and waters shall be analyzed according to the following factors:
   a) The level of access to be provided should be in accord with estimated public use. If not, the proposed level of access to be provided shall be deemed inconsistent with the policy.
   b) The level of access to be provided shall not cause a degree of use which would exceed the physical capability of the coastal lands or waters. If this were determined to be the case, the proposed level of access to be provided shall be deemed inconsistent with the policy.
7. In making any grant, lease, permit, or other conveyance of land now or formerly underwater, there shall be reserved such interests or attached such conditions to preserve the public interest in the use of state-owned lands underwater and waterways for navigation, commerce, fishing, bathing, recreation, environmental protection, and access to the navigable waters of the state. In particular, the granting of publicly owned underwater or formerly underwater lands to private entities will be limited to exceptional circumstances only.

Access addressed by this policy concerns pedestrians and vehicle access to the Village- and County-owned property along the water's edge and/or vantage points on lands immediately adjacent to the foreshore from which to view the Hudson and Croton Rivers and Croton Bay waterfronts. Since Village-owned land borders these areas, access for active and passive recreation should be encouraged and maintained.

Access addressed by this policy includes walking along the Village's waterfront and/or to a vantage point from which to view the waterfront. Other activities requiring access include bicycling, bird watching, photography, nature study and fishing.

For these activities, access can be provided by a coastal trails system, access across transportation facilities and the promotion of mixed- and multi-use development.

While such publicly owned lands referenced in the policy shall be retained in public ownership, granting of easements on underwater lands are consistent with this policy, provided such easements do not interfere with continued public use of the public lands on which the easement is granted (see Policy 19).

In those instances where current adjacent uses are not compatible with other policies in this LWRP, those adjacent uses shall not be used to determine the compatibility of a use of publicly owned land.

Policy 21:

Water dependent and water enhanced recreation will be encouraged and facilitated, and will be given priority over non-water related uses along the coast.

Policy 21A:

Boating and fishing activities should be encouraged provided that they do not restrict other water-related recreational opportunities and are undertaken in a manner compatible with existing water-dependent uses.

Explanation of Policies

Water-related recreation includes such obviously water-dependent activities as boating, swimming and fishing, as well as certain activities which are enhanced by a coastal location and increase the general public's access to the coast such as pedestrian and bicycle trails, picnic areas, scenic overlooks and passive recreation areas that take advantage of coastal scenery.

Provided the development of water-related recreation is consistent with the preservation and enhancement of such important coastal resources as fish and wildlife habitats, aesthetically significant areas, historic and cultural resources, agriculture and significant mineral and fossil deposits, and provided demand exists, water-related recreation development is to be increased and such uses shall have a higher priority than any non-coastal-dependent uses, including non-water-related recreation uses. In addition, water-dependent recreation uses shall have a higher priority over water-enhanced recreation uses. Determining a priority among coastal dependent uses will require a case-by-case analysis.

Among priority areas for increasing water-related recreation opportunities are those areas where access to the recreation opportunities of the coast can be provided by new or existing public transportation services and those areas where the use of the shore is severely restricted by highways, railroads, industry, or other forms of existing intensive land use or development. The Department of State, working with the Office of Parks, Recreation, and Historic Preservation and with local governments, will identify communities whose use of the shore has been so restricted and those sites shoreward of such developments which are suitable for recreation and can be made accessible. Priority shall be given to recreational development of such lands.

The siting or design of new public development in a manner which would result in a barrier to the recreational use of a major portion of a community's shore should be avoided as much as practicable. The Village should continue to establish and improve riverfront trails for public use.

Among the types of water dependent recreation, provision of adequate boating services to meet future demand is to be encouraged by this Program. The siting of boating facilities must be consistent with preservation and enhancement of other coastal resources and with their capacity to accommodate demand. The provision of new public boating facilities is essential in meeting this demand, but such public actions should avoid competition with private boating development. Boating facilities will, as appropriate, include parking, park-like surroundings, toilet facilities, and pump out facilities. Harbors of refuge are particularly needed along Lake Erie and Lake Ontario. There is a need for a better positional pattern of boating facilities to correct problems of overused, insufficient, or improperly sited facilities.

Water-related off-road recreational vehicle use is an acceptable activity; provided no adverse environmental impacts occur. Where adverse environmental impact will occur, mitigating measures will be implemented, where practicable to minimize such adverse impacts. If acceptable mitigation is not practicable, prohibition of the use by off-road recreational vehicles will be posted and enforced. Ground water contamination presents a threat to Fire Island National Seashore water resources.

Any use of Croton Point Park should be low-intensity due to its proximity to and potential impacts on the New York State designated significant coastal fish and wildlife habitats. In addition, pedestrian and vehicular access to the waterfront should be provided. Detailed plans for such access will be reviewed during the planning process to ensure the scale and type of amenities are adequate for the projected use.

Because most of the shoreline is restricted by the railbed, the provision of adequate boating services to meet future demand must be encouraged by this LWRP. In addition, improvement to existing access areas over or under the railbed is also encouraged by this Policy. Opportunities for public boat launching are to be maintained and improved at the Croton Yacht Club, Croton Landing Park and Echo Canoe Launch. The siting of boating facilities must be consistent with preservation and enhancement of other coastal resources, with their capability to accommodate demand, and with the visual access Policy 25.

Potential conflicts and incompatible uses within the Hudson and Croton Rivers include non-power as opposed to power boat use, boat speed, location and ownership of mooring spaces, unsafe boat operators and residential or commercial use of the shoreline without the provision for public access. Resolutions of potential conflicts can be evaluated and mitigated during the planning and approval process for any proposed project.

Public transportation facilities on land, such as shuttle bus services, should be expanded to provide access to public waterfront areas.

See also Policies 2, 4, 7, 8, 9, 22, 30, 31 and 34.

Policy 22:

Development when located adjacent to the shore will provide for water-related recreation whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.

Explanation of Policy

Many developments present practical opportunities for providing recreation facilities as an additional use of the site or facility. Therefore, whenever developments are located adjacent to the shore, they should to the fullest extent permitted by existing law provide for some form of water-related recreation use unless there are compelling reasons why any form of such recreation would not be compatible with the development, or a reasonable demand for public use cannot be foreseen.

The types of development which can generally provide water-related recreation as a multiple use include, but are not limited to:

- Parks
- Highways
- Power Plants
- Utility transmission rights-of-way
- Sewage treatment facilities
- Mental health facilities*
- Hospitals*
- Prisons*
- Schools, universities*
- Military facilities*
- Nature preserves
- Large residential subdivisions (50 units)
- Shopping centers
- Office buildings

*The types of recreation uses likely to be compatible with these facilities are limited to the more passive forms, such as trails or fishing access. In some cases, land areas not directly or immediately needed by the facility could be used for recreation.

Prior to taking action relative to any development, State agencies should consult with the State Office of Parks, Recreation, and Historic Preservation, and if there is an approved local waterfront program, with the municipality in which the development is to locate, to determine appropriate recreation uses. The agency should provide OPRHP and the municipality with the opportunity to participate in project planning.

Appropriate recreation uses which do not require any substantial additional construction shall be provided at the expense of the project sponsor provided that the cost does not exceed 2% of the total project cost. In determining whether compelling reasons exist which would make inadvisable recreation as a multiple use, safety considerations should reflect a recognition that some risk is acceptable in the use of recreational facilities.

Whenever a proposed development would be consistent with CMP policies and the development could, through the provision of recreation and other multiple uses, significantly increase public use of the shore, then such development should be encouraged to locate adjacent to the shore (this situation would generally only apply within the more developed portions of urban areas).

See also Policies 19 and 20.

F. HISTORIC AND SCENIC QUALITY POLICIES

Policy 23:

Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the State, its communities, or the Nation.

Explanation of Policies

Among the most valuable of the State's man-made resources are those structures or areas which are of historic, archeological or cultural significance. The protection of these structures must involve a recognition of their importance by all agencies and the ability to identify and describe them.

Protection must include concern not just with specific sites but with areas of significance, and with the area around specific sites. The policy is not to be construed as a passive mandate but must include active efforts, when appropriate, to restore or revitalize through adaptive reuse. While the program is concerned with the preservation of all such resources within the coastal boundary, it will actively promote the preservation of historic and cultural resources which have a coastal relationship.

The structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture in the State, its communities or the nation comprise the following resources:

1. A resource, which is in a Federal or State park established, among other reasons, to protect and preserve the resource.
2. A resource on, nominated to be on or determined eligible to be on the National or State Registers of Historic Places.
3. A resource on or nominated to be on the State Nature and Historic Preserve Trust.
4. An archaeological resource which is on the State Department of Education's inventory of archaeological sites.
5. A local landmark, park or locally designated historic district that is located within the boundary of an approved local waterfront revitalization program.
6. A resource that is a significant component of an Urban Cultural Park.

All practicable means to protect structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the State, its communities or the Nation shall be deemed to include the consideration and adoption of any techniques, measures or controls to prevent a significant adverse change to such significant structures, districts, areas or sites. A significant adverse change includes but is not limited to:

1. Alteration of or addition to one or more of the architectural, structural, ornamental or functional features of a building, structure or site that is recognized historic, cultural or archaeological resource, or component thereof. Such features are defined as encompassing the style and general arrangement of the exterior of a structure and any original or historically significant interior features including type, color and texture of building materials, entry ways and doors, fenestration, lighting fixtures, roofing, sculpture and carving, steps, rails, fencing, windows, vents and other openings, grillwork, signs, canopies, and other appurtenant fixtures and, in addition all buildings, structures, outbuildings, walks, fences, steps, topographical features, earthworks, paving and signs located on the designated resource property. (To the extent they are relevant, the Secretary of the Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" shall be adhered to.)
2. Demolition or removal in full or part of a building, structure or earthworks that is recognized historic, cultural or archaeological resource or component thereof, to include all those features described in (1) above plus any appurtenant fixtures associated with a building, structure or earthwork.
3. All proposed actions within 500 feet of the perimeter of the property boundary of the historic, cultural or archaeological resource and all actions within a historic district, that would be incompatible with the objective of preserving the quality and integrity of the resource. Primary considerations to be used in making judgment about compatibility should focus on the visual and locational relationship between the proposed action and the special character of the historic, cultural or archaeological resource. Compatibility between the proposed action and the resource means that the general appearance of the resource should be reflected in the architectural style, design material, scale, proportion, composition, mass, line, color, texture, detail, setback, landscaping and related items of the proposed actions. Within historic districts, this would include infrastructure improvements or changes, such as street and sidewalk paving, street furniture and lighting.

This policy shall not be construed to prevent the construction, reconstruction, alteration or demolition of any building, structure, earthwork or component thereof of a recognized historic, cultural or archaeological resource which has been officially certified as being imminently dangerous to life or public health. Nor shall the policy be construed to prevent the ordinary maintenance, repair or proper restoration according to the U.S. Department of Interior's "Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings" of any building, structure, site or earthwork, or component thereof of a recognized historic, cultural or archaeological resource which does not involve a significant adverse change to the resource, as defined above.

Policy 23 applies in the WRA and in particular to the following properties: Van Cortlandt Manor, the Croton North Railroad Station, 126 Old Post Road North (part of the former Wyndhurst Estate), the Baker House (35 Old Post Road North) and the Bethel Chapel.

Policy 23 also applies to sites of important interest on a local level such as Village-owned memorials (the Buchanan-Cortlandt-Croton 9/11 Remembrance Memorial, the World War I Veterans Memorial at the Municipal Building and the memorial located at Veterans Corner).

Policy 24:

Prevent impairment of scenic resources of statewide significance.

Explanation of Policy

The Coastal Management Program will identify on the coastal area map scenic resources of statewide significance. A list of preliminary identified resources appears in the Appendix. The following general criteria will be combined to determine significance:

Quality	The basic elements of design (i.e., two-dimensional line, three-dimensional form, texture and color) combine to create all high quality landscapes. The water, landforms, and human-made components of scenic coastal landscapes exhibit variety of line, form, texture and color. This variety is not, however, so great as to be chaotic. Scenic coastal landscapes also exhibit unity of components. This unity is not, however, so complete as to be monotonous. Example: the Thousand Islands where the mix of water, land, vegetative and human-made components creates interesting variety, while the organization of these same components creates satisfying unity. Often, high quality landscapes contain striking contrasts between lines, forms, textures and colors. Example: A waterfall where horizontal and vertical lines and smooth and turbulent textures meet in dramatic juxtaposition. Page 33 of 50 Finally, high quality landscapes are generally free of discordant features, such as structures or other elements which are inappropriate in terms of siting, form, scale, and/or materials.
Uniqueness	The uniqueness of high quality landscapes is determined by the frequency of occurrence of similar resources in a region of the State or beyond.
Public Accessibility	A scenic resource of significance must be visually and, where appropriate, physically accessible to the public.

Public Recognition Widespread recognition of a scenic resource is not a characteristic intrinsic to the resource. It does, however, demonstrate people's appreciation of the resource for its visual, as well as evocative, qualities. Public recognition serves to reinforce analytic conclusions about the significance of a resource.

When considering a proposed action, agencies shall first determine whether the action could affect a scenic resource of statewide significance. This determination would involve: 1) a review of the coastal area map to ascertain if it shows an identified scenic resource which could be affected by the proposed action, and 2) a review of the types of activities proposed to determine if they would be likely to impair the scenic beauty of an identified resource. Impairment will include: (i) the irreversible modification of geologic forms; the destruction or removal of vegetation; the modification, destruction, or removal of structures, whenever the geologic forms, vegetation or structures are significant to the scenic quality of an identified resource; and (ii) the addition of structures which because of siting or scale will reduce identified views or which because of scale, form, or materials will diminish the scenic quality of an identified resource.

The following siting and facility-related guidelines are to be used to achieve this policy, recognizing that each development situation is unique and that the guidelines will have to be applied accordingly. Guidelines include:

1. siting structures and other development such as highways, power lines, and signs, back from shorelines or in other inconspicuous locations to maintain the attractive quality of the shoreline and to retain views to and from the shore;
2. clustering or orienting structures to retain views, save open space and provide visual organization to a development;
3. incorporating sound, existing structures (especially historic buildings) into the overall development scheme;
4. removing deteriorated and/or degrading elements;
5. maintaining or restoring the original land form, except when changes screen unattractive elements and/or add appropriate interest;
6. maintaining or adding vegetation to provide interest, encourage the presence of wildlife, blend structures into the site, and obscure unattractive elements, except when selective clearing removes unsightly, diseased or hazardous vegetation and when selective clearing creates views of coastal waters;
7. using appropriate materials, in addition to vegetation, to screen unattractive elements;

8. using appropriate scales, forms and materials to ensure that buildings and other structures are compatible with and add interest to the landscape.

Policy 25:

Protect, restore or enhance natural and man-made resources which are not identified as being of statewide significance, but which contribute to the overall scenic quality of the coastal area.

Policy 25A:

Establish and protect identified public viewsheds of the Hudson River, including but not limited to the public views of the Hudson River from the western shoreline of the Village, and of the Croton River and Gorge.

Explanation of Policies

When considering a proposed action which would not affect a scenic resource of statewide significance, agencies shall ensure that the action would be undertaken so as to protect, restore or enhance the overall scenic quality of the coastal area. Activities which could impair or further degrade scenic quality are the same as those cited under the previous policy, i.e., modification of natural landforms, removal of vegetation, etc. However, the effects of these activities would not be considered as serious for the general coastal area as for significant scenic areas.

The siting and design guidelines listed under the previous policy should be considered for proposed actions in the general coastal area. More emphasis may need to be placed on removal of existing elements, especially those which degrade, and on addition of new elements or other changes which enhance. Removal of vegetation at key points to improve visual access to coastal waters is one such change which might be expected to enhance scenic quality.

Although no scenic resources within Croton are identified as being of Statewide significance, the panoramic vista south from Croton Point meets the general criteria guidelines for State designation, including:

- High quality of visual components;
- High-quality landscape based on outstanding design elements, free of discordant features, and visual variety which also exhibits unity of components;
- Uniqueness;
- Very high public accessibility; and
- Public recognition as an area of great visual quality.

The Department of State has conducted a study of scenic resources in the Hudson River coastal area. The western end of Croton Point itself has been identified as distinctive, and the scenic character of the Point and its contribution to the view of Croton from the Hudson River and western shorelands is significant. The Point juts into the River, thus distinguishing Croton from other areas along the Hudson's eastern shoreline. The topography of the Point dramatizes the slope of the inland areas and enhances the views inland to the eastern portion of the Village. It also provides a natural barrier, which allows the water-dependent uses in Senasqua Cove and which have altered the views of the shoreline.

South Riverside Avenue and the Route 9 corridor is also considered of local and regional significance because it allows unparalleled views of western shorelands from major thoroughfares. In order to protect these views, existing deteriorated structures west of the right-of-way should be improved, and aesthetic and physical amenities should be provided, including sound fences, vegetation or architectural screening and painting of facilities.

Due to the topography of the Village, vegetated slopes and undisturbed ridgelines contribute to the scenic quality of Croton and should be preserved. As such, proposed development of these areas should be evaluated in terms of visual impact. In particular, care should be taken regarding development which would impact the viewshed of the Croton Gorge, River and Bay.

The Village adopted Local Law No. 3 of 2008, regulating the development of land containing steep slopes. The Local Law was enacted to further the Village's policy to preserve, protect and conserve its steep slopes so as to maintain and protect the natural terrain and its vegetative features; preserve wetlands, water bodies and watercourses; prevent flooding; protect important scenic views and vistas; preserve areas of wildlife habitat; provide safe building sites; and protect adjoining property by preventing surface erosion, creep and sudden slope failure. Toward this end, new non-exempted construction is to avoid areas that contain steep slopes (areas having a topographical gradient of 15% or greater [ratio of vertical distance to horizontal distance], with a minimum horizontal dimension of 10 feet, whether man-made or natural, and whether created by a retaining structure or not). The Planning Board, the Zoning Board of Appeals, the Village Board and the Water Control Commission will take this objective into consideration in reviewing and acting on any plans or applications submitted pursuant to the provisions of the Local Law.

Policy 26:

Conserve and protect agricultural lands in the State's coastal area.

The State coastal policy regarding the protection of agricultural lands is not applicable to Croton since there is no agricultural land with the Village's waterfront revitalization area.

G. ENERGY AND ICE MANAGEMENT POLICIES

Policy 27:

Decisions on the siting and construction of major energy facilities in the coastal area will be based on public energy needs, compatibility of such facilities with the environment, and the facility's need for a shorefront location.

Explanation of Policy

New York's overall annual energy demand has begun to flatten over time, in part due to the success of State and utility energy efficiency programs. However, peak load (the highest amount of energy consumption in a given year) has continued to increase at a more rapid pace. Renewable power sources—hydro, solar, wind, and other carbon-free solutions—also continue to grow as a share of the total energy produced in the State.[13] Significant investments in the billions of dollars are needed to replace New York's aging electric transmission and distribution infrastructure just to meet currently projected energy demand.[14] To respond to these significant shifts in the State's energy infrastructure, State energy policies are being designed to maintain energy system reliability during peak load in ways that improve the grid's overall system efficiency, from both energy transmission and capital investment perspectives.[15]

The New York State energy planning process provides a comprehensive framework for improving the State's energy system, addressing issues such as environmental impacts, resiliency, and affordability.[16] Key areas of focus for New York's energy planning and implementation policies include integration of renewable energy generation; local energy generation that can foster both economic prosperity and environmental stewardship; seeking innovative energy solutions across the State's public facilities and operations; increasing energy efficiency; and decreasing greenhouse gas emissions.[17] New York's energy policy is also central to how the State responds to the challenges presented by a changing climate. New York State's energy planning recognizes that extreme weather events demand more resilient energy infrastructure, and that climate change presents both challenges and opportunities to lead and innovate.[18]

A determination of public need for energy is the first step in the process for siting new facilities. The directives for determining this need are contained primarily in Article 6 of

[13] 2015 New York State Energy Plan, Vol. 1, p. 10.
[14] 2015 New York State Energy Plan, Vol. 1, pp. 25-26.
[15] 2015 New York State Energy Plan, Vol. 1, p. 27.
[16] 2015 New York State Energy Plan, Vol. 1, p. 9.
[17] 2015 New York State Energy Plan, Vol. 1, p. 7; 2015 New York State Energy Plan, Vol. 1, p. 11.
[18] 2015 New York State Energy Plan, Vol. 1, p. 17.

the New York State Energy Law. That Article requires the preparation of a State Energy Plan. With respect to transmission lines and the siting of major electric generating facilities, Articles 7 and 10 of the State's Public Service Law require additional forecasts and establish the basis for determining the compatibility of these facilities with the environment and the necessity for providing additional electric capacity. The policies derived from the siting regulations under these Articles are entirely consistent with the general coastal zone policies derived from other laws, particularly the regulations promulgated pursuant to the Waterfront Revitalization of Coastal Areas and Inland Waterways Law. That law is used for the purposes of ensuring consistency with the Coastal Management Program.

The Department of State will present testimony for the record during relevant certification proceedings under Articles 7 and 10 of the Public Service Law when appropriate; and use the State SEQR and DOS regulations to ensure that decisions regarding other proposed energy facilities (not subject to Articles 7 and 10 of the Public Service Law) that would affect the coastal area are consistent with coastal policies.

In consultation with the Village of Croton, the Department of State will comment on State Energy office policies and planning reports as may exist; present testimony for the record during relevant proceedings under State Law and use the State SEQR and DOS regulations to ensure that decisions on proposed energy facilities other than those certified under the Public Service Law (PSL) transmission facilities and steam generating plants which would impact the waterfront area are made consistent with the policies and purposes of the Local Waterfront Revitalization Program.

Any proposed expansion by Con Edison or proposed siting of other major energy facilities within the waterfront revitalization area boundary could have a potentially significant impact upon many other important values pertaining to the coastal area and must be assessed for consistency with Policies 18-25A in particular.

Any decisions regarding expansion of Con Edison facilities onto sites within the Village's waterfront revitalization area boundary area should be based on public energy needs, compatibility of such facilities with the environment and the facility's need for a waterfront location, and should be consistent with the policies of this LWRP.

Policy 28:

Ice management practices shall not interfere with the production of hydroelectric power, damage significant coastal fish and wildlife and their habitats, or increase shoreline erosion or flooding.

Explanation of Policy

Prior to undertaking actions required for ice management, an assessment must be made of the potential effects of such actions upon the production of hydro-electric power, fish and wildlife and their habitats as will be identified in the Coastal Area Maps, flood levels and damage, rates of shoreline erosion damage, and upon natural protective features.

Following such an examination, adequate methods of avoidance or mitigation of such potential effects must be utilized if the proposed action is to be implemented.

The Village of Croton-on-Hudson does not undertake any ice management practices within the Hudson or Croton Rivers. Any clearance of the navigation channel of the Hudson River is performed by the U.S. Coast Guard. This policy would be of importance in the event that significant expansion of these activities was proposed which might adversely affect the Haverstraw Bay and Croton River and Bay Significant Fish and Wildlife Habitats.

Policy 29:

The development of offshore uses and resources, including renewable energy resources, shall accommodate New York's long-standing ocean and Great Lakes industries, such as commercial and recreational fishing and maritime commerce, and the ecological functions of habitats important to New York.

Explanation of Policy

The science of ecosystem connections between the coastal zone and offshore areas is increasingly better understood. The offshore environment is an ongoing focus of policy development at national, regional, and state levels. Within this context, New York seeks to accommodate longstanding offshore industries, such as commercial and recreational fishing and maritime commerce, while at the same time Page 41 of 50 ensuring the ecological functioning of habitats important to New York, as the State considers the need for new offshore resource development and uses to occur.

While New York State has jurisdiction in its offshore waters, matters pertaining to the OCS are under the jurisdiction of the federal government. However, offshore resource development and other uses on the OCS may affect coastal resources and uses important to New York. Consequently, the Department of State actively participates in

OCS planning and decision making processes pursuant to the federal Outer Continental Shelf Lands Act and the Deepwater Port Act, among other federal statutes, and reviews and voices the State's concerns about federal OCS activities, licenses, permits, lease sales, plans, and other uses and activities. The federal government increasingly has invited State participation in offshore planning and decision-making processes. New York will continue to review and analyze federal licensing and permitting activities for federal consistency, including activities in offshore areas outside New York's coastal zone. Proponents of offshore activities should use available offshore data to identify and reduce the potential effects on New York's coastal resources, activities and uses. Project proponents should consider the compatibility with, and seek to accommodate, the existing presence of resources, activities and uses that are important to the coastal area of New York State.

In addition to the development of energy resources and the siting of energy facilities, offshore uses of particular concern to New York State because of their potential effects on State coastal uses and resources include, but are not limited to: fisheries management; aquaculture; sand and gravel mining; military readiness training and related exercises; changes or upgrades to established navigation patterns and infrastructure, including the re-routing of existing navigation lanes and the location, placement or removal of navigation devices which are not part of the routine operations under the Aids to Navigation (ATON) program; permits for deepwater ports; the identification of interim or permanent open-water dredged material disposal sites; the intentional submergence of vessels and other structures, including for the purpose of creating artificial reefs; the creation of human-made islands, tidal barriers, or the installation of other fixed structures; scientific research activities; and exploration and identification of potential resources for extraction, such as biopharmaceutical products.

In its review of proposed activities, licenses, permits, lease sales and plans in the Atlantic OCS and New York State coastal waters, the Department of State works with state and federal agencies to considers a number of factors, including but not limited to: the potential effects upon maritime traffic, including navigational safety leading into and from New York's ports; the potential for increased port development and economic activity; aspects of national security; the effects on important finfish, crustaceans, shellfish, seabirds, marine mammals, and other wildlife populations and their spawning, wintering, and foraging habitats and migrating corridors; impacts on biological communities and biodiversity; ecological functioning of ecosystems; economic and other effects upon commercial and recreational fishing activities; impacts upon tourism and public recreational resources and opportunities along the coasts and offshore; the potential for geo-hazards; water quality; and overall effects on the resilience of New York's coastal uses and resources.

Of special significance, New York State recognizes the need to develop energy resources, particularly those that contribute to achieving the State's energy goals, including greenhouse gas reduction. It also recognizes that any energy development may have reasonably foreseeable effects on existing coastal Page 42 of 50 uses and

resources. Among the various energy resources under consideration for development are those which may be found in offshore waters within the state's territorial limit or the Atlantic Outer Continental Shelf (OCS). There are currently no active licenses, permits, lease sales or plans for oil and gas exploration or production in the waters offshore New York State.

The State encourages the responsible development of renewable energy resources. Wind, wave, tidal, and water current resources located offshore New York are an increasing focus of development interest, which may continue to grow as projects become more technologically feasible. Offshore renewable wind energy development is a use which depends on the utilization of resources found in coastal waters. The State recognizes offshore projects directly interconnected to the New York electrical grid as qualifying for eligibility as a dependent use at the same level as though the facility were located within the State.

H. WATER AND AIR RESOURCES POLICIES

Policy 30:

Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to State and National water quality standards.

Policy 30A:

Existing rail services and transportation-related facilities shall not dispose of any regulated materials in coastal waters until all such regulated materials have been tested by the State for conformance with water quality standards.

Explanation of Policies

Municipal, industrial and commercial discharges include not only "end-of-the-pipe" discharges into surface and groundwater, but also plant site runoff, leaching, spillages, sludge and other waste disposal, and drainage from raw material storage sites. Also, the regulated industrial discharges are both those which directly empty into receiving coastal waters and those which pass through municipal treatment systems before reaching the State's waterways.

Such "end-of-the-pipe" discharges are monitored and regulated by the NYS Department of Environmental Conservation SPDES program (State Pollution Discharge Elimination System), as well as by Federal law and the U.S. Department of Environmental Protection. Local vigilance must be exercised to ensure that such State and Federal regulations are adequately enforced. The Village Manager shall request that results of water quality tests by the New York State Department of Environmental Conservation be sent to the Village as a matter of routine. This information is extremely important for the Village since it historically had two Superfund sites (Croton Point Landfill and Metro-North Lagoon) known to have leached materials into coastal waters, and since it is the location of significant rail services and transportation-related facilities which have the potential to dispose of regulated materials in coastal waters.

See also Policies 7 and 10A.

Policy 31:

State coastal area policies and management objectives of approved local waterfront revitalization programs will be considered while reviewing coastal water classifications and while modifying water quality standards; however, those waters already over-burdened with contaminants will be recognized as being a development constraint.

Explanation of Policy

Pursuant to the Federal Clean Water Act of 1977 (PF 95-217), the State has classified its coastal and other waters in accordance with considerations of best usage in the interest of the public and has adopted water quality standards for each class of waters. These classifications and standards are reviewable at least every three years for possible revision or amendment. Local Waterfront Revitalization Programs and State coastal management policies shall be factored into the review process for coastal waters. However, such consideration shall not affect any water pollution control requirement established by the State pursuant to the federal Clean Water Act.

The State has identified certain stream segments as being either "water quality limiting" or "effluent limiting". Waters not meeting State standards and which would not be expected to meet these standards even after applying "best practicable treatment" to effluent discharges are classified as "water quality limiting". Those segments meeting standards or those expected to meet them after application of "best practicable treatment" are classified as "effluent limiting", and all new waste discharges must receive "best practicable treatment". However, along stream segments classified as "water quality limiting", waste treatment beyond "best practicable treatment" would be required, and costs of applying such additional treatment may be prohibitive for new development.

Policy 32:

Encourage the use of alternative or innovative sanitary waste systems in small communities where the costs of conventional facilities are unreasonably high, given the size of the existing tax base of these communities.

Explanation of Policy

Alternative systems include individual septic tanks and other subsurface disposal systems, dual systems, small systems serving clusters of households or commercial users and pressure or vacuum sewers. These types of systems are often more cost effective in smaller, less densely populated communities and for which conventional facilities are too expensive.

Policy 33:

Best management practices will be used to ensure the control of stormwater runoff and combined sewer overflows draining into coastal waters.

Policy 33A:

The flow of stormwater discharge shall be controlled to limit the flow of pollutants from street and parking areas, etc. directly into the rivers and water bodies.

Explanation of Policies

Best management practices include both structural and non-structural methods of preventing or mitigating pollution caused by the discharge of stormwater runoff and combined sewer overflows. At present, structural approaches to controlling stormwater runoff (e.g., construction of retention basins) and combined sewer overflows (e.g., replacement of combined system with separate sanitary and stormwater collection systems) are not economically feasible. Proposed amendments to the Clean Water Act, however, will authorize funding to address combined sewer overflows in areas where they create severe water quality impacts. Until funding for such projects becomes available, non-structural approaches (e.g., improved street cleaning, reduced use of road salt) will be encouraged.

See also Policies 8, 11, 11A and 37A.

Policy 34:

Discharge of waste materials into coastal waters from vessels subject to State jurisdiction will be limited so as to protect significant fish and wildlife habitats, recreational areas and water supply areas.

Policy 34A:

Moored structures or marine vessels shall not discharge ballast water or other releases into the waterway.

Explanation of Policies

All untreated sanitary waste from vessels is prohibited from being discharged into the State's coastal waters. Where coastal resources or activities require greater protection than afforded by this requirement the State may designate vessel waste no discharge zones. Within these no discharge zones the discharge of all vessel waste whether treated or not is prohibited. A determination from EPA that an adequate number of vessel waste pump out stations exists is necessary before the State can designate a no discharge zone. The State prepared a Clean Vessel Act Plan which identifies the coastal waters for which no discharge zones are needed and the number of vessel waste pump outs required to obtain the determination from EPA. The discharge of other wastes from vessels is limited by State law.

The discharge of sewage, garbage, rubbish and other solid and liquid materials from watercraft and marinas into the State's waters is regulated. Priority will be given to the enforcement of this Law in areas such as shellfish beds and other significant habitats, beaches and public water supply intakes, which need protection from contamination by vessel wastes. Specific effluent standards for marine toilets have been promulgated by the Department of Environmental Conservation (6NYCRR, part 657). New marinas should provide pump-out facilities.

See Policies 7, 8, 25, 30, 35, 37 and 44.

Policy 35:

Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.

Explanation of Policy

Dredging, filling and dredge material disposal are activities that are needed for waterfront revitalization and development, such as maintaining navigation channels at sufficient depths, pollutant removal and other coastal management needs. Such projects, however, may adversely affect water quality, fish and wildlife habitats, wetlands and other important coastal resources. Often, these adverse effects can be minimized through careful design and timing of the dredging or filling activities, proper siting of dredge material disposal sites, and the beneficial use of dredged material. Such projects shall only be permitted if they satisfactorily demonstrate that these anticipated adverse effects have been reduced to levels which satisfy State permit standards set forth in regulations developed pursuant to Environmental Conservation Law, (Articles 15, 24, 25, and 34), and are consistent with policies pertaining to the protection and use of coastal resources (State Coastal Management Policies 7, 15, 19, 20, 24, 26, and 44).

See also Policy 7.

Policy 36:

Activities related to the shipment and storage of petroleum and other hazardous materials will be conducted in a manner that will prevent or at least minimize spills into coastal waters; all practicable efforts will be undertaken to expedite the cleanup of such discharges; and restitution for damages will be required when these spills occur.

Explanation of Policy

See Policy 39 for a definition of hazardous materials. The storage of hazardous materials, particularly on lands adjacent to the shoreline and within the floodplain of the Hudson and Croton Rivers, should be evaluated and designed to prevent inundation and subsequent contamination of coastal waters with such hazardous materials.

See also Policies 7, 30, 35, 37, 39A and 44.

Policy 37:

Best management practices will be utilized to minimize the non-point discharge of excess nutrients, organics and eroded soils into coastal waters.

Policy 37A:

Control of the development of hilltops, and steep slopes should be exerted in order to prevent erosion and minimize runoff and flooding from new construction.

Explanation of Policies

Best management practices used to reduce these sources of pollution could include, but are not limited to, encouraging organic farming and pest management principles, soil erosion control practices, and surface drainage control techniques.

Best management practices will be used during the construction and operation of new land uses and incorporated into existing land uses to the maximum extent deemed practicable by the Village Engineer, and in accordance with all relevant Village laws and regulations. Construction activities will be reviewed and approved and operations conducted in accordance with the New York State Stormwater Management Design Manual (New York State Department of Environmental Conservation, most recent version including applicable updates or its successors) and the New York Standards and Specifications for Erosion and Sediment Control (Empire State Chapters of the Soil and Water Conservation Society, 2005, most recent version, including applicable updates, or its successors).

See also Policies 7, 8, 11, 25, 30, 33, 34 and 44.

Policy 38:

The quality and quantity of surface water and ground water supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.

Explanation of Policy

Surface and groundwater are the principal sources of drinking water in the State, and therefore must be protected.

The Village of Croton-on-Hudson depends on groundwater resources for its water supply. The predominant source of the groundwater supply recharge for the Village is the Croton River. Any action which would have an impact on the quality or quantity of the Croton River as a source of recharge for the drinking water aquifer must be thoroughly reviewed and appropriate mitigation measures undertaken.

Currently, water levels in the Croton River are regulated by the New York City Department of Environmental Protection (NYC DEP) as part of the NYCDEP Croton Water Supply System, which supplies a portion of New York City's water through reservoirs and aqueducts. Although flows in the Croton River can be naturally low due to climate and seasonal conditions, NYC DEP is required to maintain certain baseflow conditions in the river as required by NYS DEC regulations.

The Village has Water Supply Protection rules and regulations, contained in Chapter 223 of the Village Code. These regulations define the wellhead protection area, recharge area and watershed tributary to the recharge area. The wellhead protection area, also known as "Zone 1," is defined as the area of the well field itself with a protective perimeter around each of the wells. The aquifer recharge area, also known as "Zone 2," is the land area where precipitation, snow and rain, percolates directly through the ground to an aquifer. The watershed tributary to the aquifer recharge area, also known as "Zone 3," is that land area which is the tributary surface from which the aquifer is replenished by runoff to the aquifer recharge area. Zones 1, 2 and 3 are designated on the map entitled, "Zones of Groundwater Protection, Croton-on-Hudson Well Field."

Policy 39:

The transport, storage, treatment and disposal of solid wastes, particularly hazardous wastes, within coastal areas will be conducted in such a manner so as to protect groundwater and surface water supplies, significant fish and wildlife habitats, recreation areas, important agricultural lands and scenic resources.

Explanation of Policy

The definition of the terms "solid wastes" and "solid waste management facilities" are taken from New York's Solid Waste Management Act (Environmental Conservation Law, Article 27). Solid wastes include sludge from air or water pollution control facilities, demolition and construction debris and industrial and commercial wastes. Hazardous wastes are unwanted by-products of manufacturing processes generally characterized as being flammable, corrosive, reactive or toxic. More specifically, hazardous waste is defined in Environmental Conservation Law (Section 27-0901 (3)) as "waste or combination of wastes which because of its quantity, concentration or physical, chemical or infectious characteristics may: (a) Cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating illness; or (b) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, disposed, transported or otherwise managed." A list of hazardous wastes (NYCRR Part 366) will be adopted by DEC within 6 months after EPA formally adopts its list.

Examples of solid waste management facilities include resource recovery facilities, sanitary landfills and solid waste reduction facilities. Although a fundamental problem associated with the disposal and treatment of solid wastes is the contamination of water resources, other related problems may include: filling of wetlands and littoral areas, atmospheric loading, and degradation of scenic resources.

The transport of wastes along the railroad lines is of concern to the Village of Croton-on-Hudson, as is storage and use of such materials in other waterfront locations.

Policy 40:

Effluent discharged from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to State water quality standards.

Explanation of Policy

The State Board on Electric Generation Siting and the Environment must consider a number of factors when reviewing a proposed site for facility construction. One of these factors is that the facility shall "not discharge any effluent that will be unduly injurious to the propagation and protection of fish and wildlife, the industrial development of the State, the public health, and public enjoyment of the receiving waters." The effect of thermal discharges on water quality and aquatic organisms is considered by the siting board when evaluating any applicant's request to construct a new steam electric generating facility.

See also Policies 7, 7, 38 and 44.

Policy 41:

Land use or development in the coastal area will not cause national or State air quality standards to be violated.

Explanation of Policy

New York's Coastal Management Program incorporates the air quality policies and programs developed for the State by the Department of Environmental Conservation pursuant to the Clean Air Act and State laws on air quality. The requirements of the Clean Air Act are the minimum air quality control requirements applicable within the coastal area.

To the extent possible, the State Implementation Plan will be consistent with coastal lands and water use policies. Conversely, coastal management guidelines and program decisions with regard to land and water use and any recommendations with regard to specific sites for major new or expanded industrial, energy, transportation, or commercial facilities will reflect an assessment of their compliance with the air quality requirements of the State Implementation Plan.

The Department of Environmental Conservation will allocate substantial resources to develop a regulatory and management program to identify and eliminate toxic discharges into the atmosphere. The State's Coastal Management Program will assist in coordinating major toxic control programming efforts in the coastal regions and in supporting research on the multi-media nature of toxics and their economic and environmental effects on coastal resources.

Management guidelines and program decisions regarding land use or development within the Village's waterfront revitalization area or any recommendation regarding the siting of industrial, energy, transportation or commercial facilities must incorporate an assessment of their compliance with the air quality requirements of the State Implementation Plan (SIP). The SIP embodies the requirements of the Clean Air Act and the minimum air quality control requirements applicable within the waterfront revitalization area.

All air quality assessments and determination of minimum air quality control requirements must consider the unique locational situation of the Village with respect to the excessive idling of vehicular traffic at the train station and diesel-fueled rail traffic, as well as nearby point sources.

Policy 42:

Coastal management policies will be considered if the State reclassifies land areas pursuant to the prevention of significant deterioration regulations of the Federal Clean Air Act.

Explanation of Policy

The policies of the State and local coastal management programs concerning proposed land and water uses and the protection and preservation of special management areas will be taken into account prior to any action to change prevention of significant deterioration land classifications in coastal regions or adjacent areas. In addition, the Department of State will provide the Department of Environmental Conservation with recommendations for proposed prevention of significant deterioration land classification designations based on State and local coastal management programs.

Policy 43:

Land use or development in the coastal area must not cause the generation of significant amounts of the acid rain precursors: nitrates and sulfates.

Explanation of Policy

The New York Coastal Management Program incorporates the State's policies on acid rain. As such, the Coastal Management Program will assist in the State's efforts to control acid rain. These efforts to control acid rain will enhance the continued viability of coastal fisheries, wildlife, agricultural, scenic and water resources.

I. WETLAND POLICY

Policy 44:

Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.

Policy 44A:

Wetlands, water bodies and watercourses shall be protected by preventing damage from erosion or siltation, minimizing disturbance, preserving natural habitats and protecting against flood and pollution.

Explanation of Policies

Tidal wetlands include the following ecological zones: coastal fresh marsh, intertidal marsh, coastal shoals, bars and flats, littoral zone, high marsh or salt meadow, and formerly connected tidal wetlands. These tidal wetland areas are officially delineated on the Department of Environmental Conservation's Tidal Wetlands Inventory Map.

Freshwater wetlands include marshes, swamps, bogs, and flats supporting aquatic and semiaquatic vegetation and other wetlands so defined in the NYS Freshwater Wetlands Act and the NYS Protection of Waters Act (Water Resources Law, Environmental Conservation Law Article 15).

The benefits derived from the preservation of tidal and freshwater wetlands include but are not limited to:

- habitat for wildlife and fish, including a substantial portion of the State's commercial fin and shellfish varieties; and contribution to associated aquatic food chains
- erosion, flood and storm control
- natural pollution treatment
- groundwater protection
- recreational opportunities
- educational and scientific opportunities;
- aesthetic open space in many otherwise densely developed areas

Because all wetlands, water bodies and watercourses are presumed to be of importance, their protection, preservation and proper maintenance and use is essential to the health, safety, economic and general welfare of the citizens of the Village. Growth of population and attendant residential and commercial development and increasing demands upon natural resources have the potential of encroaching upon, despoiling, polluting or eliminating many of the wetlands, water bodies and watercourses of the

Village, which if preserved constitute important physical, economic, social, historic, archaeologic, aesthetic, recreational and ecological assets to present and future residents of the Village. Wetlands provide important beneficial functions including natural flood and stormwater control, groundwater recharge, natural pollution treatment, erosion and sediment control, wildlife habitat creation, recreation, open space enhancement and educational and scientific opportunities.

Protection, preservation and proper maintenance and use of the Village's wetlands, water bodies and watercourses shall be provided by preventing damage from misuse and mismanagement, erosion or siltation; minimizing disturbance; preserving natural habitats; and protecting against flooding and pollution.

Both tidal and freshwater wetlands are located in the Village of Croton-on-Hudson (see Figure 13). Freshwater wetlands include marshes, swamps, bogs and flats supporting aquatic and semi-aquatic vegetation and other wetlands so defined in Local Law No. 4 of 2007, Chapter 227 of the Village Code, and in the New York State Freshwater Wetlands Act and New York State Protection of Waters Act. Several wetland areas in Croton-on-Hudson are designated by the NYS Department of Environmental Conservation; all are upper marsh and are located within the Croton River and Bay Significant Coastal Fish and Wildlife Habitat. Wetlands maps prepared by the U.S. Fish and Wildlife Service as part of the National Wetlands Inventory program will also be consulted to identify any additional areas to which this policy applies.

Where thresholds for protection differ among the above-listed laws, the most restrictive conditions that will result in the highest level of protection for the resources shall apply.

See Policies 7, 8, 25, 30, 34, 37 and Figure 13.

SECTION IV:
PROPOSED LAND USES AND PROJECTS

A. INTRODUCTION

The following section describes a set of site-specific and programmatic projects which will be or are being implemented to improve the Village's LWRP area. This section is not intended to anticipate all projects that would further the goals of the LWRP; other future projects may develop that could also improve the LWRP area. It is recognized that limited Village funding resources will require that projects be staged over many years and that outside financial assistance will also be required in the program implementation. All projects, regardless of whether initiated by a public or private entity, will be subject to all applicable Federal, State and local laws, and will require environmental review in conformance with the State Environmental Quality Review Act (SEQRA) and consistency with the policies and goals of this LWRP.

Some projects listed below will be initiated by the Village, while others may be the responsibility of private property owners or other governmental entities. Where applicable, information has been provided regarding potential phasing of activities necessary for implementation.

B. PROPOSED LAND USES

There are no changes proposed to zoning in this LWRP; therefore, no major changes to land uses are anticipated to result from implementation of the LWRP. The focus of this LWRP is primarily on enhancing and improving the public recreation and water-access facilities in Croton-on-Hudson, as well as addressing environmentally sensitive areas.

Because there are no other anticipated changes in land use, the future land use in the Village of Croton-on-Hudson can be expected to be largely similar to the existing land use map presented in Figure 3.

At this time no changes to any water uses are proposed.

C. PROPOSED PROJECTS

Croton River Basin Projects

1. Ensure Maintenance of New Croton Dam Conservation Flow

As discussed in Section II, the health of the 3.5-mile section of the Croton River, between the Croton Reservoir and the Hudson River, is highly influenced by hydrology and reduced summer flows resulting from the NYC water supply system. The Croton River's flows below the New Croton Reservoir are carefully managed by New York City's Department of Environmental Protection (NYC DEP), as part of its extensive water supply network. NYC DEP is required to maintain certain baseflow conditions in the River as part of its New York State Department of Environmental Conservation (NYS DEC) regulations.

New Croton Dam

Maintaining natural river flows below water supply reservoirs is inherently complicated, and requires a difficult balance between human demands and sustainable flows to conserve a river's ecological health.[19] The extent to which the Croton River influences the water located in the aquifer is not completely known. Data documenting ecological impacts of the New Croton Reservoir on the Croton River are also sparse. As discussed in Section II, the flow rate in the Croton River below the reservoir is only a fraction of what naturally should be observed in a watershed of this size. It is not fully understood whether the conservation is sufficient to maintain water levels necessary to recharge and protect the aquifer, support fish and wildlife species as well as public recreation on the river. In addition, the highly variable temperature fluctuations of the releases can cause increased erosion of the stream banks, excessive silting and damage to fish and in-stream wildlife habitats. These severe temperature fluctuations occur more frequently in the summer months, when small constant charges of cool water from the bottom of the reservoir are overwhelmed by large spills of warmer water, typically during or after rain events.

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[19] *A Preliminary Assessment of Croton River Hydrologic Alterations below New Croton Reservoir*. New York State Water Resources Institute at Cornell University.

A study of mandated baseflows is needed to ensure that NYC's Water Supply needs do not negatively affect the Croton River watershed downstream from the New Croton Dam. This would require additional investigation into the current demand on the Croton River water supply needs and the ecological implications inter-basin exports of water have on downstream ecological health. A possible outcome is the optimization of the current flow management regime to better support ecological processes downstream, while still maintaining water supply needs. This study could be initiated by the Village in coordination with the New York State Department of Environmental Conservation's (NYSDEC) Hudson River Estuary Program.

In addition, the Village should work with NYC DEP to improve inter-agency communication about the conservation flow. This is especially important during drought conditions, as DEP is not required to make releases from the New Croton reservoir during drought emergencies. The emergency reduction in flow is a discretionary action by DEP. The Village shall request that DEP consider the impacts to the Village's drinking water supply, as well as to the ecological functions of the Croton River, before reducing the conservation flow to the River. Additionally, the Village shall request to be notified beforehand of any reduction during a drought emergency. Finally, the Village shall work with NYC DEP to form an agreement to maintain the conservation flow.

This project relates to policies 7, 7A, 7B, 7H, 28, and 38A of the LWRP.

2. Address Drainage Systems that Lead to Erosion on Steep Slopes

Steep slopes along Croton Gorge

The objective of this project is to promote activities that will control soil erosion and sedimentation caused by stormwater runoff. These issues are most significant along the steep banks of the Croton River Gorge, where trees and other protective vegetation have been diminished due to development and human use combined with invasive species and wildlife (in particular, the browsing of white-tailed deer, which has decimated the forest understory of the entire 3.5-mile length of the Gorge). A significant amount of erosion also results from unstable stormwater outfalls that discharge untreated water directly onto the steep slopes. The high rate of erosion from these outfalls, combined with the loss of vegetation, has led to structural instability of the slopes and increased sedimentation of the Croton River. This sedimentation has been detrimental to stream quality and wildlife in the Croton River, which is a NYS DOS-

designated Significant Coastal Fish and Wildlife Habitat and also an important source of drinking water for the Village.

This project is supportive of the Indian Brook-Croton Gorge Watershed Conservation Action Plan, which identified a number of specific recommendations that address erosion along the Croton River such as identifying and restoring severe areas of erosion.[20] In particular, the Village will seek to address areas where existing drainage systems are known to contribute to erosion on steep slopes in the Croton Gorge areas, such as near stormwater outfall pipes and at Mayo's Landing and the area behind Carrie E. Tompkins Elementary School.

Funding should be sought by the Village to pre-treat the stormwater prior to discharging it into the streams and waterbodies. Additionally, the Village can identify opportunities to improve vegetation and drainage swales in areas adjacent to roads. Municipal highway staff should be trained in proper methods of repair of the drainage areas.

Retaining tree cover and vegetation would benefit wildlife and reduce stormwater runoff throughout the watershed. The Village should develop a planting plan with appropriate native vegetation. Such plantings should be selected for shade tolerance and to be unattractive to deer. Such plantings might include[21]:

- Groundcovers such as Allegheny Pachysandra or Partridgeberry;
- Larger plants such as ferns, wild geranium or Solomon's plume; and
- Larger shrubs such as Maple Leaf Viburnum, Red Chokeberry or American Highbush Cranberry.

The Village should also consider adopting a program to incentivize private property owners to plant appropriate vegetation along steep slopes to stabilize the land and prevent further erosion.

This project relates to policies 5, 7, 7A, 7B, 7E, 7F, 7G 7H, 11, 12, 13, 14, 16, 17, 17A, 30, 33, 33A, 37, 37A and 38 of the LWRP.

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[20] Indian Brook-Croton Gorge Watershed Conservation Action Plan, Westchester County. January, 2008. Recommendations 7. Page 3-11.

[21] Recommendations on the Administration and Use of Mayo's Landing. Prepared for the Board of Trustees of the Village of Croton-on-Hudson by the Croton River Watershed Compact Committee. April, 2007.

3. Facilitate Upgrades to Catch Basins and Outfalls to Address Floatables in Croton Bay

The intent of this project is to control stormwater runoff discharges and other pollutants from entering Croton Bay. Protecting the ecological health of Croton Bay and River is a priority for the Village. The Croton River and Bay is a NYS DOS-designated Significant Coastal Fish and Wildlife Habitat, and the area has one of the largest shallow bay areas in the lower Hudson that is sheltered from strong currents and wind. The mouth of the Croton River is documented as a migratory fish hub used as a resting, foraging and nursery area. Portions of the River are stocked each year by the NYS DEC with trout.

Land adjacent to Croton Bay

Major areas of concern to the water quality of the Bay are the Shoprite shopping center on South Riverside Avenue, the Route 9/9A roadway and the Metro-North train station and repair yards. The stormwater system at the shopping center feeds directly into a trunk line stretching from Cleveland Drive to Route 9/9A. This line also collects stormwater from about 170 acres of land, including Route 9/9A. Untreated stormwater is discharged directly into Croton Bay. The Village should work with the NYS DOT, which maintains outfalls on Route 9/9A, as well as property owners in the shopping center to reduce stormwater flows and improve catchment basins and on-site stormwater treatment.

The Village-owned and operated commuter parking facility adjacent to the Metro-North station is another source of pollutants into Croton Bay. Presently, all stormwater runoff from the parking facility discharges directly into Croton Bay through an outfall pipe at the southern end of the site. All of the outfalls are outfitted with catch basins and oil/water separators. Regular monitoring and maintenance of these outfall pipes by the Village is necessary. The Village has reported chronic flooding that impacts a portion of the eastern area of the lot, which abuts a wetland. When flooding occurs, Croton Bay is directly exposed to debris and trash, or "floatables" from the parking lot. The Bay is also exposed to wind-swept trash from the lot.

The Village can take a number of steps to reduce stormwater runoff and the amount of pollutants entering the aquatic ecosystem. First, catch basins can be improved, and the frequency of catch basin cleaning can be increased. A routine catch basin cleaning

program should be developed and implemented by the Village. Street sweeping should also be conducted on a regular basis within the parking lot to reduce the risks to water quality. These recommendations are supported by the Indian Brook-Croton Gorge Watershed Conservation Action Plan. This project would be completed by the Village of Croton-on-Hudson.

4. Facilitate Upgrades to Croton-Harmon Parking Lot to Address Floatables in Croton Bay

Parking adjacent to wetlands and Croton Bay

The parking facility is currently overwhelmed by asphalt paving with rows of cars. There is minimal landscaping or greenery, and in certain areas, parking directly abuts wetland areas in the Croton Bay. The Village should consider implementing green infrastructure within the parking lot in order to capture runoff onsite and reduce sewer overflows. Green infrastructure generally refers to systems and practices that use or mimic natural processes to reuse stormwater or runoff on the site where it is generated. In the case of the parking facility, there are a number of opportunities to reduce runoff with landscaping and swales. In many cases, this can be done without the loss of parking, for example with a landscaped cap at the end of each parking row. Landscaping can also help to catch wind-swept debris from entering the bay. Utilizing porous asphalt will also reduce stormwater runoff volume and rate and the discharge of pollutants. Porous asphalt has been found to work well in cold climates, as the rapid drainage of the surface reduces the occurrence of freezing puddles and black ice. Melting snow and ice infiltrates directly into the pavement, facilitating faster melting. This project would be completed by the Village of Croton-on-Hudson.

A parking garage feasibility study conducted by Tim Haahs and Associates analyzed the potential development of structured parking at Croton-Harmon Station. The study found that a parking structure is not needed immediately because adequate parking capacity exists. The study recommended that when capacity is needed, the Village should first

consider developing the DPW site which would add approximately 123 spaces.[22] In 2019, the relocation of the DPW facility was completed.

This project also supports the Indian Brook-Croton Gorge Watershed Conservation Action Plan's recommendation to restore degraded wetlands. As stated in that plan (Recommendation #5), many watershed wetlands have become dominated and degraded by invasive species. Funding should be sought to restore the wetlands, particularly the tidal wetlands located along the Route 9/9A corridor. Restoration of the wetlands would result in improved water quality and improved wildlife habitat, including vital fish habitat. The Village should utilize existing data available from the County and State as well as local data to identify and evaluate degraded wetlands. On-going monitoring should be a part of the restoration effort. The Westchester County Soil and Water Conservation District has an active aquatic habitat restoration program and can provide advice and assistance in this effort.

This project relates to policies 7, 7A, 7B,7C, 7D, 7E, 7F, 7G, 7H, 11, 12, 19, 25, 30, 30A, 30B, 32, 33, 33A, 37, 44 and 44A of the LWRP.

5. Improve Echo Canoe Launch and Village-Owned Land at the southern end of the train station parking lot.

Echo Canoe Launch boat storage

This small area off Croton Bay is used for small boat access (such as canoes, rowboats, dinghies and kayaks) and passive recreation including fishing. The development of this boat launch was a project featured in the Village's 1992 LWRP, and most of the improvements identified have been undertaken by the Village. The Echo Canoe Launch now has a parking area with signage, seating and a storage area for small watercraft. Kayak rentals and lessons are available at the site on a seasonal basis.

[22] Village of Croton-on-Hudson Parking Garage Feasibility Study Report. Tim Haahs and Associates. February, 2011.

This project supports the continued improvement of this recreational area to enhance public access to the Croton River and Bay and the Hudson River. Improvements would include maintenance and improvement as necessary of the boat ramp; exploring additional parking opportunities for the ramp; and enhancing walkways, benches, signage and wayfinding measures. The existing kayak racks are well utilized, and can accommodate 60 kayaks. Additional native plantings along the water's edge would also help to protect and restore the surrounding estuarine ecosystem. Proposed improvements would include a design and construction phase to be implemented by the Village.

Echo Canoe Launch benches

This project relates to policies 2, 2B, 7, 19, 19A, 19B, 19D, 20, 20A, 21, 21A, and 30 of the LWRP.

6. Relocate Village DPW facility

The DPW operates a salt storage shed at the southern end of the Croton-Harmon parking lot. There is also an uncovered storage area near the salt shed for rocks and other construction materials which can leach directly into Croton Bay from the facility.

Proper containment of the salt and maintenance materials on-site is imperative to protect the adjacent wetlands and water quality in Croton Bay. The facility should have drainage and stormwater collection systems around the perimeter of storage areas to prevent salt and sediment loss to groundwater aquifers or nearby waterways. Maintenance of snow and ice removal should also be coordinated with the maintenance of the stormwater conveyance system (i.e. street sweeping and catch basin cleaning).[23] The Village should explore these and other

Village Salt Shed

[23] Indian Brook-Croton Gorge Watershed Conservation Action Plan, Westchester County. January, 2008. Page 3-9.

opportunities to clean up the salt shed facility and improve screening to reduce the degree of leaching.

This project relates to policies 1, 5, 7, 7A, 7B, 7C, 7E, 7H, 11, 19, 19D, 28, 30, 30A, 30B, 33, 33A, and 37 of the LWRP.

7. Facilitate Access to the Hudson River Waterfront

A recurring comment from public input during this LWRP process and prior plans was the need to improve access to the Hudson River waterfront for vehicles, pedestrians and bicyclists. Although there have been some improvements such as the Brook Street pedestrian bridge, in general, access to the waterfront is limited, and difficult in some locations. Vehicular access to Senasqua Park and Croton Landing Park is constrained to one road (Elliott Way) and parking facilities are reportedly heavily utilized, especially during summer weekends. The Village's ability to develop new access structures (i.e. bridges) or larger parking areas is inhibited by the lack of physical space, adequate connections and public funds available for new construction. This project identifies specific opportunities to increase waterfront access in a meaningful and achievable manner.

Narrow segment of Elliott Way

Since space for parking is limited directly along the waterfront, the Village should pursue options for additional parking in areas that have pedestrian links to the waterfront, such as along Riverside Avenue, Municipal Place and Brook Street near the pedestrian bridge. Another opportunity to expand parking along the waterfront exists at Croton Landing Park and the adjacent CSX facility next to the railroad. Currently, there are 50 parking spaces in Croton Landing Park. There is also a small gravel parking area adjacent to the boat launch in the park with space for about 15 cars, and there is space for 8 spaces under the pedestrian bridge ramp. The Village has conducted a preliminary study to expand the existing lot to the north by 30-40 spaces. This expansion would occur over a drainage easement for the CSX septic field area. The Village should coordinate with CSX to connect the property to the Village sewer system to free up the easement area for parking use. There is also additional CSX property adjacent to the railroad that does not appear to be heavily utilized. The Village should reach out to CSX to investigate the potential to lease or purchase some of the property for additional parking, if needed.

Pedestrian access is available in some areas, but the safety of such access should be improved. Enhanced pedestrian paths could be provided at Echo Canoe Launch and at Black Rock, where the linkage to a Croton River Gorge Trail would mean the development of a footpath or sidewalk.

Over the longer-term, the Village and County should explore pedestrian linkages from Croton Landing Park to Oscawana County Park in the Town of Cortlandt, with a possible connection to the Graff Sanctuary in Croton (see Project 9). This may require a planning study to determine potential linkages and would be done in coordination with the Town of Cortlandt and Westchester County.

This project relates to policies 11, 12, 13, 14, 16, 17, 18, 19, 19A, 19B, 19C, 20 and 21 of the LWRP.

8. Facilitate Croton Yacht Club/Croton Landing improvements

The concept of a waterfront restaurant, or another use at the southern end of Croton Landing Park, adjacent to the Croton Yacht Club, has been discussed by the Village for years. In 2013, the Village conducted a feasibility study of alternative uses for a 13.4-acre property which included the Croton Yacht Club (CYC) and potentially a small portion in Croton Landing Park. The Village saw a restaurant at this location to be a benefit to boaters and users of the park. If any such use were proposed for a portion of Croton Landing Park, it would be on a license or concession basis.

As part of the study, which included a community survey, respondents noted that a passive recreation area was desired; however, a restaurant was a preferred use if any commercial development were to occur within Croton Landing Park. During the public outreach for this LWRP, there was no consensus as to whether a restaurant would be an appropriate use at/near Croton Landing Park. The purpose of this project is to evaluate the community's support for new uses in this location. This would entail continued engagement with the community.

A restaurant which uses good site design to take advantage of a waterfront proximity and views is an example of a water enhanced use. If a restaurant were to be developed at the site, it would be situated so as not to conflict with any water-dependent uses. Existing public access to the waterfront would need to be maintained, specifically the marina at the Croton Yacht Club and the boat launch and riverfront path at Croton Landing Park. Existing locations used for fishing shall be maintained.

In 2011, the Village conducted a study to evaluate alternative development options for the CYC, which is located on Village-owned property. The study was prompted by the Village's need to replace the bulkhead at the site and also address their expiring lease with the Club. The bulkhead repair, which was subsequently completed by the Village, placed pressure on the need to increase revenue from existing or additional uses located on this key section of Croton's riverfront. The study identified revenue-producing uses to help the site remain financially sustainable. The study determined that the most

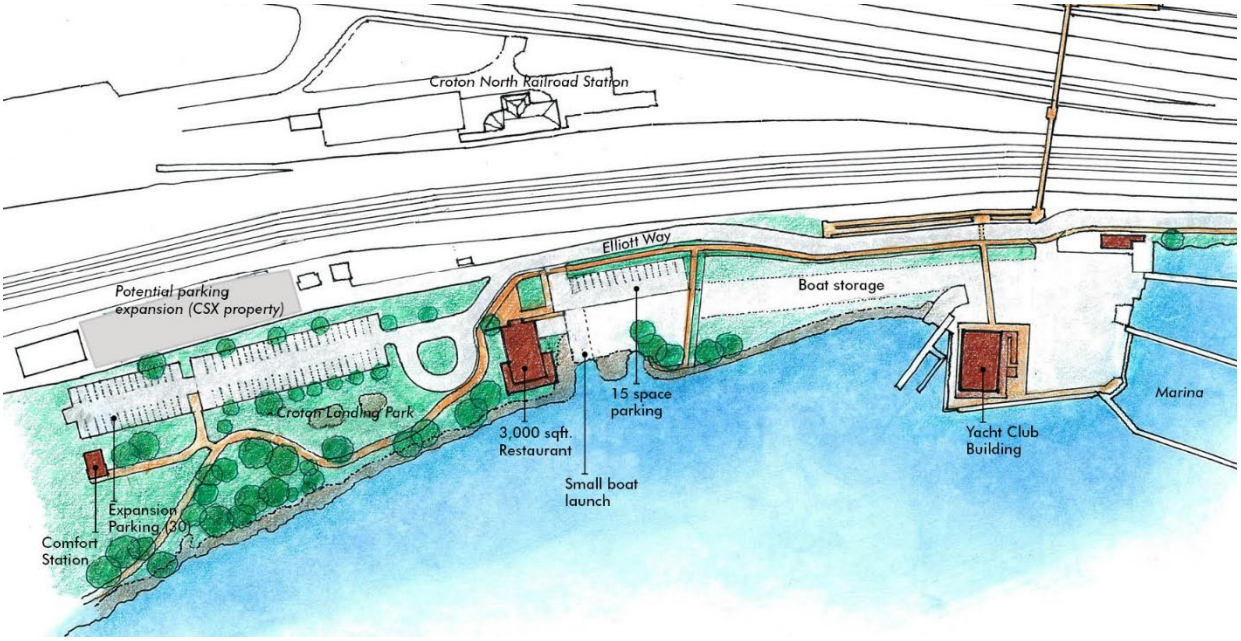
viable location for a restaurant would be at the southern end of Croton Landing Park. The preferred location was in roughly the same spot proposed in the 2001 feasibility study. There is also a historical precedent as that location featured a bar and a restaurant prior to its conversion into a park. The graphic below illustrates the preferred conceptual site plan with the surrounding uses. Some important features of this plan include:

- A 3,000-square-foot restaurant;
- A landscaped pathway between the CYC and the boat launch to buffer the site and provide access to the water;
- An expanded parking lot in Croton Landing Park (30 spaces);
- A widened right-of-way with a sidewalk in front of the CYC; and
- An improved entrance at the CYC with a pathway to the pedestrian bridge

The study identified significant constraints to development on site. The site is in the 100-year floodplain as identified in the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM). The current FEMA advisory Base Flood Elevation Map changes show that if a restaurant were to be built, the first floor would have to be between 4 feet and 9 feet above the existing grade (depending on site selection). The high first floor elevation will have an impact on construction costs and design elements including aesthetics, access (ADA ramps; higher elevations require longer ramps), and obstruction of views. These elements would have to be discussed with the public if Village were to pursue a restaurant in this location.

Parking is also an issue as there is already insufficient on-site parking at Croton Landing Park to satisfy demand during busy hours. The Croton Yacht Club Site Evaluation Study conducted by the Village in 2013 estimated that approximately 70 spaces would be needed to satisfy peak demand for the park and a 3,000-square-foot restaurant. There are opportunities for shared parking, as the peak time for the restaurant would be at dinner when the park is used less frequently. However, during the day on the weekends, there may be a conflict. If the Village pursues this project, it should consider opportunities to increase parking in the vicinity, such as negotiating the use of CSX property, developing new parking along Brook Street or potentially requiring valet parking services. These opportunities should be discussed with the public as part of the public engagement process of a planning study.

This project relates to policies 1, 11, 12, 18, 19, 20, 20A, 21 and 22 of the LWRP.

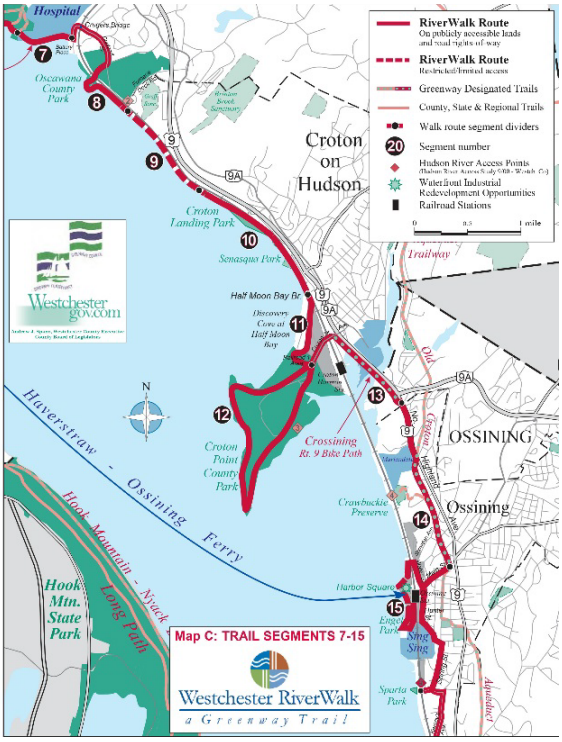


Conceptual location for waterfront restaurant (Source: Croton Yacht Club Site Evaluation Plan)

9. Implement segment of RiverWalk Trail from Croton Landing Park to Oscawana County Park

The Westchester County RiverWalk is a planned 46.6-mile pathway paralleling the Hudson that links village centers, historic sites, parks and river access points via a connection of trails, esplanades and boardwalks. It spans 14 municipalities in Westchester, from the Town of Cortlandt's border with Putnam County south to the City of Yonkers' border with New York City. The RiverWalk is part of the Hudson River Valley Greenway system. It has been developed through a series of projects constructed by the County, local municipalities and other entities, including private developers.

According to the Hudson River Trailway Plan (2003), Westchester County has proposed a 1-mile trail along the Hudson River that would connect Croton Landing Park with Oscawana County Park in Cortlandt. This trail would fill a gap between the RiverWalk trails at these two parks. The trail's proposed route follows a strip of land situated along the Metro-North railroad right-of-way between the tracks and the Hudson. This path could utilize a dirt road alignment that is currently used by railroad maintenance workers and informally by fishermen.



Westchester RiverWalk trail segments

This project involves design and construction phases. The portion of the RiverWalk in this location would require an agreement with Metro-North for use of the right-of-way. Additional site issues include the design of safety features and fencing to separate trail users from the railroad tracks, as well as special design treatment for narrow areas between tracks and water.

It is recognized that the County has limited financial resources to support the development of a public waterfront walkway northward from Croton Landing Park. Outside financial assistance will be required to implement this program.

This project relates to policies 1, 12, 18, 19, 19A, and 19B of the LWRP

Village-wide Projects

10. Undertake management and capital improvement plan for Village parks, trails, open spaces and memorials.

The Village's Recreation and Parks Department manages and maintains municipal parks and recreational facilities including Senasqua Park, Silver Lake Park, Croton Landing Park, Dobbs Park, Duck Pond Park, Sunset Park, Harrison Street Park, Vassallo Park, Black Rock Park, Gouveia Park, Firefighters Memorial Field, David J. Manes Memorial Field and Echo Canoe Launch. These parks represent a significant investment by the Village to provide a variety of enjoyable recreation and leisure opportunities for residents. Since the last LWRP was adopted, the Village has made substantial improvements and investments at Silver Lake Park, Black Rock Park, the Croton Gorge Walking Trail, Senasqua Park, Echo Canoe Boat Launch and Croton Landing Park. In 2015, the Village acquired the Gouveia Property at 1300 Albany Post Road and is considering options for public amenities at that site (see Project 11). The Village also maintains the following memorials: World War I, World War II, and the BCC 9-11 Memorial. While the Village has been committed to providing new places and experiences that add to the quality of life for its residents, it recognizes the need for a plan to protect, maintain and enhance its existing facilities to ensure they remain in good condition for the long-term.

This project supports the creation of a Parks Maintenance and Capital Improvement Plan to address ongoing care and protection of existing parks, open spaces and trails. The goal would be to provide an action plan for regular maintenance and targeted capital improvements when needed. The maintenance program would evaluate annual labor, supply and equipment needs, and develop effective and efficient ways to keep park landscapes and facilities maintained and working properly. The Plan would be a guiding document for Village staff and also provide the general public with an understanding of the scope of work related to park and trail operations and maintenance.

Black Rock Park

The Parks Maintenance and Capital Improvement Plan would include the following elements for each park facility:

- Park general use and condition;
- Use, conditions and recommendations for facilities within the park (i.e., playground, recreational area, sidewalks, signage, lighting, trees, and trash receptacles);
- Equipment needs and/or park upgrades;
- Yearly management/maintenance needs and associated costs;
- A schedule for periodic surveys to evaluate maintenance.

The plan, which would be undertaken by the Village, could also include an outreach component to solicit a public evaluation of park and trail maintenance. This could be done with an online survey or with comment/suggestion boxes placed in the parks. Public outreach could also be utilized to encourage community volunteer resources to assist in park beautification projects, e.g., rain gardens, restoration projects; invasive species control; and installation of signage, new playground structures, etc. These types of activities bring community members together, especially in neighborhood park settings, and can create a sense of ownership that will help ensure that the parks will remain in good condition as well as current with the needs of the community.

This project relates to policies 1, 18, 23 and 23A of the LWRP.

11. Develop plan for future use of Gouveia Park

The purpose of this project is for the Village to create a conceptual plan that will examine how to best utilize the Gouveia Park, a 15.63-acre site acquired by the Village. This well-maintained property, located at 1300 Albany Post Road, was donated to the Village by the Gouveia family to be used as a public park. Generally, uses would be ones that would benefit from the scenic views, natural light and serene atmosphere of the property.

The Gouveia site has varied topography, with an elevation change of approximately 140 feet within its boundaries. The northern portion of the site includes a number of features such as a park-like lawn, a single-family home, storage buildings and a man-made pond. The home is unique, with its mid-century modern "all glass" main living floor providing sweeping views up and down the Hudson. The southern portion of the site is heavily forested and has some steep slopes.

With regard to potential uses at the site, there are numerous long-term possibilities. The Village is considering installing a trail on the property's southerly section, which would connect to an existing path from Brinton Brook Sanctuary and the Jane Lytle Arboretum that comes down Arrowcrest Drive and ends directly across the street from the Gouveia property. The trail would provide a destination for walkers that culminates in forested

views of the Hudson River to the west. This park improvement would require a minor investment by the Village and may be one of the few near-term uses at the site until the Village determines the best use for the property.

Gouveia Park (residence and grounds)

The northern portion of the property, with its gently sloping lawn, mature trees and views of the Hudson River, has the most potential to be utilized as a park space. The naturally sloped lawn is well suited for informal seating for artistic or cultural performance events.

The plan could include adaptation of the indoor space of the single-family home for public use.

This project relates to policies 1 and 19, 19A, 19B of the LWRP.

SECTION V:
TECHNIQUES FOR LOCAL IMPLEMENTATION OF THE PROGRAM

Section V is intended to identify the techniques by which implementation of the LWRP and the specific projects can be accomplished. It includes a discussion of existing local laws and regulations, how they relate to LWRP policies, as well as the management structures to implement the LWRP. No changes to any local laws or regulations are proposed in this LWRP.

A. EXISTING LAWS AND REGULATIONS[24]

A. Boats and Boating – Chapter 83

i. This Chapter of the Village Code regulates the speed, mooring and discharge of waste for all mechanically or electrically propelled watercraft in the portion of the Croton River within the Village and northeast of the railroad bridge.
ii. This Ordinance relates most closely to LWRP policies pertaining to public access and water-related recreation (Policies 19, 21 and 22); fish and wildlife (Policies 7, 7A, 7B and 8); and water and air resources (Policies 30 and 34).

B. Building Construction – Chapter 86

i. This Ordinance provides the structure and procedures for the Village of Croton-on-Hudson Engineering Department, responsible for administration and enforcement of all laws, ordinances, rules, regulations and orders applicable to the location, design, materials, construction, alteration, repair, equipment, maintenance, use, occupancy, removal and demolition of buildings and structures.
ii. The Ordinance is most closely associated with Policies 1 and 2, which concern development and redevelopment within the LWRP area.

C. Energy Conservation – Chapter 114

i. This Chapter seeks to promote energy efficiency and renewable energy goals, reduce greenhouse gas emissions, mitigate the effect of global climate change and advance a clean energy economy. It establishes a program that will allow the Energy Improvement Corporation (EIC), a local development corporation acting on behalf of the Village, to make funds available for qualified property owners to make energy efficiency improvements.

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[24] The full text of all Village laws referenced herein may be found online at: http://ecode360.com/CR0035?needHash=true.

ii. This Ordinance deals most closely with LWRP Policies 41, 42 and 43, pertaining to air quality.

D. Environmental Compliance – Chapter 115

i. This Chapter provides the ability for the Planning Board to retain an environmental compliance consultant to review subdivision, site plan and special permit applications to ensure that environmentally sensitive areas are protected during the course of construction and land development.
ii. The Ordinance relates most directly to Policies 1 and 2, which concern development and redevelopment within the LWRP area, but also relates to policies dealing with fish and wildlife habitats, historic and cultural resources, scenic resources, protective natural features, water and air resources and wetlands.

E. Environmental Review – Chapter 116

i. This Chapter of the Village Code implements the State Environmental Quality Review Act (SEQRA). It establishes procedures necessary to assure full review of environmental impacts of proposed actions, improvements and developments within Croton-on-Hudson.
ii. This Chapter pertains to the majority of the policies included in the LWRP, especially those dealing with development issues and the protection of important man-made and natural resources.

F. Excavation, Filling and Topsoil Removal – Chapter 120

i. This Ordinance provides for the preservation and protection of Croton's natural topography and regulates and/or prohibits excavation, the removal of topsoil or other materials and the filling, draining, clearing, operating and using of land in any manner that may: create hazardous or dangerous conditions; impair the usefulness of the subject property or surrounding properties; cause soil erosion which depletes the land of vegetative cover and other organic materials; diverts or causes water to collect on the property of others; interferes with any existing or planned drainage facilities; or causes excessive runoff.
ii. This Ordinance relates most closely with LWRP Policy 12, on protection of natural features, and Policy 15, on excavation in coastal waters. Both policies concern protection against or minimizing potential erosion and flood hazards.

G. Flood Damage Prevention – Chapter 129

i. This Chapter of the Village Code includes provisions designed to promote the public health, safety and general welfare and to minimize public and private losses due to flooding. It includes methods and provisions for restricting or prohibiting uses which are dangerous due to water or erosion hazards or which result in damaging increases in erosion or in flood heights or velocities; requiring that uses vulnerable to floods be protected at the time of initial construction; controlling the alteration of natural floodplain, stream channels and natural protective barriers; controlling filling, grading, dredging and other activities which may increase flood damage; preventing and/or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands; and qualifying for and maintaining participation in the National Flood Insurance Program.

ii. This Ordinance deals most closely with Policies 1 and 2, which relate to development and redevelopment activities in the waterfront area, and policies on flood and erosion hazards and related protective features including: Policy 11, siting structures to minimize damage; Policy 12, protection of natural protective features; Policy 14, preventing increases in flooding; Policy 15, control of alteration of coastal waters; and Policy 17, use of non-structural measures to minimize damage from flooding.

H. Parks and Recreation Areas – Chapter 168

i. This Ordinance regulates activities within and uses of all parks, playgrounds, beach or other recreation areas of the Village. The Ordinance includes provisions for the hours of use of parks, lists prohibited activities and provides for procedures and enforcement of regulations.

ii. Chapter 168 relates most directly with the LWRP policies pertaining to public access, recreation and the protection of fish and wildlife. More specifically, Policies 19, 20 and 21, dealing with the protection, maintenance and expansion of recreation resources and the levels and types of access to them, and Policies 7, 8 and 9, concerning the protection of fish and wildlife resources from the introduction of hazardous wastes and other pollutants, and the expansion of recreational usage of fish and wildlife resources, respectively, are addressed by this Ordinance.

I. Sewers – Chapter 191

i. This Chapter provides for the proper disposal of sewage and wastewaters and the proper operation and maintenance of the public sewers, sewage treatment plant and other sewage works within the Village.

ii. The Ordinance deals most directly with the policies concerning protection and conservation of water resources, more specifically Policies 30, 33, 39 and 40, as well as Policy 8, which deals with the protection of fish and wildlife resources from hazardous wastes and other pollutants.

J. Steep Slope Protection – Chapter 195

i. This Ordinance is intended to preserve, protect and conserve steep slope areas so as to maintain and protect the natural terrain and its vegetative features; preserve wetlands, water bodies and watercourses; prevent flooding; protect important scenic views and vistas; preserve areas of wildlife habitat; provide safe building sites; and protect adjoining property by preventing surface erosion, creep and sudden slope failure.

ii. Chapter 195 is most applicable to flood and erosion hazards Policies 12, on protection of natural features; 14, preventing increases in flooding; 15, control of alteration of coastal waters; and 17, use of non-structural measures to minimize damage from flooding. The Ordinance also relates to fish and wildlife policy 7, on protection of fish and wildlife habitats; historic and scenic resource Policy 25, on protection of natural and man-made resources which contribute to scenic quality; water and air resources Policy 33, on control of stormwater runoff; and wetlands Policy 44, on protection of wetlands.

K. Stormwater, Drainage, Erosion and Water Pollution Control – Chapter 196

i. This Chapter establishes minimum stormwater management requirements and controls to meet the requirements of the SPDES permit process; minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature and stream bank erosion and to maintain the integrity of stream channels; minimize increases in pollution caused by stormwater runoff; minimize the total annual volume of stormwater runoff; and reduce stormwater runoff rates and volumes, soil erosion and non-point source pollution.

ii. The Chapter is most applicable to water and air resources Policies 12, 33 and 37, on the control of stormwater runoff and combined sewer overflows and minimizing the discharge of excess nutrients, organics and eroded soils into coastal waters, respectively; as well as fish and wildlife Policy 8, on protection of fish and wildlife resources from hazardous waste and other pollutants. The Chapter also helps to implement Policies 18 and 25, safeguarding vital economic, social and environmental interests and protecting natural and man-made resources.

L. Trees – Chapter 208

i. This Ordinance promotes the planting and preservation of trees within Croton-on-Hudson, to protect the health, safety and general welfare of the Village by providing shade, impeding soil erosion, aiding water absorption and retention, inhibiting excess runoff and flooding, enhancing air quality, offering a natural barrier to noise, providing a natural habitat for wildlife, providing screening, enhancing property values and adding to the aesthetic quality of the community.
ii. Chapter 208 pertains to the majority of the policies included in the LWRP, especially those dealing with significant wildlife habitats (Policies 7 and 8), scenic resources (Policy 24), protection of natural features (Policy 12), water and air resources (Policies 30, 31, 33, 26-28 and 40-43), wetlands (Policy 44) and erosion control (Policies 11, 13, 14, 16 and 17).

M. Waterfront Revitalization – Chapter 225

i. This Chapter provides a framework for agencies to consider the LWRP policies and purposes when reviewing applications for consistency with the LWRP.
ii. Chapter 225 is relevant to all LWRP policies applicable in Croton

N. Wetlands – Chapter 227

i. This Chapter of the Village Code provides for the protection, preservation, property maintenance and use of wetlands, water bodies and watercourses in the Village by preventing damage from erosion or siltation, minimizing disturbance, preserving natural habitats and protecting against flooding and pollution of these water resources.
ii. This Ordinance deals most closely with Policy 44, preservation of wetlands.

O. Zoning – Chapter 230

i. The Village of Croton-on-Hudson's Zoning Law regulates how land can be used, and at what intensity and under what conditions development can occur. The Zoning Law was amended in 2014 to implement recommendations of the Village's Comprehensive Plan, including the creation of a new RA-60 single-family residence district and the rezoning of several open space areas to the PRE (Parks, Recreation and Education) District.
ii. This Chapter deals most closely with Policies 1 and 2, which relate to development and redevelopment activities within the LWRP area.

B. MANAGEMENT STRUCTURE TO IMPLEMENT THE LWRP

1. The Board of Trustees shall be the lead agency and, together with the Village Manager of Croton-on-Hudson, are responsible for overall management and coordination of the Local Waterfront Revitalization Program.
2. The review of proposed actions for consistency with the policies and provisions of the Village of Croton-on-Hudson LWRP will be undertaken by the lead agency for an action, in accordance with the provisions of § 225 of the Village Code.
3. Implementation of the LWRP is to be accomplished through the previously identified projects, together with the review procedure established in § 225 of the Village Code.
4. State and Federal agencies identified in Section VI will notify the Village Manager of the Village of Croton-on-Hudson of proposed actions in or likely to affect the LWRP area. Such actions will be subject to the same consistency review as provided by the Waterfront Revitalization of Coastal Areas and Inland Waterways Act, the Coastal Zone Management Act and their implementing regulations.

The implementation of the proposed projects identified in Section IV will require funding from a combination of public and private sources. These costs may include capital outlays, maintenance costs and, potentially in some cases, property acquisition. For many of the projects, costs are undetermined at this time. It is recognized that if the majority of the projects identified are implemented, they will be funded privately or supplemented by State and Federal funding. Where applicable, the Village will work diligently to secure funding through grants available through State and Federal program funds, as well as other grants and in-kind assistance from governmental entities, elected representatives, quasi-governmental organizations and private entities, to support implementation of the identified LWRP projects.

Ongoing management of the LWRP will not require outside sources of funding.

SECTION VI:
STATE AND FEDERAL ACTIVITIES LIKELY TO AFFECT IMPLEMENTATION OF THE LOCAL PROGRAM

State and federal actions will affect and be affected by implementation of the LWRP. Under State Law and the U.S. Coastal Zone Management Act, certain State and federal actions within or affecting the local waterfront area must be consistent, or consistent to the maximum extent practicable, with the enforceable policies and purposes of the LWRP. This consistency requirement makes the LWRP a unique, intergovernmental mechanism for setting policy and making decisions, and helps to prevent detrimental actions from occurring and future options from being needlessly foreclosed. At the same time, the active participation of State and federal agencies is also likely to be necessary to implement specific provisions of the LWRP.

A. STATE ACTIONS AND PROGRAMS WHICH SHOULD BE UNDERTAKEN IN A MANNER CONSISTENT WITH THE LWRP

Pursuant to the State Waterfront Revitalization of Coastal Areas and Inland Waterways Act (Executive Law, Article 42), the Secretary of State notifies affected State agencies of those agency actions and programs that are to be undertaken in a manner consistent with approved LWRPs. The following list of State actions and programs is that list. The State Waterfront Revitalization of Coastal Areas and Inland Waterways Act requires that an LWRP identifies those elements of the program that can be implemented by the local government, unaided, and those that can only be implemented with the aid of other levels of government or other agencies. Such statement shall include those permit, license, certification or approval programs; grant, loan subsidy or other funding assistance programs; facilities construction, and planning programs that may affect the achievement of the LWRP.

OFFICE FOR THE AGING

1.0 Funding and/or approval programs for the establishment of new or expanded facilities providing various services for the elderly.

DEPARTMENT OF AGRICULTURE AND MARKETS

1.00 Agricultural Districts Program
2.00 Rural Development Program
3.00 Farm Worker Services Program
4.00 Permit and approval programs:
- 4.01 Custom Slaughters/Processor Permit
- 4.02 Processing Plant License
- 4.03 Refrigerated Warehouse and/or Locker Plant License

5.00 Farmland Protection Implementation Grant

6.00 Agricultural Nonpoint Source Abatement and Control Program

DIVISION OF ALCOHOLIC BEVERAGE CONTROL/ STATE LIQUOR AUTHORITY

1.00 Permit and Approval Programs:

- 1.01 Ball Park - Stadium License
- 1.02 Bottle Club License
- 1.03 Bottling Permits
- 1.04 Brewer's Licenses and Permits
- 1.05 Brewer's Retail Beer License
- 1.06 Catering Establishment Liquor License
- 1.07 Cider Producer's and Wholesaler's Licenses
- 1.08 Club Beer, Liquor, and Wine Licenses
- 1.09 Distiller's Licenses
- 1.10 Drug Store, Eating Place, and Grocery Store Beer Licenses
- 1.11 Farm Winery and Winery Licenses
- 1.12 Hotel Beer, Wine, and Liquor Licenses
- 1.13 Industrial Alcohol Manufacturer's Permits
- 1.14 Liquor Store License
- 1.15 On-Premises Liquor Licenses
- 1.16 Plenary Permit (Miscellaneous-Annual)
- 1.17 Summer Beer and Liquor Licenses
- 1.18 Tavern/Restaurant and Restaurant Wine Licenses
- 1.19 Vessel Beer and Liquor Licenses
- 1.20 Warehouse Permit
- 1.21 Wine Store License
- 1.22 Winter Beer and Liquor Licenses
- 1.23 Wholesale Beer, Wine, and Liquor Licenses

OFFICE OF ALCOHOLISM AND SUBSTANCE ABUSE SERVICES

1.00 Facilities, construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Permit and approval programs:

- 2.01 Certificate of approval (Substance Abuse Services Program)

3.00 Permit and approval:

- 3.01 Letter Approval for Certificate of Need
- 3.02 Operating Certificate (Alcoholism Facility)
- 3.03 Operating Certificate (Community Residence)
- 3.04 Operating Certificate (Outpatient Facility)
- 3.05 Operating Certificate (Sobering-Up Station)

COUNCIL ON THE ARTS

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.
2.00 Architecture and environmental arts program.

OFFICE OF CHILDREN AND FAMILY SERVICES

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.
2.00 Homeless Housing and Assistance Program.
3.00 Permit and approval programs:
- 3.01 Certificate of Incorporation (Adult Residential Care Facilities)
- 3.02 Operating Certificate (Children's Services)
- 3.03 Operating Certificate (Enriched Housing Program)
- 3.04 Operating Certificate (Home for Adults)
- 3.05 Operating Certificate (Proprietary Home)
- 3.06 Operating Certificate (Public Home)
- 3.07 Operating Certificate (Special Care Home)
- 3.08 Permit to Operate a Day Care Center

DEPARTMENT OF CORRECTIONS AND COMMUNITY SUPERVISION

1.0 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

DORMITORY AUTHORITY OF THE STATE OF NEW YORK

1.00 Financing of higher education and health care facilities.
2.00 Planning and design services assistance program.

EDUCATION DEPARTMENT

1.00 Facilities construction, rehabilitation, expansion, demolition or the funding of such activities.
2.00 Permit and approval programs:
- 2.01 Certification of Incorporation (Regents Charter)
- 2.02 Private Business School Registration
- 2.03 Private School License
- 2.04 Registered Manufacturer of Drugs and/or Devices
- 2.05 Registered Pharmacy Certificate
- 2.06 Registered Wholesale of Drugs and/or Devices
- 2.07 Registered Wholesaler-Repacker of Drugs and/or Devices
- 2.08 Storekeeper's Certificate

3.00 Administration of Article 5, Section 233 of the Educational Law regarding the removal of archaeological and paleontological objects under the waters of the State.

OFFICE OF EMERGENCY MANAGEMENT

- hazard identification,
- loss prevention, planning, training, operational response to emergencies,
- technical support, and disaster recovery assistance.

EMPIRE STATE DEVELOPMENT/ EMPIRE STATE DEVELOPMENT CORPORATION

1.00 Preparation or revision of statewide or specific plans to address State economic development needs.

2.00 Allocation of the state tax-free bonding reserve.

ENERGY RESEARCH AND DEVELOPMENT AUTHORITY

1.00 Issuance of revenue bonds to finance pollution abatement modifications in power-generation facilities and various energy projects.

2.00 New Construction Program – provide assistance to incorporate energy-efficiency measures into the design, construction and operation of new and substantially renovated buildings.

3.00 Existing Facilities Program – offers incentives for a variety of energy projects

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of lands under the jurisdiction of the Department.

2.00 Classification of Waters Program; classification of land areas under the Clean Air Act.

3.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

4.00 Financial assistance/grant programs:

- 4.01 Capital projects for limiting air pollution
- 4.02 Cleanup of toxic waste dumps
- 4.03 Flood control, beach erosion, and other water resource projects
- 4.04 Operating aid to municipal wastewater treatment facilities
- 4.05 Resource recovery and solid waste management capital projects
- 4.06 Wastewater treatment facilities

6.00 Implementation of the Environmental Quality Bond Act of 1972, including:

- (a) Water Quality Improvement Projects
- (b) Land Preservation and Improvement Projects including Wetland Preservation and Restoration Projects, Unique Area Preservation Projects, Metropolitan Parks Projects, Open Space Preservation Projects, and Waterways Projects.

7.00 Marine Finfish and Shellfish Programs

9.00 Permit and approval programs

Air Resources

9.01 Certificate of Approval for Air Pollution Episode Action Plan

9.02 Certificate of Compliance for Tax Relief – Air Pollution Control Facility

9.03 Certificate to Operate: Stationary Combustion Installation; Incinerator; process, exhaust or Ventilation System

9.04 Permit for Burial of Radioactive Material

9.05 Permit for Discharge of Radioactive Material to Sanitary Sewer

9.06 Permit for Restricted Burning

9.07 Permit to Construct; a Stationary Combustion Installation; Incinerator; Indirect Source of Air Contamination; Process, Exhaust or Ventilation System

Construction Management

9.08 Approval of Plans and Specifications for Wastewater Treatment Facilities

Fish and Wildlife

9.09 Certificate to Possess and Sell Hatchery Trout in New York State

9.10 Commercial Inland Fisheries Licenses

9.11 Fishing Preserve License

9.12 Fur Breeder's License

9.13 Game Dealer's License

9.14 Licenses to breed Domestic Game Animals

9.15 License to Possess and Sell Live Game

9.16 Permit to Import, Transport and/or Export under Section 184.1 (11-0511)

9.17 Permit to Raise and Sell trout

9.18 Private Bass Hatchery Permit

9.19 Shooting Preserve Licenses

9.20 Taxidermy License

9.21 Permit – Article 15, (Protection of Water) – Dredge and Deposit Material in a Waterway

9.22 Permit – Article 15, (Protection of Water) – Stream Bed or Bank Disturbances

9.23 Permit – Article 24, (Freshwater Wetlands)

Hazardous Substances

9.24 Permit to Use Chemicals for the Control or Elimination of Aquatic Insects

9.25 Permit to Use Chemicals for the Control or Elimination of Aquatic Vegetation

9.26 Permit to Use Chemicals for the Control or Elimination of Undesirable Fish

Lands and Forest

9.27 Certificate of Environmental Safety (Liquid Natural Gas/Liquid Petroleum Gas)

9.28 Floating Object Permit

9.29 Marine Regatta Permit

9.30 Navigation Aid Permit

Marine Resources

9.31 Digger's Permit (Shellfish)
9.32 License of Menhaden Fishing Vessel
9.33 License for Non Resident Food Fishing Vessel
9.34 Non Resident Lobster Permit
9.35 Marine Hatchery and/or Off Bottom Culture Shellfish Permits
9.36 Permits to Take Blue Claw Crabs
9.37 Permit to Use Pond or Trap Net
9.38 Resident Commercial Lobster Permit
9.39 Shellfish Bed Permit
9.40 Shellfish Shipper's Permits
9.41 Special Permit to Take Surf Clams from Waters other than the Atlantic Ocean
9.42 Permit – Article 25, (Tidal Wetlands)

Mineral Resources

9.43 Mining Permit
9.44 Permit to Plug and Abandon (a non-commercial, oil, gas or solution mining well)
9.45 Underground Storage Permit (Gas)
9.46 Well Drilling Permit (Oil, Gas and Solution Salt Mining)

Solid Wastes

9.47 Permit to Construct and/or operate a Solid Waste Management Facility
9.48 Septic Tank Cleaner and Industrial Waste Collector Permit

Water Resources

9.49 Approval of Plans for Wastewater Disposal Systems
9.50 Certificate of Approval of Realty Subdivision Plans
9.51 Certificate of Compliance (Industrial Wastewater Treatment Facility)
9.52 Letters of Certification for Major Onshore Petroleum Facility Oil Spill Prevention and Control Plan
9.53 Permit Article 36, (Construction in Flood Hazard Areas)
9.54 Permit for State Agency Activities for Development in Coastal Erosion Hazards Areas
9.55 Permit for State Agency Activities for Development in Coastal Erosion Hazards Areas
9.56 State Pollutant Discharge Elimination System (SPDES) Permit
9.57 Approval – Drainage Improvement District
9.58 Approval – Water (Diversions for Power)
9.59 Approval of Well System and Permit to Operate
9.60 Permit – Article 15, (Protection of Water) – Dam
9.61 Permit – Article 15, Title 15 (Water Supply)
9.62 River Improvement District Permits

9.63 River Regulatory District approvals
9.64 Well Drilling Certificate of Registration
9.65 401 Water Quality Certification
10.00 Preparation and revision of Air Pollution State Implementation Plan.
11.00 Preparation and revision of Continuous Executive Program Plan.
12.00 Preparation and revision of Statewide Environmental Plan.
13.00 Protection of Natural and Man-made Beauty Program.
14.00 Urban Fisheries Program.
15.00 Urban Forestry Program.
16.00 Urban Wildlife Program.

ENVIRONMENTAL FACILITIES CORPORATION

1.0 Financing program for pollution control facilities for industrial firms and small businesses.

DEPARTMENT OF FINANCIAL SERVICES (DEPARTMENT OF BANKING)

1.00 Permit and approval programs:
1.01 Authorization Certificate (Bank Branch)
1.02 Authorization Certificate (Bank Change of Location)
1.03 Authorization Certificate (Bank Charter)
1.04 Authorization Certificate (Credit Union Change of Location)
1.05 Authorization Certificate (Credit Union Charter)
1.06 Authorization Certificate (Credit Union Station)
1.07 Authorization Certificate (Foreign Banking Corporation Change of Location)
1.08 Authorization Certificate (Foreign Banking Corp. Public Accommodations Office)
1.09 Authorization Certificate (Investment Company Branch)
1.10 Authorization Certificate (Investment Company Change of Location)
1.11 Authorization Certificate (Investment Company Charter)
1.12 Authorization Certificate (Licensed Lender Change of Location)
1.13 Authorization Certificate (Mutual Trust Company Charter)
1.14 Authorization Certificate (Private Banker Charter)
1.15 Authorization Certificate (Public Accommodation Office – Banks)
1.16 Authorization Certificate (Safe Deposit Company Branch)
1.17 Authorization Certificate (Safe Deposit Company Change of Location)
1.18 Authorization Certificate (Safe Deposit Company Charter)
1.19 Authorization Certificate (Savings Bank Charter)
1.20 Authorization Certificate (Savings Bank DeNovo Branch Office)
1.21 Authorization Certificate (Savings Bank Public Accommodations Office)
1.22 Authorization Certificate (Savings and Loan Association Branch)

1.23 Authorization Certificate (Savings and Loan Association Change of Location)
1.24 Authorization Certificate (Savings and Loan Association Charter)
1.25 Authorization Certificate (Subsidiary Trust Company Charter)
1.26 Authorization Certificate (Trust Company Branch)
1.27 Authorization Certificate (Trust Company – Change of Location)
1.28 Authorization Certificate (Trust Company Charter)
1.29 Authorization Certificate (Trust Company Public Accommodations Office)
1.30 Authorization to Establish a Life Insurance Agency
1.31 License as a Licensed Lender
1.32 License for a Foreign Banking Corporation Branch

OFFICE OF GENERAL SERVICES

1.00 Administration of the Public Lands Law for acquisition and disposition of lands, grants of land and grants of easement of land under water, issuance of licenses for removal of materials from lands under water, and oil and gas leases for exploration and development.
2.00 Administration of Article 4 B, Public Buildings Law, in regard to the protection and management of State historic and cultural properties and State uses of buildings of historic, architectural or cultural significance.
3.00 Facilities construction, rehabilitation, expansion, or demolition.
4.00 Administration of Article 5, Section 233, Subsection 5 of the Education Law on removal of archaeological and paleontological objects under the waters of the State.
5.00 Administration of Article 3, Section 32 of the Navigation Law regarding location of structures in or on navigable waters.
6.00 Section 334 of the State Real Estate Law regarding subdivision of waterfront properties on navigable waters to include the location of riparian lines.

DEPARTMENT OF HEALTH

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.
2.00 Permit and approval programs:
2.01 Approval of Completed Works for Public Water Supply Improvements
2.02 Approval of Plans for Public Water Supply Improvements.
2.03 Certificate of Need (Health Related Facility except Hospitals)
2.04 Certificate of Need (Hospitals)
2.05 Operating Certificate (Diagnostic and Treatment Center)
2.06 Operating Certificate (Health Related Facility)
2.07 Operating Certificate (Hospice)
2.08 Operating Certificate (Hospital)

2.09 Operating Certificate (Nursing Home)
2.10 Shared Health Facility Registration Certificate

DIVISION OF HOMES AND COMMUNITY RENEWAL and its subsidiaries and affiliates

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Financial assistance/grant programs:
2.01 Federal Housing Assistance Payments Programs (Section 8 Programs)
2.02 Housing Development Fund Programs
2.03 Neighborhood Preservation Companies Program
2.04 Public Housing Programs
2.05 Rural Initiatives Grant Program
2.06 Rural Preservation Companies Program
2.07 Rural Rental Assistance Program
2.08 Special Needs Demonstration Projects
2.09 Urban Initiatives Grant Program
2.10 Urban Renewal Programs

3. 00 Preparation and implementation of plans to address housing and community renewal needs.

OFFICE OF MENTAL HEALTH

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

2.00 Permit and approval programs:
2.01 Operating Certificate (Community Residence)
2.02 Operating Certificate (Family Care Homes)
2.03 Operating Certificate (Inpatient Facility)
2.04 Operating Certificate (Outpatient Facility)

DIVISION OF MILITARY AND NAVAL AFFAIRS

1.0 Preparation and implementation of the State Disaster Preparedness Plan.

NATURAL HERITAGE TRUST

1.0 Funding program for natural heritage institutions.

OFFICE OF PARKS, RECREATION, AND HISTORIC PRESERVATION (including Regional State Park Commission)

1.00 Acquisition, disposition, lease, grant of easement, or other activities related to the management of land under the jurisdiction of the Office.

2.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

3.00 Funding program for recreational boating, safety, and enforcement.
4.00 Funding program for State and local historic preservation projects.
5.00 Land and Water Conservation Fund programs.
6.00 Nomination of properties to the Federal and/or State Register of Historic Places.
7.00 Permit and approval programs:
- 7.01 Floating Objects Permit
- 7.02 Marine Regatta Permit
- 7.03 Navigation Aide Permit
- 7.04 Posting of Signs Outside State Parks

8.00 Preparation and revision of the Statewide Comprehensive Outdoor Recreation Plan and the Statewide Comprehensive Historic Preservation Plan and other plans for public access, recreation, historic preservation or related purposes.
9.00 Recreation services program.
10.00 Urban Cultural Parks Program.
11.00 Planning, construction, rehabilitation, expansion, demolition or the funding of such activities and/or projects funded through the Environmental Protection Fund (Environmental Protection Act of 1993) or Clean Water/Clean Air Bond Act of 1996.

OFFICE FOR PEOPLE WITH DEVELOPMENTAL DISABILITIES

1.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.
2.00 Permit and approval programs:
- 2.01 Establishment and Construction Prior Approval
- 2.02 Operating Certificate Community Residence
- 2.03 Outpatient Facility Operating Certificate

POWER AUTHORITY OF THE STATE OF NEW YORK

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of land under the jurisdiction of the Authority.
2.00 Facilities construction, rehabilitation, expansion, or demolition.

NEW YORK STATE SCIENCE AND TECHNOLOGY FOUNDATION

1.00 Corporation for Innovation Development Program.
2.00 Center for Advanced Technology Program.

DEPARTMENT OF STATE

1.00 Appalachian Regional Development Program.
2.00 Coastal Management Program.

2.10 Planning, construction, rehabilitation, expansion, demolition or the funding of such activities and/or projects funded through the Environmental Protection Fund (Environmental Protection Act of 1993) or Clean Water/Clean Air Bond Act of 1996.

3.00 Community Services Block Grant Program.

4.00 Permit and approval programs:

4.01 Billiard Room License

4.02 Cemetery Operator

4.03 Uniform Fire Prevention and Building Code

STATE UNIVERSITY CONSTRUCTION FUND

1.0 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

STATE UNIVERSITY OF NEW YORK

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of land under the jurisdiction of the University.

2.00 Facilities construction, rehabilitation, expansion, or demolition or the funding of such activities.

DEPARTMENT OF TRANSPORTATION

1.00 Acquisition, disposition, lease, grant of easement, and other activities related to the management of land under the jurisdiction of the Department.

2.00 Construction, rehabilitation, expansion, or demolition of facilities, including but not limited to:

(a) Highways and parkways

(b) Bridges on the State highways system

(c) Highway and parkway maintenance facilities

(d) Rail facilities

3.00 Financial assistance/grant programs:

3.01 Funding programs for construction/reconstruction and reconditioning/preservation of municipal streets and highways (excluding routine maintenance and minor rehabilitation)

3.02 Funding programs for development of the ports of Albany, Buffalo, Oswego, Ogdensburg and New York

3.03 Funding programs for rehabilitation and replacement of municipal bridges

3.04 Subsidies program for marginal branch lines abandoned by Conrail

3.05 Subsidies program for passenger rail service

4.00 Permits and approval programs:

4.01 Approval of applications for airport improvements (construction projects)

4.02 Approval of municipal applications for Section 18 Rural and Small Urban Transit Assistance Grants (construction projects)

4.03 Approval of municipal or regional transportation authority applications for funds for design, construction and rehabilitation of omnibus maintenance and storage facilities

4.04 Approval of municipal or regional transportation authority applications for funds for design and construction of rapid transit facilities

4.05 Certificate of Convenience and Necessity to Operate a Railroad

4.06 Highway Work Permits

4.07 License to Operate Major Petroleum Facilities

4.08 Outdoor Advertising Permit (for off premises advertising signs adjacent to interstate and primary highway)

4.09 Real Property Division Permit for Use of State Owned Property

5.00 Preparation or revision of the Statewide Master Plan for Transportation and sub-area or special plans and studies related to the transportation needs of the State.

6.00 Water Operation and Maintenance Program Activities related to the containment of petroleum spills and development of an emergency oil spill control network.

DIVISION OF YOUTH

1.0 Facilities construction, rehabilitation, expansion, or demolition or the funding for approval of such activities.

B. FEDERAL ACTIVITIES AFFECTING LAND AND WATER USES AND NATURAL RESOURCES IN THE COASTAL ZONE OF NEW YORK STATE

Note: This LWRP's list of the federal agency activities is identical to the most recent version of the Table 3 list in the New York State Coastal Management Program as approved by the federal Office for Coastal Management on May 7, 2017. Please contact the New York State Department of State, Office of Planning and Development and Community Infrastructure, at (518) 474-6000, for any updates to New York State Coastal Management Program Table 3 federal agency activities list that may have occurred post-approval of this LWRP.

This list has been prepared in accordance with the consistency provisions of the federal Coastal Zone Management Act and implementing regulations in 15 CFR Part 930. It is not exhaustive of all activities subject to the consistency provisions of the federal Coastal Zone Management Act, implementing regulations in 15 CFR Part 930, and the New York Coastal Management Program. It includes activities requiring:

1. the submission of consistency determinations by federal agencies;
2. the submission of consistency certifications by entities other than federal agencies; and
3. the submission of necessary data and information to the New York State Department of State, in accordance with 15 CFR Part 930, Subparts C, D, E, F and I, and the New York Coastal Management Program.

a. Activities Undertaken Directly by or on Behalf of Federal Agencies

The following activities, undertaken directly by or on behalf of the identified federal agencies, are subject to the consistency provisions of the Coastal Zone Management Act, its implementing regulations in 15 CFR Part 930, Subpart C, and the New York Coastal Management Program.

Department of Commerce, National Marine Fisheries Service:

- Fisheries Management Plans

Department of Defense, Army Corps of Engineers:

- Proposed authorizations for dredging, channel improvement, breakwaters, other navigational works, erosion control structures, beach replenishment, dams or flood control works, ice management practices and activities, and other projects with the potential to impact coastal lands and waters.
- Land acquisition for spoil disposal or other purposes.

- Selection of open water disposal sites.

Department of Defense, Air Force, Army and Navy:

- Location, design, and acquisition of new or expanded defense installations (active or reserve status, including associated housing, transportation or other facilities).
- Plans, procedures and facilities for handling or storage use zones.
- Establishment of impact, compatibility or restricted use zones.

Department of Energy:

- Prohibition orders.

General Services Administration:

- Acquisition, location and design of proposed Federal government property or buildings, whether leased or owned by the Federal government.

Department of Interior, Fish and Wildlife Service:

- Management of National Wildlife refuges and proposed acquisitions.

Department of Interior, National Park Service:

- National Park and Seashore management and proposed acquisitions.

Department of Interior, Bureau of Ocean Energy Management:

- OCS lease sale activities including tract selection, lease sale stipulations, etc.

Department of Homeland Security, Coast Guard:

- Location and design, construction or enlargement of Coast Guard stations, bases, and lighthouses.
- Location, placement or removal of navigation devices which are not part of the routine operations under-the Aids to Navigation Program (ATON).
- Expansion, abandonment, designation or anchorages, lightering areas or shipping lanes and ice management practices and activities.

Department of Transportation, Federal Aviation Administration:

- Location and design, construction, maintenance, and demolition of Federal aids to air navigation.

Department of Transportation, Federal Highway Administration:

- Highway construction

b. Federal Licenses and Permits and Other Forms of Approval or Authorization

The following activities, requiring permits, licenses, or other forms of authorization or approval from Federal agencies, are subject to the consistency provisions of the Coastal Zone Management Act, its implementing regulations in 15 CFR Part 930, Subpart D, and the New York Coastal Management Program.

Department of Defense, Army Corps of Engineers:

- Construction of dams, dikes or ditches across navigable waters, or obstruction or alteration of navigable waters required under Sections 9 and 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401, 403).
- Establishment of harbor lines pursuant to Section 11 of the Rivers and Harbors Act of 1899 (33 U.S.C. 404, 405).
- Occupation of seawall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the U.S. pursuant to Section 14 of the Rivers and Harbors Act of 1899 (33 U.S.C. 408).
- Approval of plans for improvements made at private expense under USACE supervision pursuant to the Rivers and Harbors Act of 1902 (33 U.S.C. 565).
- Disposal of dredged spoils into the waters of the U.S., pursuant to the Clean Water Act, Section 404 (33 U.S.C. 1344).
- All actions for which permits are required pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972(33 U.S.C. 1413).
- Construction of artificial islands and fixed structures in Long Island Sound pursuant to Section 4 (f) of the River and Harbors Act of 1912 (33 U.S.C.).

Department of Energy, Federal Energy Regulatory Commission:

- Licenses for non-Federal hydroelectric projects and primary transmission lines under Sections 3 (11), 4 (e) and 15 of the Federal Power Act (16 U.S.C. 796 (11), 797 (11) and 808).
- Orders for interconnection of electric transmission facilities under Section 202 (b) of the Federal Power Act (15 U.S.C. 824 a (b)).

- Certificates for the construction and operation of interstate natural gas pipeline facilities, including both pipelines and terminal facilities under Section 7 (c) of the Natural Gas Act (15 U.S.0 717 f (c)).
- Permission and approval for the abandonment of natural gas pipeline facilities under Section 7(b) of the Natural Gas Act (15 U.S.C. 717 f (b)).

Department of Energy, Economic Regulatory Commission:

- Regulation of gas pipelines, and licensing of import or export of natural gas pursuant to the Natural Gas Act (15 U.S.C. 717) and the Energy Reorganization Act of 1974.
- Exemptions from prohibition orders.

Environmental Protection Agency:

- NPDES permits and other permits for Federal installations, discharges in contiguous zones and ocean waters, sludge runoff and aquaculture permits pursuant to Sections 401, 402, 403, 405, and 318 of the Federal Grater Pollution Control Act of 1972 (33 U.S.C. 1341, 1342, 1343, and 1328).
- Permits pursuant to the Resources Recovery and Conservation Act of 1976.
- Permits pursuant to the underground injection Control program under Section 1424 of the Safe Water Drinking Water Act (42 U.S.C. 300 h-c).
- Permits pursuant to the Clean Air Act of 1976 (42 U.S.C. 1857).

Department of Interior, Fish and Wildlife Services:

- Endangered species permits pursuant to the Endangered Species Act (16 U.S.C. 153 (a)).

Department of Interior, Bureau of Ocean Energy Management:

- Permits to drill, rights of use and easements for construction and maintenance of pipelines, gathering and flow lines and associated structures pursuant to 43 U.S.C. 1334, exploration and development plans, and any other permits or authorizations granted for activities described in detail in OCS exploration, development, and production plans.
- Permits required for pipelines crossing federal lands, including OCS lands, and associated activities pursuant to the OCS Lands Act (43 U.S.C. 1334) and 43 U.S.C. 931 (c) and 20 U.S.C. 185.

Surface Transportation Board:

- Authority to abandon railway lines (to the extent that the abandonment involves removal of trackage and disposition of right-of-way); authority to construct railroads; authority to construct slurry pipelines.

Nuclear Regulatory Commission:

- Licensing and certification of the siting, construction, and operation of nuclear power plants, pursuant to Atomic Energy Act of 1954, Title II of the Energy Reorganization Act of 1974 and the National Environmental Policy Act of 1969.

Department of Transportation:

- Construction or modification of bridges, causeways or pipelines over navigable waters pursuant to 49 U.S.C. 1455.
- Permits for Deepwater Ports pursuant to the Deepwater Ports Act of 1974 (33 U.S.C. 1501).

Department of Transportation, Federal Aviation Administration:

- Permits and licenses for construction, operation or alteration of airports.

c. Federal Financial Assistance to State and Local Governments

The following activities, involving financial assistance from federal agencies to state and local governments, are subject to the consistency provisions of the Coastal Zone Management Act, its implementing regulations in 15CFR Part 930, Subpart F, and the New York Coastal Management Program. When these activities involve financial assistance for entities other than State and local governments, the activities are subject to the consistency provisions of 15 CFR Part 930, Subpart C.

Department of Agriculture

10.068 Rural Clean Water Program
10.409 Irrigation, Drainage, and Other Soil and Water Conservation Loans
10.410 Low to Moderate Income Housing Loans
10.411 Rural Housing Site Loans
10.413 Recreation Facility Loans
10.414 Resource Conservation and Development Loans
10.415 Rural Rental Housing Loans

10.416 Soil and Water Loans
10.418 Water and Waste Disposal Systems for Rural Communities
10.419 Watershed Protection and Flood Prevention Loans
10.422 Business and Industrial Loans
10.423 Community Facilities Loans
10.424 Industrial Development Grants
10.426 Area Development Assistance Planning Grants
10.429 Above Moderate Income Housing Loans
10.430 Energy Impacted Area Development Assistance Program
10.901 Resource Conservation and Development
10.902 Soil and Water Conservation
10.904 Watershed Protection and Flood Prevention
10.906 River Basin Surveys and Investigations

Department of Commerce

11.300 Economic Development - Grants and Loans for Public Works and Development Facilities
11.301 Economic Development - Business Development Assistance
11.302 Economic Development - Support for Planning Organizations
11.304 Economic Development - State and Local Economic Development Planning
11.305 Economic Development - State and Local Economic Development Planning
11.307 Special Economic Development and Adjustment Assistance Program - Long Term Economic Deterioration
11.308 Grants to States for Supplemental and Basic Funding of Titles I, II, III, IV, and V Activities
11.405 Anadromous and Great Lakes Fisheries Conservation
11.407 Commercial Fisheries Research and Development
11.417 Sea Grant Support
11.427 Fisheries Development and Utilization Research and Demonstration Grants and Cooperative Agreements Program
11.501 Development and Promotion of Ports and Intermodal Transportation
11.509 Development and Promotion of Domestic Water-borne Transport Systems

Department of Housing and Urban Development

14. 112 Mortgage Insurance - Construction or Substantial Rehabilitation of Condominium Projects
14. 115 Mortgage Insurance - Development of Sales Type Cooperative Projects
14. 117 Mortgage Insurance - Homes

14. 124 Mortgage Insurance - Investor Sponsored Cooperative Housing
14. 125 Mortgage Insurance - Land Development and New Communities
14. 126 Mortgage Insurance - Manages ant Type Cooperative Projects
14. 127 Mortgage Insurance - Mobile Home Parks
14. 218 Community Development Block Grants/Entitlement Grants
14. 219 Community Development Block Grants/Small Cities Program
14. 221 Urban Development Action Grants
14. 223 Indian Community Development Block Grant Program

Department of the Interior

15.400 Outdoor Recreation - Acquisition, Development and Planning
15.402 Outdoor Recreation - Technical Assistance
15.403 Disposal of Federal Surplus Real Property for Parks, Recreation, and Historic Monuments
15.411 Historic Preservation Grants-In-Aid
15.417 Urban Park and Recreation Recovery Program
15.600 Anadromous Fish Conservation
15.605 Fish Restoration
15.611 Wildlife Restoration
15.613 Marine Mammal Grant Program
15.802 Minerals Discovery Loan Program
15.950 National Water Research and Development Program
15.951 Water Resources Research and Technology - Assistance to State Institutes
15.952 Water Research and Technology-Matching Funds to State Institutes

Department of Transportation

20.102 Airport Development Aid Program
20.103 Airport Planning Grant Program
20.205 Highway Research, Planning, and Construction Railroad Rehabilitation and Improvement - Guarantee of Obligations
20.309 Railroad Rehabilitation and Improvement – Guarantee of Obligations
20.310 Railroad Rehabilitation and Improvement - Redeemable Preference Shares
20.506 Urban Mass Transportation Demonstration Grants
20.509 Public Transportation for Rural and Small Urban Areas

General Services Administration

39.002 Disposal of Federal Surplus Real Property

Community Services Administration

49.002 Community Action

49.011 Community Economic Development
49.013 State Economic Opportunity Offices
49.017 Rural Development Loan Fund
49.018 Housing and Community Development (Rural Housing)

Small Business Administration
59.012 Small Business Loans
59.013 State and Local Development Company Loans
59.024 Water Pollution Control Loans
59.025 Air Pollution Control Loans
59.031 Small Business Pollution Control Financing Guarantee

Environmental Protection Agency
66.001 Air Pollution Control Program Grants
66.418 Construction Grants for Wastewater Treatment Works
66.426 Water Pollution Control - State and Area-wide Water Quality Management Planning Agency
66.451 Solid and Hazardous Waste Management Program Support Grants
66.452 Solid Waste Management Demonstration Grants
66.600 Environmental Protection Consolidated Grants Program Support
66.800 Comprehensive Environmental Response, Compensation and Liability (Superfund)

Note: Numbers refer to the Catalog of Federal Domestic Assistance Programs, 1980 and its subsequent updates before 2006.

C. STATE AND FEDERAL ACTIONS AND PROGRAMS NECESSARY TO FURTHER THE VILLAGE OF CROTON-ON-HUDSON LWRP PROGRAMS

This part is a more descriptive list of State and federal agency actions that are necessary for further implementation of this LWRP. It is recognized that a State and federal agency's ability to undertake such actions is subject to a variety of factors and considerations; that the consistency provisions referred to above, may not apply; and that the consistency requirements cannot be used to require a State or federal agency to undertake an action it could not undertake pursuant to other provisions of law. Reference should be made to Section II, Section IV and Section V, which discuss local goals, proposed projects and local implementation techniques, including State and federal assistance needed to implement the approved LWRP.

1. FEDERAL ACTIONS AND PROGRAMS

a. Department of Defense, Army Corps of Engineers

Riprap improvements along the Hudson River would require a U.S. Army Corps of Engineers permit. This Federal agency is involved in any action involving the Hudson River.

b. Department of the Interior, National Park Service

Provision of funding under the Land and Water Conservation Fund Program.

2. STATE ACTIONS AND PROGRAMS

a. NYS Office of General Services

Prior to any development occurring in the water or on the immediate waterfront, OGS should be consulted for a determination of the State's interest in underwater or formerly underwater lands and for authorization to use and occupy these lands.

b. NYS Department of Environmental Conservation

Any improvements along the Croton River and Bay would require approval from the DEC, since most of the Croton River and all of Croton Bay are classified as "B" streams, suitable for primary recreation, but not for use as a water supply source.

DEC should continually supply water quality monitoring results to the Village.

c. NYS Office of Parks, Recreation and Historic Preservation

Any proposed linkage of shoreline public parks should be designed and constructed with the cooperation and assistance of the State Council of Parks, Recreation and Historic Preservation. This trail system would eventually link with other local trails to become part of a greenway system along the entire span of the eastern side of the Hudson River throughout Westchester County.

d. NYS Department of Commerce

Any action or provision of funds for the development or promotion of tourism-related activities or development.

e. NYS Department of State

Provision of funding for the implementation of the Local Waterfront Revitalization Program.

f. NYS Department of Transportation

Coordination of potential future waterfront access improvements as they may affect Route 9 and Route 9A.

3. REGIONAL AUTHORITIES

a. Metropolitan Transportation Authority

Coordination of future improvements to the Croton Harmon Station parking lot to improve stormwater management and aesthetic quality.

4. OTHER ENTITIES

a. CSX

Coordination of potential connection to Village sewer system to free up the area occupied by a drainage easement for the CSX septic field area, and of the potential to lease or purchase unutilized portions of the CSX property for Village use.

SECTION VII:
LOCAL COMMITMENT AND CONSULTATION

A. INVOLVED PARTIES

During preparation of the LWRP, the following agencies were consulted for agency- or department-specific information necessary to accurately prepare the document.

Federal Consultation
No direct Federal consultation has taken place at this time.

State Agency Consultation
New York State Department of State

Local/Regional Consultation
Village of Croton-on-Hudson Planning Board
Village of Croton-on-Hudson Board of Trustees
Village of Croton-on-Hudson Village Manager
Village of Croton-on-Hudson Engineering Department
Village of Croton-on-Hudson Waterfront Advisory Committee
Westchester County Department of Planning

B. REVIEW OF DRAFT LWRP BY STATE, FEDERAL AND LOCAL AGENCIES

The Draft LWRP was reviewed and accepted by the Village Board of Trustees and forwarded to the NYS Department of State (DOS). The DOS then initiated a 60-day review of the Draft LWRP pursuant to the NYS Waterfront Revitalization of Coastal and Inland Waterways Act. Digital copies of the LWRP were distributed by DOS to all potentially affected State and Federal agencies, Westchester County, adjacent waterfront municipalities and other interested organizations. Comments were reviewed by the Village and DOS, and resultant changes were made to the LWRP.

[To complete this section upon completion of DOS review process.]

C. PUBLIC OUTREACH

This Local Waterfront Revitalization Program (LWRP) was prepared in partnership with the New York State Department of State (DOS) and in accordance with regulations established by the DOS. The DOS initiated a review of the Draft LWRP by potentially affected State, Federal and local agencies to identify, and avoid, conflicts with existing projects, programs and policies.

In addition, the Village undertook efforts to gain public input and comment on the LWRP. The LWRP Advisory Committee held two public workshops (see Appendix for workshop summaries) and a public hearing on the Draft LWRP, and the Draft LWRP was made available on the Village's website.

D. LWRP PROCESS

In late 2014, the Village of Croton-on-Hudson retained BFJ Planning consultant to prepare an update to its 1992 LWRP. In early 2015, the Village appointed an LWRP Advisory Committee to guide the update process, consisting of the Mayor, the Village Manager, the Village Engineer, the Village's Administrative Coordinator and representatives of the Board of Trustees, the Planning Board and the Waterfront Advisory Committee,

The Advisory Committee met regularly throughout the LWRP update process, on January 30, March 3, April 8, May 15, June 19 and August 26, 2015. The Village also hosted two public workshops and a public hearing to solicit community feedback and present the Draft LWRP.

This LWRP update has been prepared by the Village's planning consultant, BFJ Planning, with technical assistance from the Advisory Committee and Village staff.

Revisions to the Draft LWRP were prepared and reviewed by the Advisory Committee based on comments by the DOS and the public. The Final LWRP was reviewed by the Village Board of Trustees for adoption.

The Final LWRP was adopted by the Village Board of Trustees.

APPENDIX A: RELEVANT PLANNING DOCUMENTS

Westchester County Greenway Compact Plan

Westchester County Department of Planning, June 2004

The Greenprint for a Sustainable Future is the Westchester County Greenway Compact Plan. Greenprint builds on the planning legacy in Westchester so as to assist the county, city, town and village governments in ensuring a sustainable future for years to come. The Plan provides the basis for participating municipalities to qualify for incentives granted by the New York State Legislation through the Hudson River Valley Greenway Act of 1991. The Plan follows the successful format utilized in Patterns for Westchester: the Land and the People, the County's long-range planning policy document, to create an approach to regional economic development that promotes tourism while incorporating natural, cultural and historic resource protection and increasing Hudson River access opportunities.

Croton Harmon Station Area Study

Village of Croton-on-Hudson (prepared by BFJ Planning), May 2005

The study described in this report explores the feasibility of establishing whether Transit Oriented District (TOD) is applicable for the Croton-Harmon station. The report examines the existing conditions and identifies the development constraints of the site, provides a brief assessment of market conditions to determine realistic uses for the property, and outlines general guidelines for any possible new development. The six-month study involved regular meetings with the Village of Croton-on-Hudson Comprehensive Plan Committee. Assistance was also provided by the Village Manager's Office and by the Village Engineer.

Croton Harmon Parking Facility Vehicular, Pedestrian and Bicycle Study

Village of Croton-on-Hudson (prepared by The RBA Group), July 2008

The *Croton Harmon Parking Facility Vehicular, Bicycle and Pedestrian Study* was conducted to examine vehicular, pedestrian, and bicycle operations in the vicinity of Croton- Harmon Train Station and to develop conceptual designs to improve the current conditions. Traffic analyses were conducted to evaluate existing and future traffic operations and to ensure the feasibility of recommended improvements. Traffic models were developed for: existing conditions based on 2008 data collection and field observations and future conditions (five years beyond existing) to identify relatively short-term traffic and pedestrian needs along the corridor.

Indian Brook-Croton Gorge Watershed Conservation Action Plan

Westchester County, January 2008

In the spring of 2003, the Westchester County Department of Planning received a grant from the New York State Department of Environmental Conservation Hudson River Estuary Program to work with the communities in the Croton Bay Watershed, which consists of the Croton Gorge and Indian Brook sub-watersheds, to prepare a Watershed Conservation Action Plan. The Indian Brook-Croton Gorge Steering Committee, an inter-municipal committee consisting of representatives from the Towns of Cortlandt, Ossining, and New Castle, the Villages of Ossining and Croton-on-Hudson and Westchester County, was created. The Westchester County Department of Planning provided technical and administrative assistance to the Steering Committee in carrying out its goals related to the creation of the plan. In order to develop a comprehensive watershed program for the Indian Brook-Croton Gorge Watershed (the watershed), each municipality, municipal representative and Westchester County had to agree to the same goals and objectives for the watershed. At the beginning of the planning process, five major goals for the plan were established relating to:

- Protecting and restoring the natural resources, most significantly the Croton River, Indian Brook Reservoir, existing wetlands and groundwater drinking sources
- Developing and implementing stormwater management practices that will improve water quality
- Promoting sustainable development through land use and environmental regulations
- Preserving and protecting fish, wildlife and significant habitat
- Educating the public

The plan details the existing conditions, or the state of the watershed, which includes information on the physical and natural resources, wildlife and habitat and land uses of the Indian Brook-Croton Gorge Watershed. Through analysis of the state of the watershed, recommendations were developed based on the above goals to improve the current water quality conditions and habitat found throughout the watershed. Implementation of the recommendations will require inter-municipal cooperation and coordination among the watershed municipalities.

Hudson River Trailway Plan

Westchester County Department of Planning, September 2003

The "Hudson River Trailway Plan: RiverWalk" evaluates opportunities for creating a functionally linked Hudson River waterfront for pedestrians and bicyclists through the development, enhancement and linking of trails, esplanades and boardwalks.

The Hudson River Trailway Plan: RiverWalk maps a preliminary route and identifies opportunities for developing a continuous trailway along the entire Hudson River shoreline in Westchester County, spanning 46.6 miles from the Town of Cortlandt border with Putnam County on the north to the City of Yonkers border with the City of New York on the south. Providing access to the Hudson River is a priority of the County of Westchester and the 14 riverfront communities, 13 of which comprise the Historic River Towns of Westchester (HRTW).

Parking Garage Feasibility Study Report

Village of Croton-on Hudson (prepared by Tim Haahs Associates), February 2011

In early 2010 the Village completed a major construction project (Recipient of the 2010 Ward House Award ASCE Lower Hudson Branch) to alleviate tidal flooding conditions that occurred periodically in approximately 5.3 acres in the southeast portion of the parking lot adjacent to the Croton Bay. Approximately 600 parking spaces in the area were subject to tidal flooding in this area. Due to the past flooding and the potential of increased demand for train station parking, the Village engaged Tim Haahs and Associates, Inc. (Tim Haahs) to perform a *Parking Garage Feasibility Study* to analyze the potential development of structured parking at Croton-Harmon Station.

The overall intent of the feasibility study is to create a parking master plan to explore options that would increase parking capacity to meet future growth, possibly free up portions of the lot for other uses, enhance the station environment and commuter experience by improving pedestrian, bicycle, and vehicular safety and traffic flow, and potentially serve as replacement parking should the flood repaired areas of the lot be impacted by tidal flooding in the future.

As part of the study, Tim Haahs and Associates performed a conceptual feasibility study for a proposed parking structure on the existing Croton-Harmon Station lot. The study includes site feasibility assessments for the development of additional parking either from surface parking at the DPW site or a new parking structure.

APPENDIX B: VILLAGE OF CROTON-ON-HUDSON HARBOR MANAGEMENT PLAN

This appendix contains the Village of Croton-on-Hudson Harbor Management Plan for the waterside area of the Village within the Waterfront Revitalization Area Boundary.

Introduction

In 1992, the NYS Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways, was amended to provide local governments with the clear authority to comprehensively manage activities in near shore areas within their LWRP boundary by developing comprehensive harbor management plans (HMPs) and local laws to implement these plans.

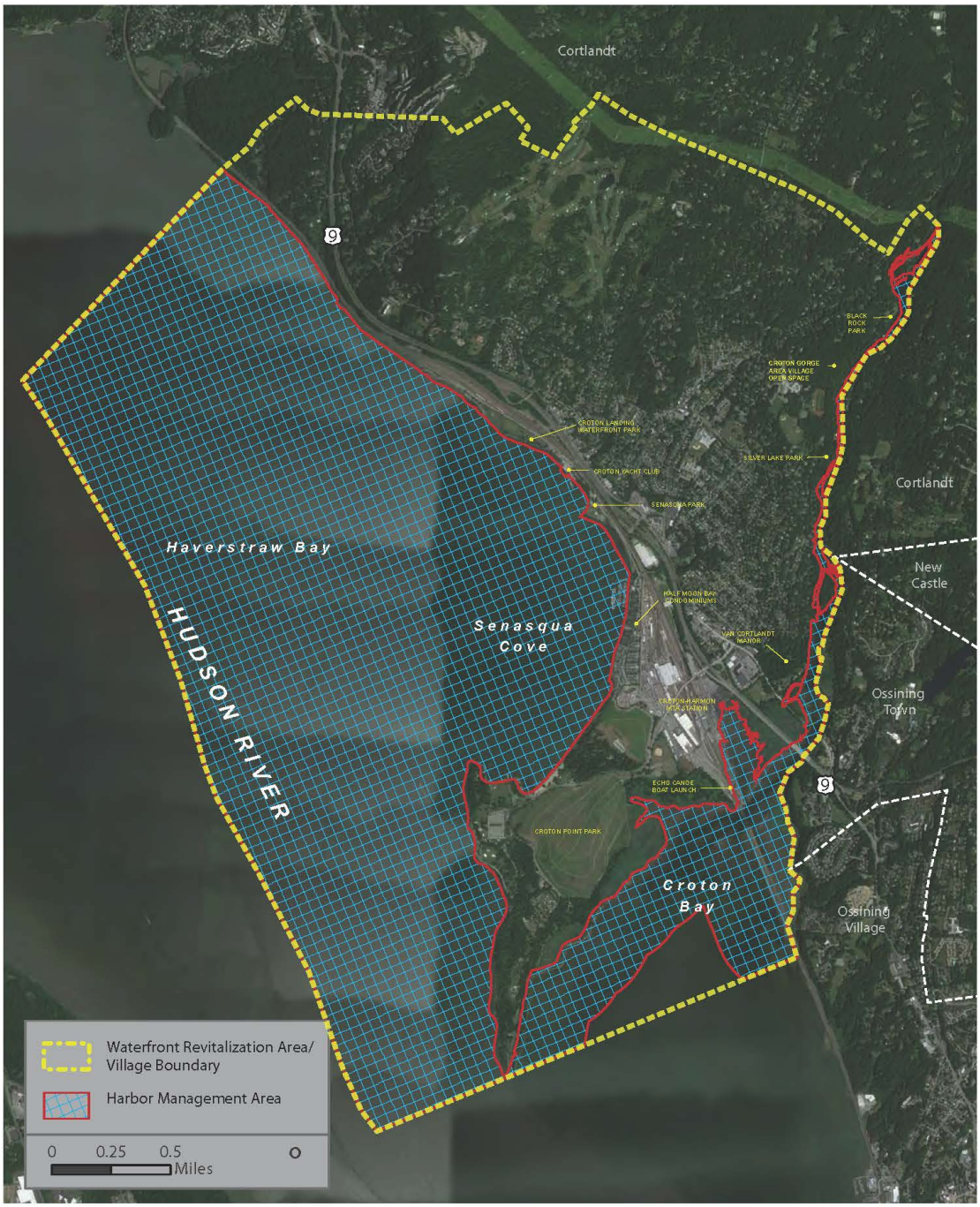
Pursuant to Section 922 of Article 42 of the Executive Law, the Village of Croton-on-Hudson prepared a Harbor Management Plan to manage potential conflicting uses in the portion of the Hudson River and the Croton River within the WRA. The HMP considers local and regional needs, the competing needs of recreational boating and fishing, habitat and other natural resource protection, water quality, public access, and recreation, open space and aesthetic values.

Pursuant to 19 NYCRR Part 603, the HMP boundary of the Waterfront Revitalization Area is provided in Figure 20. The boundary includes the Croton River and the Hudson River within areas that are 1,500 feet of the shoreline and within the municipal boundary.

Inventory and Analysis of Existing Conditions

Pursuant to 19 NYCRR Part 603.3 the contents of the HMP have been integrated into the LWRP document, primarily in Section II. Information on the required topics, issues, etc. can be found in the document as illustrated in Table B1.

Figure 20: Harbor Management Area



CROTON-ON-HUDSON LWRP FIGURE 20: HARBOR MANAGEMENT AREA

CROTON-ON-HUDSON, NY Source: Westchester GIS BFJ Planning

Table B1: Contents of the Village of Croton-on-Hudson Harbor Management Plan	
19 NYCRR 603.3 HMP Items Covered in LWRP	Section & Page
a) identification of the HMP boundary area;	Appendix B, Figure 20
b) an inventory and analysis of existing uses, features and conditions in this area;	Section II.B: Hudson Riverfront Planning Area (II-4 to II-7) Section II.B: Croton River Basin Planning Area (II-8 to II-11) Section II.D: Water Use Plan (II-15) Section II.F: Open Space, Parks and Recreational Resources (II-29) Section II.F: Waterfront Access (II-35) Section II.G: Underwater Land Ownership (II-36) Section II.J: Water Resources (II-49) Section II.K: Significant Fish and Wildlife Habitats (II-53)
c) identification and discussion of issues of local importance;	Section II.F: Waterfront Access (II-35 Section II.K: Significant Fish and Wildlife Habitats (II-53) Section II.K: Critical Environmental Areas (II-56) Section II.M: Water Supply (II-62)
d) identification and discussion of issues of regional importance;	Section II.K: Significant Fish and Wildlife Habitats (II-53) Section II.K: Critical Environmental Areas (II-56) Section II.M: Water Supply (II-62)
e) discussion of opportunities, long and short-term goals and objectives;	Section II.D: Water Use Plan (II-15 to II-27)
f) identification of conditions which operate as constraints on utilization of underwater lands and navigable waters by the public;	Section II.D: Water Use Plan (II-15 to II-27) Section II.D-c: Navigable Waters (II-19) Section II.F: Waterfront Access (II-35) Section II.G: Underwater Land Ownership (II-36)
g) discussion of water dependent uses;	S Section II.D: Water Use Plan (II-15 to II-27) Section II.F: Waterfront Access (II-35)
h) identification and discussion of economic, cultural and social considerations fundamental to responsible management of underwater lands and navigable waters;	Section II.D: Water Use Plan (II-15 to II-27)
i) a water use plan;	Section II.D: Water Use Plan (II-15 to II-27)

Table B1: Contents of the Village of Croton-on-Hudson Harbor Management Plan	
19 NYCRR 603.3 HMP Items Covered in LWRP	**Section & Page**
j) specification of policies concerning present and future use and management of such areas;	Section III.A: Policy 1 Section III.A: Policy 2 Section III.B: Policy 7 Section III.B: Policy 8 Section III.B: Policy 9 Section III.C: Policy 15 Section III.E: Policy 19 Section III.E: Policy 20 Section III.E: Policy 21 Section III.E: Policy 22 Section III.G: Policy 28 Section III.H: Policy 30 Section III.H: Policy 31 Section III.H: Policy 33 Section III.H: Policy 34 Section III.H: Policy 35 Section III.H: Policy 36 Section III.H: Policy 37 Section III.H: Policy 38 Section III.H: Policy 39
k) identification of capital projects necessary to implement the HMP;	Section IV.C: Project 1 (IV-4) Section IV.C: Project 3 (IV-7) Section IV.C: Project 4 Section IV.C: Project 5 Section IV.C: Project 6 (IV-10) Section IV.C: Project 8 (IV-11) Section IV.C: Project 9 (IV-13)
l) specification of existing and proposed techniques and authorities to implement the HMP; and	Section II.D: Water Use Plan (II-15 to II-27) Section V:A: Boats and Boating – Chapter 83 (V-3) Section V:K: Stormwater, Draining, Erosion and Water Control – Chapter 196 (V-7) Appendix B-1: Rules and Regulations for Use of the Water (B-11)
m) to the extent commensurate with the particular circumstance of the city, town or village, an HMP shall address the following considerations:	N/A
(1) conflict and competition for space among the uses and users of harbors, surface	N/A

Table B1: Contents of the Village of Croton-on-Hudson Harbor Management Plan	
19 NYCRR 603.3 HMP Items Covered in LWRP	**Section & Page**
waters and underwater lands;	
(2) regulation of the construction, size and location of wharves, docks, moorings, piers, jetties, platforms, breakwaters or other structures, whether temporary or permanent;	Section II.D: Water Use Plan (II-15 to II-27) Appendix B-1: Rules and Regulations for Use of the Water (B-11)
(3) regional needs for any of the various uses or users likely to be attracted to the particular qualities of the area; and	Section II.D: Water Use Plan (II-15 to II-27)
(4) where applicable:	
i. commercial shipping;	N/A
ii. recreational boating;	Section II.D: Water Use Plan (II-15 to II-27) Section III.A: Policy 1 Section III.A: Policy 2 Section III.A: Policy 19 Section III.A: Policy 20 Section III.A: Policy 21 Section III.A: Policy 22 Section IV.C: Project 4 Section IV.C: Project 6 Section IV.C: Project 7 Appendix B-1: Rules and Regulations for Use of the Water (B-11)
iii. commercial and recreational fishing and shellfishing;	Section II.D: Water Use Plan (II-15 to II-27) Section II.K: Significant Fish and Wildlife Habitats Section II.K: Lower Hudson River Estuary
iv. aquaculture and mariculture;	N/A
v. waste management;	Section II.M: Water and Sewer Infrastructure (II-62) Section III.A: Policy 5 Section III.A: Policy 8 Section III.A: Policy 32

Table B1: Contents of the Village of Croton-on-Hudson Harbor Management Plan	
19 NYCRR 603.3 HMP Items Covered in LWRP	Section & Page
	Section III.A: Policy 33 Section III.A: Policy 34 Section IV.C: Project 3
vi. mineral extraction;	Section III.A: Policy 15
vii. dredging;	Section III.A: Policy 35
viii. public access;	Section II.D: Water Use Plan (II-15 to II-27) Section II.F: Open Space, Parks and Recreational Resources (II-29) Section III.A: Policy 19 Section III.A: Policy 20 Section III.A: Policy 21 Section III.A: Policy 22 Section IV.C: Project 4 Section IV.C: Project 6 Section IV.C: Project 8 Section IV.C: Project 9
ix. recreation;	Section II.D: Water Use Plan (II-15 to II-27) Section II.F: Open Space, Parks and Recreational Resources (II-29) Section III.A: Policy 1 Section III.A: Policy 19 Section III.A: Policy 20 Section III.A: Policy 21 Section III.A: Policy 22 Section IV.C: Project 4 Section IV.C: Project 6 Section IV.C: Project 7 Section IV.C: Project 8 Section IV.C: Project 9
x. habitats and other natural resource protection;	Section II.K: Natural Resources and Habitats (II-54) Section III.A: Policy 7 Section III.A: Policy 8 Section III.A: Policy 9 Section III.A: Policy 11 Section III.A: Policy 12 Section III.A: Policy 13 Section III.A: Policy 14

Table B1: Contents of the Village of Croton-on-Hudson Harbor Management Plan	
19 NYCRR 603.3 HMP Items Covered in LWRP	**Section & Page**
	Section III.A: Policy 17 Section III.A: Policy 28 Section III.A: Policy 30 Section III.A: Policy 44 Section IV.C: Project 1 Section IV.C: Project 2 Section IV.C: Project 3 Section IV.C: Project 5
xi. water quality;	Section II.K: Natural Resources and Habitats (II-54) Section II.M: Water Supply (II-62) Section III.A: Policy 7 Section III.A: Policy 31 Section III.A: Policy 38 Section IV.C: Project 1 Section IV.C: Project 3
xii. open space;	Section II.F: Open Space, Parks and Recreational Resources (II-29)
xiii. aesthetic values;	Section II.L: Scenic Resources and Important Vistas (II-58) Section III.A: Policy 23 Section III.A: Policy 25
xiv. water dependent uses;	Section II.D: Water Use Plan (II-15 to II-27) Section III.A: Policy 1 Section III.A: Policy 21 Section III.A: Policy 2
xv. common law riparian or littoral rights; and	Section II.G: Underwater Land Ownership (II-36 to II-38)
xvi. public interests, including interest under the Public Trust Doctrine; and	Section II.G: Underwater Land Ownership (II-36 to II-38)
n) HMPs shall also consider other circumstances determined to be of significance by the Secretary of State, and HMPs may also consider those determined to be of significance by the city, town or village.	N/A

Appendix B-1: Rules and Regulations for Use of the Water

§ 83-1 ***Legislative intent.***

That portion of the Croton River lying wholly within the boundaries of the Village of Croton-on-Hudson northeast of what is commonly known as the "Railroad Bridge" is a narrow body of water of sensitive ecological balance, and the wildlife, the ecology and the peace and tranquility of the river and surrounding land, as well as the historic atmosphere created by the adjacent Van Cortlandt Manor Restoration, would all be jeopardized if the river were used improperly by power boats.

§ 83-2 ***Definitions.***

As used in this chapter, the following terms shall have the meanings indicated:

BOAT

Any motorboat, powerboat or other mechanically or electrically propelled boat, barge, vessel or other floating structure.

RIVER

That portion of the Croton River lying wholly within the boundaries of the Village of Croton-on-Hudson northeast of the Railroad Bridge.

§ 83-3 ***Speed limit.***

It shall be unlawful to operate any boat on the river at a speed in excess of five nautical miles per hour or to operate any boat on the river so as to make a wake.

§ 83-4 ***Mooring.***

It shall be unlawful to moor any boat in the river, except that any person owning property along the shore of the river may moor a boat at the shoreline of his own property.

§ 83-5 ***Discharge of waste.***

It shall be unlawful to discharge sewage, garbage or other waste material from any boat into the river.

APPENDIX C: GUIDELINES FOR NOTIFICATION AND REVIEW OF STATE AGENCY ACTIONS; AND PROCEDURAL GUIDELINES FOR COORDINATING CONSISTENCY REVIEW OF FEDERAL AGENCY ACTIONS

I. PURPOSES OF GUIDELINES

A. The Waterfront Revitalization of Coastal Areas and Inland Waterways Act (the Act) (Article 42 of the Executive Law) and the Department of State's regulations (19 NYCRR Part 600) require certain state agency actions identified by the Secretary of State to be consistent to the maximum extent practicable with the policies and purposes of approved Local Waterfront Revitalization Programs (LWRPs). These guidelines are intended to assist state agencies in meeting that statutory consistency obligation.

B. The Act also requires that state agencies provide timely notice to the affected local government whenever an identified action will occur within an area covered by an approved LWRP. These guidelines describe a process for complying with this notification requirement. They also provide procedures to assist local governments in carrying out their review responsibilities in a timely manner.

C. The New York State Secretary of State is required by the Act to confer with state agencies and local governments when notified by a local government that a proposed state agency action may conflict with the policies and purposes of its approved LWRP. These guidelines establish a procedure for resolving such conflicts.

II. DEFINITIONS

A. **Action** means:

1. A "Type 1" or "Unlisted" action as defined by the State Environmental Quality Review Act (SEQRA);
2. Occurring within the boundaries of an approved LWRP; and
3. Being taken pursuant to a state agency program or activity which has been identified by the Secretary of State as likely to affect the policies and purposes of the LWRP.

B. **Consistent to the maximum extent practicable** means that an action will not substantially hinder the achievement of any of the policies and purposes of an approved LWRP and, whenever practicable, will advance one or more of such policies. If an action will substantially hinder any of the policies or purposes of an approved LWRP, then the action must be one:

1. For which no reasonable alternatives exist that would avoid or overcome any substantial hindrance;
2. That will minimize all adverse effects on the policies or purposes of the LWRP to the maximum extent practicable; and
3. That will result in an overriding regional or statewide public benefit.

C. **Local Waterfront Revitalization Program** or **LWRP** means a program prepared and adopted by a local government and approved by the Secretary of State pursuant to Executive Law, Article 42; which program contains policies on the management of land, water and man-made resources, proposed land uses and specific projects that are essential to program implementation.

D. **Municipal chief executive officer** is the City Mayor, or City Manager in cities where an appointed city manager is the administrative head of the city; the Village Mayor; or the Town Supervisor. The NYS DOS Local Government Handbook provides more information about who would be considered the chief executive officer under various municipal executive structures.[25]

E. **Local program coordinator** of a municipality with an approved LWRP could be a designated person or a Committee responsible for the preliminary review of proposed actions within the waterfront area for consistency with an approved LWRP and consistency recommendations for the final determination of consistency that will be made by the local government.

III. NOTIFICATION PROCEDURE

A. When a state agency is considering an action as described in Section II, the state agency shall notify the affected local government.

B. Notification of a proposed action by a state agency:

1. Shall fully describe the nature and location of the action;
2. Shall be accomplished by use of existing state agency notification procedures, or through an alternative procedure agreed upon by the state agency and local government; and
3. Should be provided to the local official identified in the LWRP of the affected local government as early in the planning stages of the action as possible, but in any event at least 30 days prior to the agency's decision on the action. The timely filing of a copy of a completed Coastal/Waterfront

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[25] Excerpts from the NYS DOS Local Government Handbook 6th Edition (2009) related to chief executive officers:

IV. Villages: "The chief executive officer of most villages in New York State is the mayor." P. 70

Assessment Form with the municipal chief executive officer should be considered adequate notification of a proposed action.

C. If the proposed action will require the preparation of a draft environmental impact statement, the filing of this draft document with the municipal chief executive officer can serve as the state agency's notification to the affected local government.

IV. LOCAL GOVERNMENT REVIEW PROCEDURE

A. Upon receipt of notification from a state agency, the affected local government will be responsible for evaluating a proposed action against the policies and purposes of its approved LWRP. Upon request of the local program coordinator identified in the LWRP, the state agency should promptly provide the affected local government with whatever additional information is available which will assist the affected local government to evaluate the proposed action.

B. If the affected local government cannot identify any conflicts between the proposed action and the applicable policies and purposes of its approved LWRP, it should inform the state agency in writing of its finding. Upon receipt of the local government's finding, the state agency may proceed with its consideration of the proposed action in accordance with 19 NYCRR Part 600.

C. If the affected local government does not notify the state agency in writing of its finding within the established review period, the state agency may then presume that the proposed action does not conflict with the policies and purposes of the municipality's approved LWRP.

D. If the affected local government notifies the state agency in writing that the proposed action does conflict with the policies and/or purposes of its approved LWRP, the state agency shall not proceed with its consideration of, or decision on, the proposed action as long as the Resolution of Conflicts procedure established in Section V shall apply. The local government shall forward a copy of the identified conflicts to the Secretary of State at the time when the state agency is notified. In notifying the state agency, the local government shall identify the specific policies and purposes of the LWRP with which the proposed action conflicts.

V. RESOLUTION OF CONFLICTS

A. The following procedure applies whenever a local government has notified the Secretary of State and state agency that a proposed action conflicts with the policies and purposes of its approved LWRP:

1. Upon receipt of notification from a local government that a proposed action conflicts with its approved LWRP, the state agency should contact the local program coordinator to discuss the content of the identified

conflicts and the means for resolving them. A meeting of state agency and local government representatives may be necessary to discuss and resolve the identified conflicts. This discussion should take place within 30 days of the receipt of a conflict notification from the local government.

2. If the discussion between the local government and the state agency results in the resolution of the identified conflicts, then, within seven days of the discussion, the local government shall notify the state agency in writing, with a copy forwarded to the Secretary of State, that all of the identified conflicts have been resolved. The state agency can then proceed with its consideration of the proposed action in accordance with 19 NYCRR Part 600.

3. If the consultation between the local government and the state agency does not lead to the resolution of the identified conflicts, either party may request, in writing, the assistance of the Secretary of State to resolve any or all of the identified conflicts. This request must be received by the Secretary within 15 days following the discussion between the local government and the state agency. The party requesting the assistance of the Secretary of State shall forward a copy of their request to the other party.

4. Within 30 days following the receipt of a request for assistance, the Secretary, or a Department of State official or employee designated by the Secretary, will discuss the identified conflicts and circumstances preventing their resolution with appropriate representatives from the state agency and local government.

5. If agreement among all parties cannot be reached during this discussion, the Secretary shall, within 15 days, notify both parties of his/her findings and recommendations.

6. The state agency shall not proceed with its consideration of, or decision on, the proposed action as long as the foregoing Resolution of Conflicts procedures shall apply.

E. *PROCEDURAL GUIDELINES FOR COORDINATING NYS DEPARTMENT OF STATE (DOS) AND LWRP CONSISTENCY REVIEW OF FEDERAL AGENCY ACTIONS*

I. DIRECT FEDERAL AGENCY ACTIVITIES

A. After acknowledging the receipt of a consistency determination and supporting documentation from a federal agency, DOS will forward copies of the determination and other descriptive information on the proposed federal activities to the program coordinator and other interested parties.

B. This notification will indicate the date by which all comments and recommendations must be submitted to DOS and will identify the Department's principal reviewer for the proposed federal activity.

C. The review period will be about twenty-five (25) days. If comments and recommendations are not received by the date indicated in the notification, DOS will presume that the municipality has "no opinion" on the consistency of the proposed federal activity with the LWRP policies.

D. If DOS does not fully concur with and/or has any questions on the comments and recommendations submitted by the municipality, DOS will contact the municipality to discuss any differences of opinion or questions prior to agreeing or disagreeing with the federal agency's consistency determination on the proposed federal activity.

E. A copy of DOS' "concurrence" or "objection" letter to the federal agency will be forwarded to the local program coordinator.

II. ACTIVITIES REQUIRING FEDERAL LICENSES, PERMITS AND OTHER REGULATORY APPROVALS

A. DOS will acknowledge the receipt of an applicant's consistency certification and application materials. At that time, DOS will forward a copy of the submitted documentation to the local program coordinator and will identify the Department's principal reviewer for the proposed federal activity.

B. Within thirty (30) days of receiving such information, the local program coordinator will contact the principal reviewer for DOS to discuss: (a) the need to request additional information for review purposes; and (b) any possible problems pertaining to the consistency of a proposed federal activity with the LWRP policies.

C. When DOS and the local program coordinator agree that additional information is necessary, DOS will request the applicant to provide the information. A copy of this information will be provided to the local program coordinator upon receipt.

D. Within thirty (30) days of receiving the requested information or discussing possible problems of a proposed federal activity with the principal reviewer for DOS, whichever is later, the local program coordinator will notify DOS of the reasons why a proposed federal activity may be inconsistent or consistent with the LWRP policies.

E. After the notification, the local program coordinator will submit the municipality's written comments and recommendations on a proposed federal activity to DOS before or at the conclusion of the official public comment period. If such comments and recommendations are not forwarded to DOS by the end of the public comment period, DOS will presume that the municipality has "no opinion" on the consistency of the proposed federal activity with the LWRP policies.

F. If DOS does not fully concur with and/or has any questions on the comments and recommendations submitted by the municipality on a proposed federal activity, DOS will contact the local program coordinator to discuss any differences of opinion prior to issuing a letter of "concurrence" or "objection" to the applicant.

G. A copy of DOS' "concurrence" or "objection" letter to the applicant will be forwarded to the local program coordinator.

III. FEDERAL FINANCIAL ASSISTANCE TO STATE AND LOCAL GOVERNMENTS

A. Upon receiving notification of a proposed federal financial assistance, DOS will request information on the federal financial assistance from the applicant for consistency review purposes. As appropriate, DOS will also request the applicant to provide a copy of the application documentation to the local program coordinator. A copy of this letter will be forwarded to the local program coordinator and will serve as notification that the proposed federal financial assistance may be subject to review.

B. DOS will acknowledge the receipt of the requested information and provide a copy of this acknowledgement to the local program coordinator. DOS may, at this time, request the applicant to submit additional information for review purposes.

C. The review period will conclude thirty (30) days after the date on DOS' letter of acknowledgement or the receipt of requested additional information, whichever is later. The review period may be extended for major federal financial assistance.

D. The local program coordinator must submit the municipality's comments and recommendations on the proposed federal financial assistance to DOS within twenty days (or other time agreed to by DOS and the local program coordinator) from the start of the review period. If comments and

recommendations are not received within this period, DOS will presume that the municipality has "no opinion" on the consistency of the proposed federal financial assistance with the LWRP policies.

E. If DOS does not fully concur with and/or has any questions on the comments and recommendations submitted by the municipality, DOS will contact the local program coordinator to discuss any differences of opinion or questions prior to notifying the applicant of DOS' consistency decision.

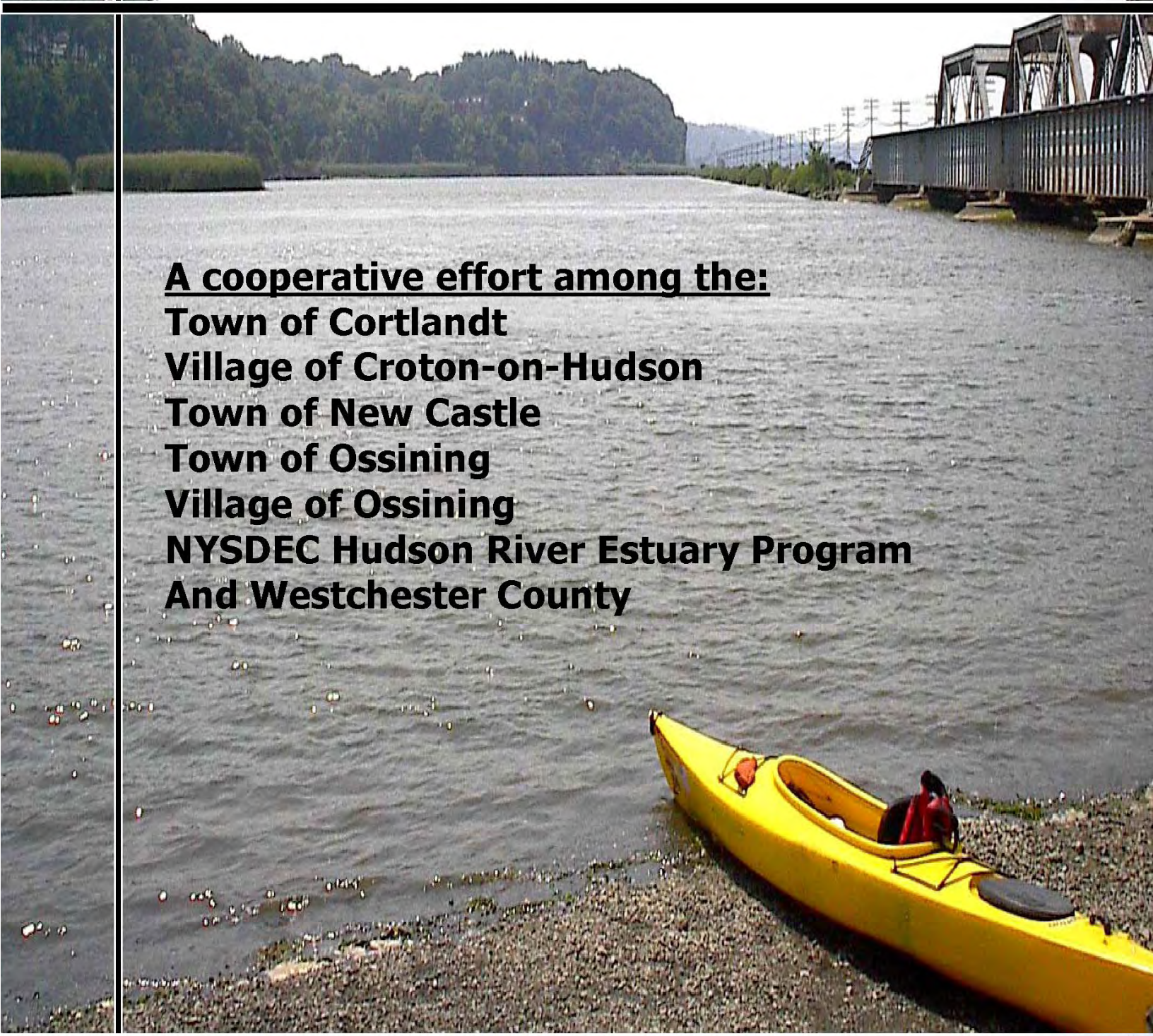
F. A copy of DOS' consistency decision letter to the applicant will be forwarded to the local program coordinator.

APPENDIX D: INDIAN BROOK-CROTON GORGE WATERSHED CONSERVATION ACTION PLAN

Hudson River Estuary Program

INDIAN BROOK-CROTON GORGE
WATERSHED CONSERVATION ACTION PLAN

Westchester County, New York



A cooperative effort among the:
Town of Cortlandt
Village of Croton-on-Hudson
Town of New Castle
Town of Ossining
Village of Ossining
NYSDEC Hudson River Estuary Program
And Westchester County

Westchestergov.com

Andrew J. Spano, County Executive
Board of Legislators

WESTCHESTER COUNTY
DEPARTMENT OF PLANNING
Gerard E. Mulligan, AICP, Commissioner

November 2007
REVISED JANUARY 2008

WESTCHESTER COUNTY EXECUTIVE
Andrew J. Spano

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Funding for the development of
the Indian Brook-Croton Gorge Watershed Conservation Action Plan provided by
the New York State Department of Environmental Conservation
Hudson River Estuary Program

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Executive Summary

In the spring of 2003, the Westchester County Department of Planning received a grant from the New York State Department of Environmental Conservation Hudson River Estuary Program to work with the communities in the Croton Bay Watershed, which consists of the Croton Gorge and Indian Brook subwatersheds, to prepare a Watershed Conservation Action Plan. The Indian Brook-Croton Gorge Steering Committee, an inter-municipal committee consisting of representatives from the Towns of Cortlandt, Ossining, and New Castle, the Villages of Ossining and Croton-on-Hudson and Westchester County, was created. The Westchester County Department of Planning provided technical and administrative assistance to the Steering Committee in carrying out its goals related to the creation of the plan.

In order to develop a comprehensive watershed program for the Indian Brook-Croton Gorge Watershed (the watershed), each municipality, municipal representative and Westchester County had to agree to the same goals and objectives for the watershed. At the beginning of the planning process, five major goals for the plan were established relating to:

- Protecting and restoring the natural resources, most significantly the Croton River, Indian Brook Reservoir, existing wetlands and groundwater drinking sources
- Developing and implementing stormwater management practices that will improve water quality
- Promoting sustainable development through land use and environmental regulations
- Preserving and protecting fish, wildlife and significant habitat
- Educating the public

The plan details the existing conditions, or the state of the watershed, which includes information on the physical and natural resources, wildlife and habitat and land uses of the Indian Brook-Croton Gorge Watershed. Through analysis of the state of the watershed, recommendations were developed based on the above goals to improve the current water quality conditions and habitat found throughout the watershed. Implementation of the recommendations will require inter-municipal cooperation and coordination among the watershed municipalities.

Findings

The Plan generated the following major findings:

Setting

- The Indian Brook-Croton Gorge Watershed serves as an important tributary to the Hudson River.

- A total of 33% of the watershed contains steep slopes, with 23% being slopes of 15-25% and 10% being slopes greater than 25%.
- Eleven percent of the soils in the watershed are considered hydric soils, which are formed under conditions of saturation, flooding or ponding for a period long enough to develop anaerobic (low oxygen) conditions. Hydric soils can be indicative of wetlands.
- Approximately 7% (239 acres) of the watershed is wetland. Of the 239 acres, 120 acres are New York State Department of Environmental Conservation (NYSDEC) designated wetlands.
- The Indian Brook-Croton Gorge Watershed consists of 45 acres of waterbodies. The Croton River is the main river system in the watershed, flowing approximately three miles from the New Croton Dam and discharging into the Croton Bay.
- The health of the three-mile section of the Croton River between the New Croton Reservoir and the tidal Hudson River is highly influenced by management of the New Croton Reservoir.
- The Indian Brook Reservoir serves as a drinking water source for the Town and Village of Ossining.
- The Indian Brook-Croton Gorge Watershed contains a highly prolific aquifer that supplies the water source for the Village of Croton-on-Hudson water supply system.
- The Indian Brook-Croton Gorge Watershed has a diversity of plants, animals and habitats, despite a relatively small land area that has significant development.
- The Croton Bay is one of the largest shallow bay areas in the lower Hudson that is sheltered from strong currents and wind. The mouth of the Croton River is documented as a migratory fish hub used as a resting, foraging and nursery area.
- The Croton River is an important biodiversity corridor. It provides an area for wildlife to move through the watershed with minimal barriers resulting from human development. Preserving land and preventing further development along the Croton River corridor may be beneficial to the river ecosystem.

Land Use

- The watershed is almost equally residential (46%) and open space and undeveloped (38%).
- A total of 3.8% of the land in the watershed is already impervious surface.
- Approximately 27% of the watershed can be classified as open space.
- Sixteen percent of the watershed is classified as non-residential.
- Approximately 11% of the watershed consists of parcels that are undeveloped and are considered vacant land. Undeveloped land has not been preserved as open space and is open for development and can be publicly or privately owned.

Recommendations

Recommendations were developed to improve water quality protection in the watershed. The implementation of the recommendations when taken together creates a coordinated, comprehensive approach to protect natural resources within the watershed.

All five watershed municipalities are subject to Phase II regulations administered by New York State through the SPDES Program. The requirements that the municipalities must fulfill in relation to Phase II, combined with the information revealed through the planning process, reveals that each municipality, individually or in partnership, can undertake specific activities to improve and protect water quality in the watershed.

1. Protect and Restore Natural Resources

- Conduct Streamwalks in the Croton Gorge Basin
- Remediate Identified Problem Areas in the Indian Brook Basin
- Protect Indian Brook Reservoir
- Protect Wetlands at the Local Level
- Restore Degraded Wetlands
- Ensure Proper Functioning of Septic Systems
- Monitor the Croton River
- Prevent Illegal Activities that Degrade Water Quality
- Retain Tree Cover
- Maintain and Restore Forested Stream Buffers

2. Develop and Implement Stormwater Management Practices that will Improve Water Quality

- Develop and Adopt Stormwater Infrastructure Data Management Standards
- Establish Illicit Discharge Connection Program
- Develop Stormwater Infrastructure Monitoring and Maintenance Programs
- Develop Snow and Ice Operational Plan
- Participate in Household Hazardous Waste Collection
- Pretreat Stormwater Outfall Discharges and Identify Retrofit Opportunities
- Restore Eroded Streambanks

3. Promote Sustainable Development Through Land Use and Environmental Regulations

- Institute Stormwater Controls for Development

- Establish Impervious Surface Limits and Alternatives
- Establish an Indian Brook Reservoir Overlay Zone
- Develop a Croton Aquifer Overlay Zone
- Update Comprehensive Plans
- Protect Open Space
- Adopt New or Amend Current Ordinances to Reflect Model Environmental Ordinances

4. Preserve and Protect Fish, Wildlife and Significant Habitat

- Prepare a Biodiversity Plan for the Watershed
- Investigate Croton River Flow Fluctuations

5. Educate the Public

- Require Board/Committee Member Stormwater Training
- Develop an Education and Training Program for Highway Personnel
- Develop and Participate in Community Natural Resource Education Programs

Implementation Through Intermunicipal Cooperation

Many municipalities will need to work together in order to implement the above recommendations. Each community supported the grant application that was awarded to the Westchester County Department of Planning (WCDP) to create an intermunicipal agreement (IMA) to coordinate the implementation of select recommendations found within the Plan. The WCDP will be working closely with the municipalities to develop this IMA.

Section 1.0 Introduction

In the spring of 2003, the Westchester County Department of Planning received a grant from the New York State Department of Environmental Conservation Hudson River Estuary Program to work with the communities in the Croton Bay Watershed, which consists of the Croton Gorge and Indian Brook subwatersheds, to prepare a Watershed Conservation Action Plan. The Indian Brook-Croton Gorge Steering Committee, an inter-municipal committee consisting of representatives from the Towns of Cortlandt, Ossining, and New Castle, the Villages of Ossining and Croton-on-Hudson and Westchester County, was created. The Westchester County Department of Planning provided technical and administrative assistance to the Steering Committee in carrying out its goals related to the creation of the plan.

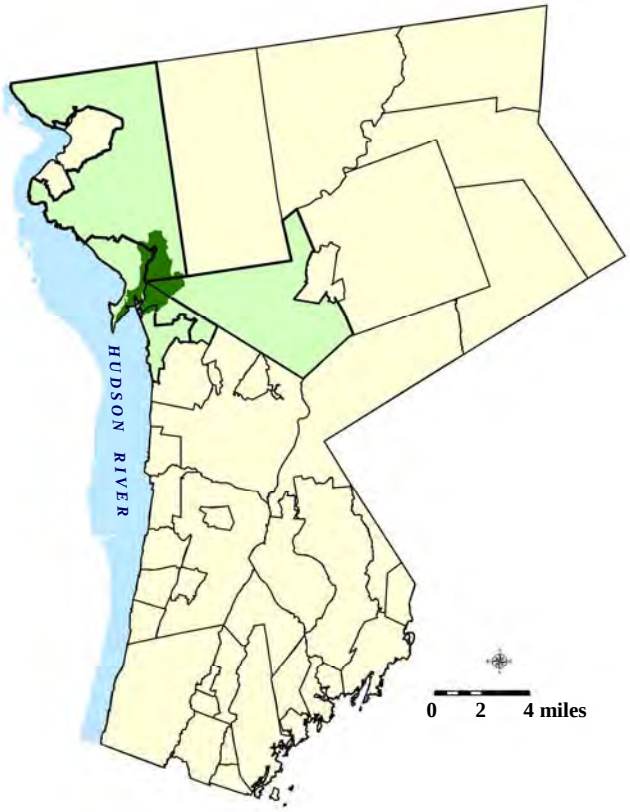


Figure 1-1. Location of Indian Brook-Croton Gorge Watershed in Westchester County

The Indian Brook-Croton Gorge Watershed Conservation Action Plan (the plan) is the first comprehensive watershed program developed along the Hudson River in Westchester County. Prior to the Indian Brook-Croton Gorge Watershed Conservation Action Plan, environmental initiatives along the Hudson River were limited or fragmented and were based on individual community/project needs and resources.

In order to develop a comprehensive watershed program for the Indian Brook-Croton Gorge Watershed (the watershed), each municipality, municipal representative and Westchester County had to agree to the same goals and objectives for the watershed. At the beginning of the planning process, five major goals for the plan were established relating to:

- Protecting and restoring the natural resources, most significantly the Croton River, Indian Brook Reservoir, existing wetlands and groundwater drinking water sources
- Developing and implementing stormwater management practices that will improve water quality
- Promoting sustainable development through land use and environmental regulations

Figure 1-2. Municipalities of the Indian Brook-Croton Gorge Watershed

What is an MS4?

According to 40 CFR 122.26(b)(8), "municipal separate storm sewer system means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains)."

- Preserving and protecting fish, wildlife and significant habitat
- Educating the public

All five watershed municipalities are MS4s and are subject to Phase II Stormwater regulations administered by New York State through the SPDES Program. The requirements that the municipalities must fulfill in relation to Phase II, combined with the information revealed through the planning process, reveals that each municipality, individually or in partnership, can undertake specific activities to improve and protect water quality in the watershed.

The plan details the existing conditions, or the state of the watershed, which includes information on the physical and natural resources, wildlife and habitat and land uses of the watershed. Through analysis of the state of the watershed, recommendations were developed based on the above goals to improve the current water quality conditions and habitat found throughout the watershed. Implementation of the recommendations will require inter-municipal cooperation and coordination among the watershed municipalities.

Figure 1-3. The Croton River, Croton-on-Hudson
The Croton River begins where the East and West Branches of the Croton River meet downstream from the Croton Falls Reservoir. Shortly downstream, the Croton River, along with its tributary, the Muscoot River, flow into the Muscoot Reservoir, and after flowing through that, it empties into the New Croton Reservoir. The water leaves the spillway at the Croton Dam, and finally empties into the Hudson River at Croton-on-Hudson, New York.

Section 2.0 Existing Conditions

The Croton River watershed (Figure 2-1) encompasses the Croton River, its tributaries and 12 reservoirs constructed by New York City. The perimeter of the watershed extends through Putnam County and into Dutchess County on the north, into Fairfield County, Connecticut on the east and to a basin divide line that extends east/west across Westchester County (just north of Chappaqua) on the south. The natural discharge point is to the west where the Croton River flows into the Hudson River at the Village of Croton-on-Hudson.

The study area for Indian Brook-Croton Gorge Watershed Conservation Action Plan, (the plan), is limited to the portion of the Croton River watershed within Westchester County that is downstream of the New Croton Dam. This portion is identified as the Indian Brook-Croton Gorge Watershed and serves as an important tributary to the Hudson River.

2.1 Physical Setting

The Indian Brook-Croton Gorge Watershed, (the watershed), encompasses approximately 3,400 acres (5.3 sq. mi.) within portions of the Towns of Cortlandt (2 sq. mi.), Ossining (0.90 sq. mi.) and New Castle (0.8 sq. mi.), and the Villages of Croton-on-Hudson (1.4 sq. mi.) and Ossining (0.16 sq. mi.). The watershed is made up of two subwatershed areas: Croton Gorge and Indian Brook, see Figure 2-2. The Croton Gorge Subwatershed totals 2,040 acres (3.2 sq. mi.) and is the larger of the two subwatersheds. It lies within of the Towns of Cortlandt, Ossining and New Castle, and the Villages of Ossining and Croton-on-Hudson. The Croton Gorge Subwatershed includes the Croton-on-Hudson drinking water aquifer and the Croton River, which begins at the New Croton Dam and terminates at the Croton Bay. The Indian Brook Subwatershed totals 1,369 acres (2.1 sq. mi.) and lies within the Towns of Cortlandt, Ossining and New Castle and the Village of Ossining. The Indian Brook Subwatershed includes the Indian Brook and the Indian Brook Reservoir, a drinking water source for the Town and Village of Ossining.

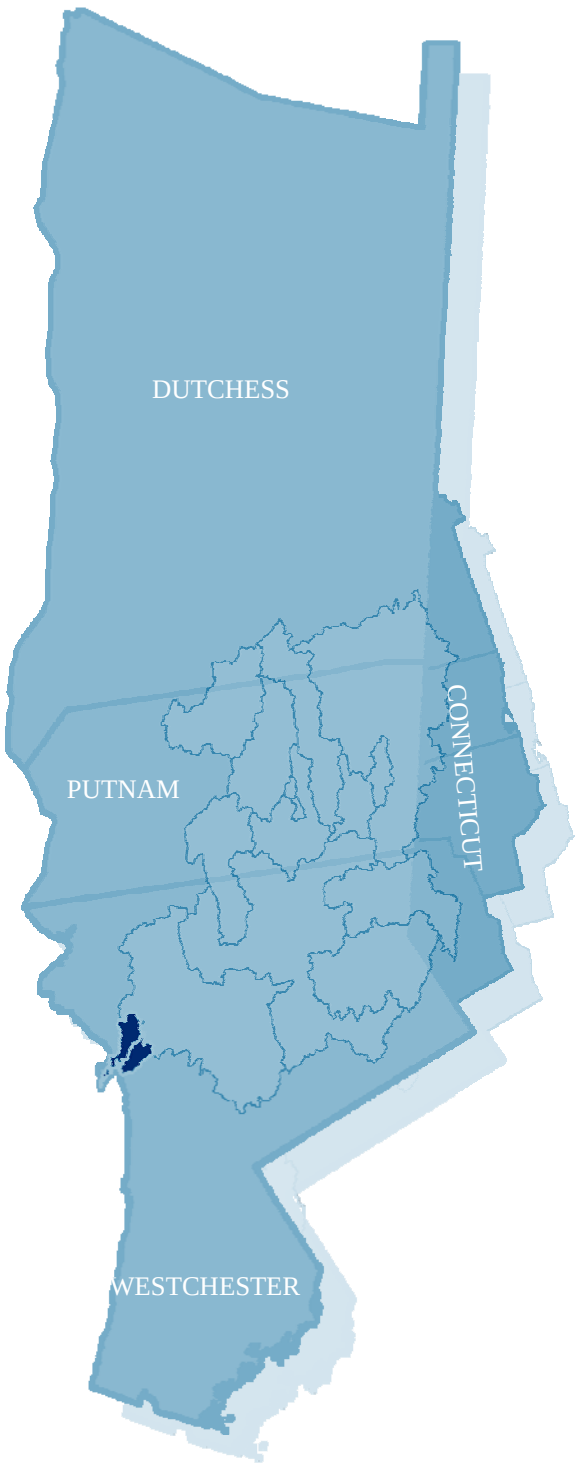
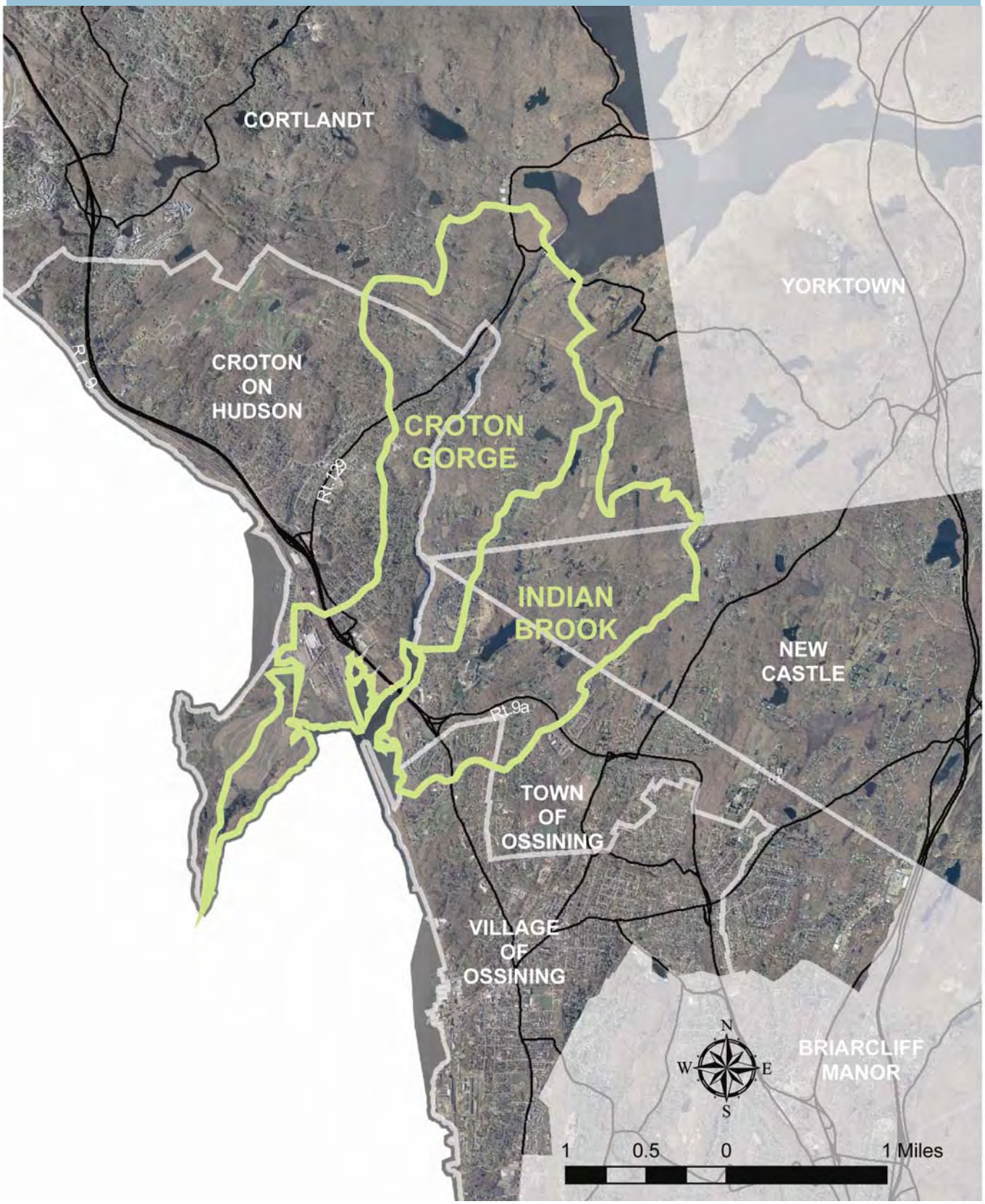


Figure 2-1. Croton River Watershed

Figure 2-2: Aerial photo and municipal boundaries of the Indian Brook-Croton Gorge Watershed



2.2 Bedrock and Surficial Geology

The topography and bedrock of the watershed are the result of complex geologic processes that began more than 1.3 billion years ago. Rocks found in Westchester County record at least three episodes of mountain building and two major periods of volcanic activity (McGuire, 1991). The bedrock found in the watershed is a result of millions of years of continual erosion of the original mountain chains by wind, water and glaciers so that only the base of these mountains now remains. The bedrock primarily consists of metamorphic (altered) rock of both sedimentary (sediments) and igneous (volcanic) origin. Croton Point Park is the only area of the watershed that does not consist of metamorphic rock. Instead, the composition consists of glacial and alluvial (river) deposits left by the most recent ice age and river system erosion.

The surficial geology in Westchester County is a result of glaciers advancing and receding from the area during the last ice age (~ 12,000 years ago) leaving various sized sediments and rocks, known as till, on top of the underlying bedrock. The surficial geology of the watershed consists mainly of glacial deposits including till and lacustrine (lake) silt and clay from proglacial lakes (lakes that existed during the last glacial period). Some areas in the watershed glacial deposits do not exist on the surface and only the underlying bedrock can be found.

The local geology of the watershed has played an important role in the economic development of the area. Inwood marble, which is found throughout Westchester County and in the watershed, was the largest source of quarried marble in the United States until about 1850. Prisoners at the Sing Sing Correctional Facility quarried the marble in the Village of Ossining. The quarry at Sing Sing also uncovered a number of interesting minerals in the marble, including graphite, pyrite, quartz, rutile, calcite, diopside (malacolite), dolomite and tremolite (McGuire, 1991).

Emery, which is a mixture of two minerals, corundum and magnetite, can be found in Cortlandt. It is an extremely hard substance and not very common in the United States. Emery was quarried in Cortlandt and one of the quarries was located near the watershed boundary on Mount Airy Road near the Village of Croton-on-Hudson (McGuire, 1991).

Clay was also excavated extensively at Croton Point Park where at one point in time there were at least five brick making factories. In addition, Croton Point was excavated for its sand and gravel to use in road building and other construction projects (McGuire, 1991).

2.3 Steep Slopes

The Indian Brook-Croton Gorge Watershed is located in the Hudson River Valley and includes the Croton River Valley, thus much of the watershed has steep slopes. Steep slopes develop in river valleys as a result of down cutting from rivers. Steep slopes in the watershed are also the result of glacier advancement and recession.

The definition of a steep slope for the purposes of the Indian Brook-Croton Gorge Watershed Conservation Action Plan includes any slope that is greater than 15% in grade. Figure 2-3 displays steep slopes located in the watershed that are between 15-25% and slopes that are greater than 25%. A total of 33% of the watershed contains steep slopes, with 23% being slopes of 15-25% and 10% being slopes greater than 25%. Unvegetated slopes have greater instability and much higher rates of erosion than vegetated slopes. The root systems of plants help maintain slope stability and reduce the amount of erosion that takes place on steep slopes. Therefore, it is very important to keep steep slopes as natural and as vegetated as possible.

2.4 Soils

Fifty-five soil types exist in the watershed. A majority of the soils found in the watershed were formed from glacial deposits. Most of the soils are loamy, which means that approximately 7-27% of the grain content is clay; 28-50% of the soil is silt and less than 52% of the grain content is sand. The soils found in the watershed are typically deep soils with a depth to bedrock of at least 6 feet and all tend to be acidic. Although the soils have similar parent material, the soils vary in permeability, depth to water table, drainage potential, runoff speed and hydrologic classification. Appendix A: Additional Resources contains a detailed map of the soils in the watershed, descriptions of the soil types, taxonomy and hydrologic classification.

Eleven percent of the soils in the watershed are considered hydric soils, which are formed under conditions of saturation, flooding or ponding for a period long enough to develop anaerobic (low oxygen) conditions. Hydric soils can be indicative of wetlands. Appendix A: Additional Resources also includes information on which soils are considered to be hydric.

2.5 Natural Resources

A. Wetlands

The Indian Brook-Croton Gorge Watershed contains both federal and state regulated tidal and freshwater wetlands. Approximately 7% (239 acres) of the watershed is wetland (refer to Figure 2-7). Of the 239 acres, 120 acres are New York State Department of Environmental Conservation (NYSDEC) designated wetlands, which are wetlands greater than 12.4 acres. NYSDEC recognizes that not all wetlands are of equal quality. In order to establish the different qualities of wetlands, the NYSDEC developed a four class regulatory system that designates a class to every NYSDEC wetland. Class I wetlands are considered to provide the most

Figure 2-3: Steep slopes in the Indian Brook-Croton Gorge Watershed

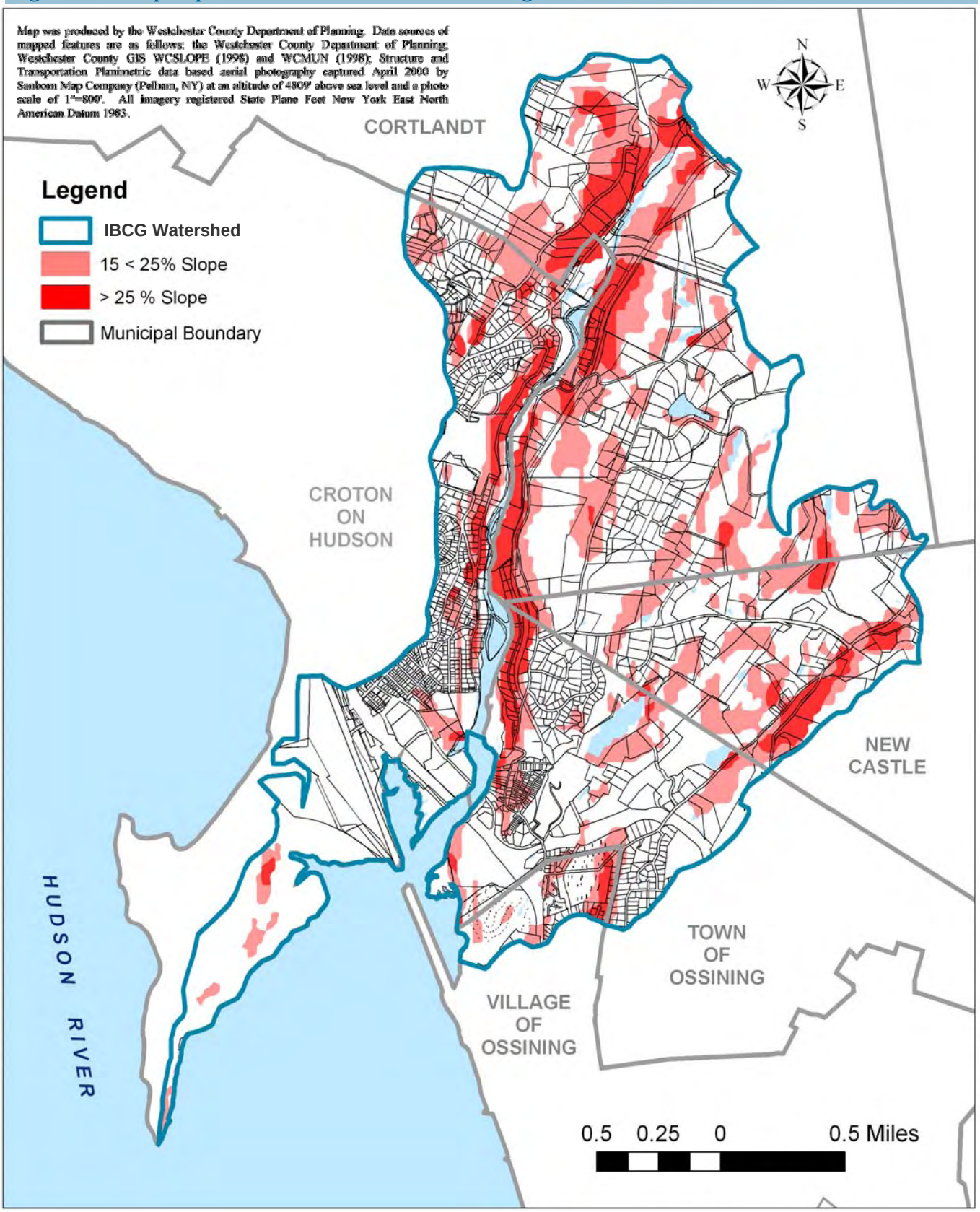


Figure 2-4. Westchester County's Croton Point Park, Croton-on-Hudson, NY

beneficial qualities in terms of ecological association, special features, hydrologic features and pollution control features. Class IV wetlands provide the least. There are 68 acres of Class I, 9 acres of Class II and 44 acres of Class III wetlands. All of the Class I and Class II designated wetlands are located in the tidal portions of the Croton Bay and the Croton River. The Class III wetland is the largest wetland in the watershed, known as the Glendale Wetland, located in the Town of New Castle. This wetland is currently designated as a nature preserve. Refer to Appendix A: Additional Resources for more information on wetlands.

Even though over 50% of the NYSDEC wetlands in the watershed are designated Class I, over the years they have become degraded due to invasive species. An invasive species is a plant that has an aggressive growth pattern that invades habitats and crowds out native species. Invasive species can also destroy biodiversity and wildlife food sources. Most of the tidal wetlands in the watershed are dominated by phragmites, a common reed, considered to be an invasive species. The table in Figure 2-5 lists the primary invasive wetland species found in New York State.

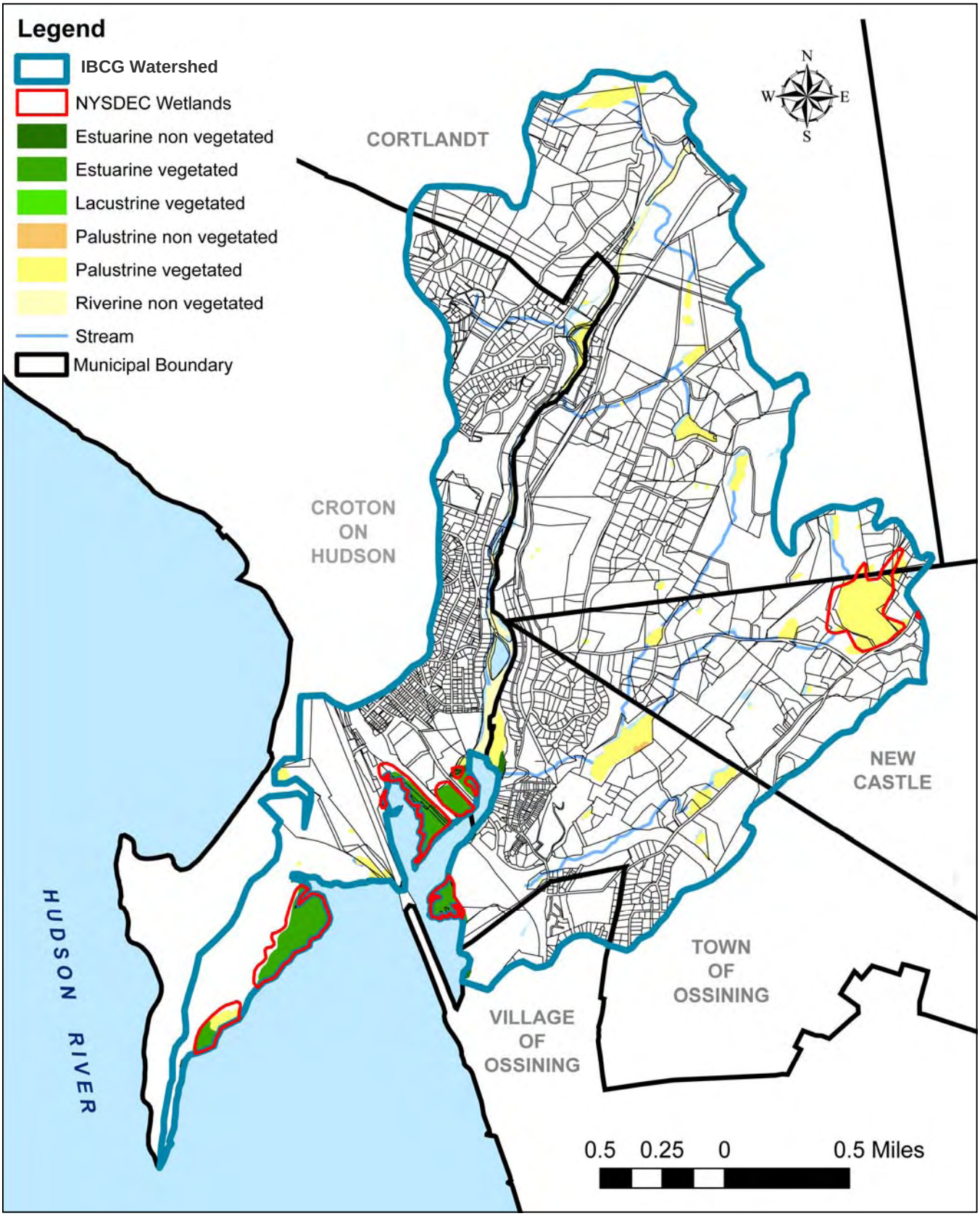
The watershed contains 73 acres of estuarine NWI wetlands, in addition to NYSDEC wetlands, that are located in the brackish tidal portions of the Croton Bay near Croton Point Park and the mouth of the Croton River. There are 128 acres of palustrine (marsh) wetlands that are found throughout the watershed. There are 38 acres of riverine wetlands; all but 2 acres are nonvegetated wetlands. Finally, the watershed contains 0.1 acres of lacustrine (lake) wetlands. Listed in Figure 2-9 are the different United States Army Corps National Wetland Inventory (NWI) wetlands that are found in the watershed.

Common Name	Latin Name
Common buckthorn	Rhamnus cathartica
Smooth buckthorn	Rhamnus frangula
Common reed	Phragmites australis
Curly pondweed	Potamogeton crispus
Eurasian water milfoil	Myriophyllum spicatum
Japanese knotweed	Polygonum cuspidatum
Japanese stilt grass	Microstegium vimineum
Multiflora rose	Rosa multiflora
Porcelain-berry	Ampelopsis brevipedunculata
Purple loosestrife	Lythrum salicaria
Water chestnut	Trapa natans

Figure 2-5. Table of common invasive plants found in New York State wetlands (Invasive Plant Council of New York)

Figure 2-6. Glendale Wetland, New Castle, NY

Figure 2-7: Wetlands in the Indian Brook-Croton Gorge Watershed



According to the NYSDEC wetland regulations, each municipality has the ability to designate wetlands of local significance. Eleven percent of the watershed contains hydric soils, a wetland indicator, and only 7% of the watershed is designated as wetland. There may be other wetlands not identified by the federal or state government that could become designated as wetlands of local significance. No municipality in the watershed to date has designated wetlands of local significance. For more information on wetlands, wetland regulations and regulatory definitions of wetlands refer to Appendix A: Additional Resources.

Figure 2-8. Phragmites dominated tidal wetlands of the Croton Bay

B. Significant Waterbodies

The Indian Brook-Croton Gorge Watershed consists of 45 acres of waterbodies (refer to Figure 2-10). The Croton River (Figure 2-11) is the main river system in the watershed, flowing approximately three miles from the New Croton Dam and discharging into the Croton Bay. Five tributaries feed into the Croton River and the most significant is the Indian Brook. The Indian Brook Reservoir, a drinking water source for the Town and Village of Ossining, is located in the watershed. Numerous ponds serve as water sources for Croton River tributaries. The Croton River empties into the Hudson River. The Hudson River runs 315 miles from its source in the Adirondacks to the New York Harbor. The lower reaches of the Hudson River, from Newburgh to the New York Harbor, are tidally influenced and contain brackish water. The Croton Bay is part of the tidally influenced portion of the Hudson River. The tidal influence continues up the Croton River past Paradise Island.

The State of New York adopted regulations (6 NYCRR §703) that identify stream use classifications and water quality standards. The standards legally set the maximum amount of pollutants allowed in a waterbody and still be considered clean. The maximum amount of pollution varies depending on the assigned stream use classification. Each stream is assigned the highest use classification that it could reach as determined by the State of New York.

The waterbodies in the watershed have different NYSDEC Surface Water Classifications. Figure 2-12 lists the surface waterbodies and their respective surface water classifications. In the watershed, the Class A surface waterbodies are all associated with the drinking water sources of either the Croton aquifer or the Indian Brook Reservoir. Class B was designated to all of the lakes and ponds not used as drinking water sources. Class C waters are tributaries of the Croton River or the Indian Brook. The tidal portion of the Croton River is designated as Class SC. Refer to Appendix A: Additional Resources for more information about NYSDEC Surface Water Classifications.

Figure 2-9. Table of U. S. Army Corps NWI of the Indian Brook-Croton Gorge Watershed

Wetland Type	Acres	Percent of Total Wetlands
Estuarine non vegetated	8	3%
Estuarine vegetated	65	27%
Palustrine non vegetated	1	<1%
Palustrine vegetated	127	53%
Riverine vegetated	2	<1%
Riverine non vegetated	36	15%
Lacustrine vegetated	<1	<1%
Total	**239**	**100%**

Croton Gorge Waterbodies

The Croton River runs three miles from the New Croton Dam and discharges into the Croton Bay on the Hudson River. Prior to the 1800's, mills were built along the riverfront and the Croton River was used as a harbor. In the early 1800's, the Croton River was dammed to create the Croton Reservoir, a drinking water source for New York City. In 1906, the existing New Croton Dam was completed. The Croton River below the dam shrunk in size, resulting in the river becoming

Figure 2-10: Waterbodies in the Indian Brook-Croton Gorge Watershed

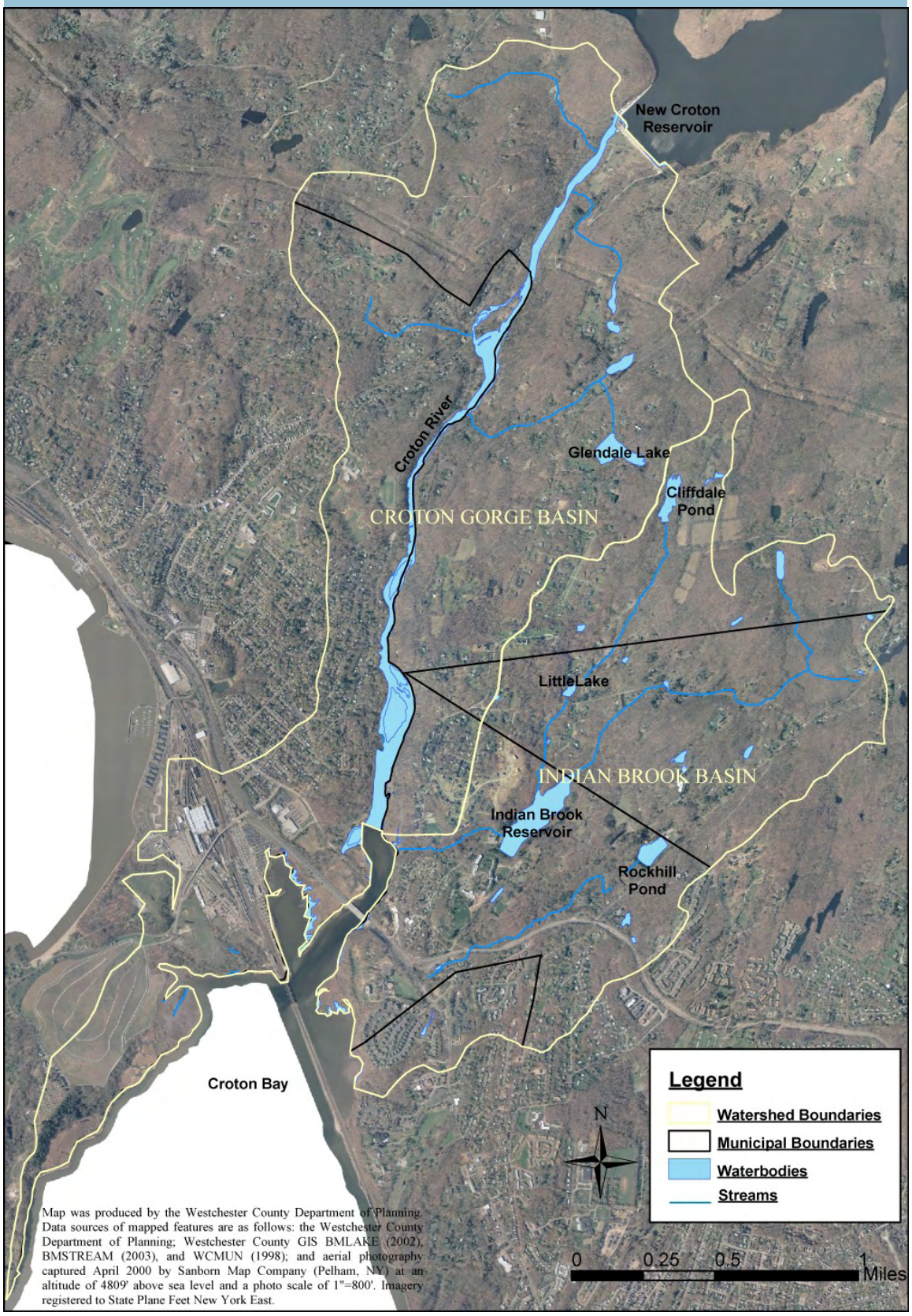
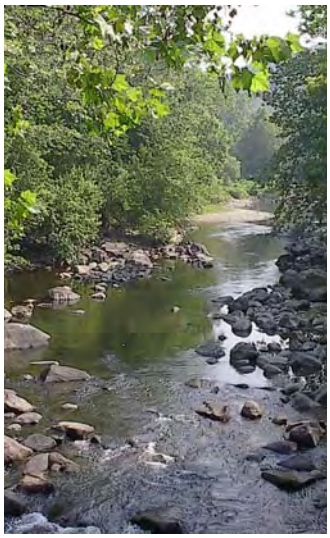


Figure 2-11. Croton River



unable to support the industries along its riverfront. Today, the Croton River primarily supports wildlife and recreational uses. Portions of the Croton River are stocked with approximately 900 rainbow trout yearlings, 100 two year old (12-15 inches) brown trout and 200 brown trout yearlings each March and April by the NYS DEC.

The Croton River receives its water flow from New Croton Reservoir water releases, dam spillway overflow, sheet flow and storm drain outfalls. New Croton dam water releases are regulated through NYC DEP's water withdrawal permit. The DEP is required to follow a specific release schedule that was enacted to maintain certain baseflow conditions in the river (see Appendix A: Additional Resources for the detailed release schedule).

Because of the NYC water supply diversion, the Croton River has much lower flow per square mile of watershed than other natural rivers. Up to 500 million gallons of water a day can be transferred out of basin from the Croton River watershed to NYC DEP drinking water customers. Maintaining river flows for wildlife and wildlife habitats downstream from water supply reservoirs is inherently complicated and requires a difficult balance between human demands and sustainable flows to conserve the ecological health of a river. The Croton River below New Croton Reservoir is no exception. During certain years, and during certain months of those years, the flow rate in the Croton River (below the reservoir) is only a fraction of what naturally would be observed under pre-dam conditions. The health of the three-mile section of the Croton River between the New Croton Reservoir and the tidal Hudson River is highly influenced by management of the New Croton Reservoir.

Figure 2-12. Table of Waterbodies and New York State Surface Water Classifications

Waterbody	NYS DEC Classification
Croton River	
New Croton Dam to Glendale Lake Tributary	A
Glendale Lake Tributary to Tidal Portion	B
Tidal Portion	SC
Indian Brook	
Indian Brook from Source to Reservoir	C
Indian Brook Reservoir	A
Indian Brook from Reservoir to Croton River	A
Other Waterbodies	
Other Croton River Tributaries	C
Cliffdale Pond	B
Glendale Lake	B
Little Lake	B
Rockhill Pond	B
Small Pond near Glendale Lake	B

Like all dammed rivers that are located in developed areas, the Croton River at times experiences fluctuations in its stream flow. Some fluctuations are normal for a river, but extreme fluctuations can cause increased erosion of the stream banks, excessive silting and drastic temperature changes. These severe changes can cause damage to fish and in-stream wildlife habitats. The current dam water release schedule can sometimes lead to highly variable fluctuations in the water temperatures. Water temperature can increase to above the maximum daily temperature for brown trout and rainbow trout. Aquatic ecosystems are sensitive to flow changes and fluctuations. An individual high, low or extreme flow event can influence the aquatic ecosystem of a river.

Data documenting ecological impacts of the New Croton

Reservoir on the Croton River are sparse. The information available on the dam release and the effects of sheet flow and storm drain discharges on Croton River baseflow is limited. However, the available data does demonstrate that the Croton River does experience fluctuations that could adversely affect the River's ecosystem. As a result, additional studies are needed to determine how flow changes actually affect wildlife in the Croton River corridor. The current flow management regime needs to be optimized to better support ecological processes downstream while still maintaining water supply needs. For more information on the New Croton Dam release please see Appendix A: Additional Resources.

Indian Brook Waterbodies

The Streamwalk Program was developed by the Natural Resources Conservation Service (NRCS) to educate citizens about streams in their communities and provide them with the tools to assess the health of these streams. In 2002, a Streamwalk was conducted by the residents of the Town of Ossining in the Indian Brook subwatershed. All sections of ponds, lakes, wetlands and streams in the subwatershed were included in the stream assessment surveys, which provided information regarding potential water quality and habitat concerns. The segment survey assessment forms were designed to act only as a preliminary identification tool to pinpoint those areas needing more in-depth investigation.

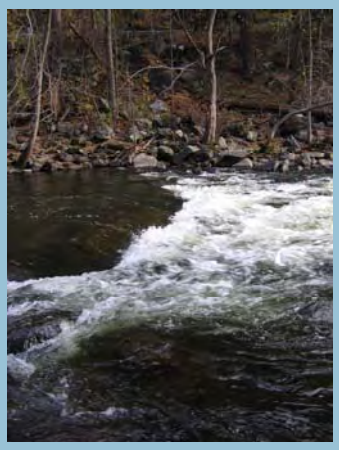
Overall, according to streamwalk surveys, the Indian Brook subwatershed contains

Croton Reservoir Release Schedule

Although flows in the Croton River can be naturally low due to climate and seasonal conditions, NYC DEP is required to maintain certain baseflow conditions in the River as part of their NYS DEC water withdrawal permit.

This New Croton Reservoir release schedule was originally designed to support seasonal use by anadromous fish species moving up the Croton River from the Hudson River Estuary and Atlantic Ocean and a stocked put and take trout fishery. The schedule can sometimes lead to fluctuations in water temperatures. More research is needed to determine how these fluctuations affect wildlife in the Croton River corridor.

For more detailed information about the release regulations, please see report entitled "A Preliminary Assessment of Croton River Hydrologic Alterations Below New Croton Reservoir" located in Appendix A: Additional Resources.



The Croton River

fair to good water quality ratings. Poor ratings were noted in the following areas:

- Barriers to Fish Movement,
- In-stream Fish Cover, and
- Pools.

Poor ratings for these parameters are typical ratings for streams that have an average depth of less than one foot. A majority of the streams in the Indian Brook Subwatershed had a stream depth of less than one foot when they were assessed. Even though the Indian Brook Subwatershed is a fairly healthy watershed, the prominent areas of concern listed as part of the Streamwalk assessment include stream bank erosion and runoff of polluted stormwater from roadways. Excessive erosion can cause increased turbidity and silting of the reservoir, streams and other ponds. Sections that are receiving runoff from roadways will have poorer water quality as a result of stormwater discharge pollutants such as nutrients, metals, sediments and petroleum products. For more details on the individual sections that were assessed as part of the Indian Brook Streamwalk please see Appendix A: Additional Resources.

The Indian Brook Reservoir (Figure 2-13) serves as a drinking water source for the Town and Village of Ossining. In 2006, the Indian Brook Plant pumped 504.6 million gallons of water for the year. The Village owned reservoir had approximately 100 million gallon capacity. The Indian Brook Reservoir is surrounded by forest. Three inlet streams to the Reservoir and one outlet stream exist and vary between 4-10 feet wide and vary between 3-8 inches deep.

Figure 2-13. Indian Brook Reservoir, Ossining, NY

The overall water quality rating based on the Indian Brook Streamwalk for the Reservoir was good. The noted areas of concern for the Reservoir included streams that were flowing directly into it. Streambank erosion was identified along the northern inlet stream. This erosion can contribute to increased turbidity and silting of the stream and the Reservoir. The eastern inlet stream of the Reservoir was reported to have poor canopy cover, which can affect the habitat quality for stream organisms. It was also noted to exhibit poor insect and invertebrate habitat, which can affect the viability of the stream ecosystem.

Portions of the Indian Brook that run parallel to Glendale Road and eventually discharge into the Reservoir might contribute stormwater pollutants to the Reservoir. Runoff discharges into the stream during storm events through outfalls or sheet flow. Two drainage pipes that discharge untreated stormwater directly into the stream were identified along the Glendale Road segment. The first discharge pipe drains runoff from Glendale Road and the second collects runoff from surrounding residences. Other segments of the Indian Brook are located in private backyards that can also receive stormwater runoff and pollutants associated with landscape management activities.

C. Groundwater

The Indian Brook-Croton Gorge Watershed contains a highly prolific aquifer that supplies the water source for the Village of Croton-on-Hudson water supply system. The natural groundwater that flows through the aquifer runs parallel to and in the same direction of flow as the Croton River. According to a 2004 report by the Chazen Companies, groundwater near the well fields is drawn towards the wells under pumping conditions. In non-pumping conditions the water table of the well fields is, generally, in equilibrium with the elevation of the river. Recharge to this system comes from a number of sources including precipitation, surface flow from the Croton River and groundwater flow from upland overburden and bedrock formations.

The extent to which the Croton River influences the water located in the aquifer is not completely known. As indicated by the 2004 Chazen Companies report, when the well fields were investigated according to NYSDOH guidance document PWS-42 (Public Water Supply 42) protocols there was no evidence that the wells should be designated as Ground Water Under the Direct Influence (GWUDI). GWUDI is a federal regulatory term that specifically refers to groundwater sources where conditions are such that pathogens are proven or have a high potential to travel from nearby surface waters into the groundwater source. The EPA left it up to the states to develop programs to make the determination of whether or not a source is GWUDI. With respect to the Croton-on-Hudson aquifer, the 2004 Chazen Companies report acknowledges that the zone of contribution from each well does include the Croton River.

Recreation in the Watershed

There are many recreational opportunities available at village, county and state parks throughout the Croton River corridor. Fishing and boating are permitted at Croton Point Park in Croton-on-Hudson. Important hiking trails include the Old Croton Aqueduct Trail and Briarcliff-Peekskill Trailway.

To find out more information about these recreational opportunities, go to the following websites:

westchestergov.com

village.croton-on-hudson.ny.us

www.dec.ny.gov

Figure 2-14. The Croton River

The Westchester County Health Department and New York State BPWSP reviewed the GWUDI report prepared by Chazen Companies and concluded that the Croton-on-Hudson wellfield is not under the direct influence of surface water. However, the Village of Croton-on-Hudson considers the Croton River a very important part of the village water supply and will endeavor to protect its water quality. Both New Castle and Cortlandt attempt to provide groundwater quality protection in the watershed through overlay protection zones, but the current provisions do not provide adequate protection for groundwater drinking water sources.

Some of the residents in the Towns of New Castle and Cortlandt have private drinking water wells. Currently no government oversight regarding monitoring water quality of private drinking water wells exists. It is the homeowner's responsibility to monitor his/her well water.

2.6 Fish, Wildlife and Significant Habitat

The Indian Brook-Croton Gorge Watershed has a diversity of plants, animals and habitats, despite a relatively small land area that has significant development. The diversity of plants, animals and habitats (biodiversity), provides many benefits to the surrounding watershed. Natural areas are important because they provide recreational opportunities, enhance the quality of life and contribute to keeping water clean. Whether public or private, natural areas help define community identity by connecting residents to the natural landscape in which they live. Open space, pedestrian and bicycle trailways and native plant gardens are just some of the ways to connect residential areas to the surrounding natural environment. The watershed provides many recreational opportunities including hiking, boating, bird-watching, fishing and outdoor photography.

Providing habitats for biodiversity helps to preserve good water quality while providing a community connection to nature. Wetlands, stream corridors and forests all work together to clean, replenish and store water and poorly planned development can displace habitats. Suburban and urban sprawl threaten habitats on both developed and conserved lands. Poorly planned development can disrupt groundwater flow, spread invasive species and cut off essential wildlife corridors, adding more stress to already fragile ecosystems. As healthy habitats are lost, the many benefits that natural ecosystems provide may be lost as well. It is possible, however, to sustain a healthy economy and environment if community growth is prepared with nature in mind.

Croton Bay, River and Surroundings

The tidally influenced Croton Bay and River are important aquatic habitats. The bay is one of the largest shallow bay areas in the lower Hudson that is sheltered from strong currents and wind. The mouth of the Croton River is documented as a migratory fish hub used as a resting, foraging and nursery area. Currently, portions of the river are stocked each year by the NYS DEC with trout. The federally en-

dangered shortnose sturgeon has been found to use the Croton River. The NYS-DEC Hudson River Estuary Program has noted that spawning use of the Croton River by blueback herring and alewife fish species could potentially increase if minimum flow requirements were established for the Croton River.

The Croton Bay has a productive year-round habitat for resident warm-water fish, such as largemouth bass, brown bullhead, carp and panfish. It contains 120 acres of submerged aquatic vegetation (SAV) beds full of native water celery. SAV is critical to the aquatic ecosystem of the estuary, providing habitat and food for larval and adult fish, waterfowl and invertebrate species.

In New York, brackish tidal wetlands and swamps are found only in the Hudson River north of the Tappan Zee Bridge. They are a prominent shoreline feature of the mouth of the Croton River and the Croton Bay, covering nearly 100 acres. More than 90 of those acres of tidally influenced wetlands are found on the Bay's shoreline but are dominated by invasive vegetation, such as the Common Reed (Phragmites). The productive aquatic habitat of the Croton Bay is important for the migrating osprey, which is a threatened species. Eight acres of wooded swamp are found in higher areas. Trees found in the wooded swamp are primarily locust and willow, with some sycamore, ash and maple. The understory of the swamp is dominated by invasive species such as catbriar, honeysuckle, grape and false bamboo.

Figure 2-15. Great Blue Heron, (above), Pickerel frog (below) source: U.S. Fish and Wildlife Service

The tidal wetlands provide an ideal habitat for several species of invertebrates, amphibians, reptiles, fish, birds, and mammals. The salinity in the bay water and the abundance of marshes make it an ideal habitat for striped bass, perch, American eels and blue claw crabs. Croton Point Park is home to raccoons, opossums and muskrats that frequent the shoreline foraging for food. Diamondback terrapins, a species not commonly found in the Hudson Valley, have been observed in the Park. The short-eared owl (state endangered species) and Northern Harrier (state threatened species) are known to use the Park as a wintering area. Bald Eagles, another endangered species, roost at Croton Point and have been seen on the mainland in the Town and Village of Ossining. A variety of waterfowl, such as great blue herons (Figure 2-15) and cormorants also make the tidal wetlands their home at different times of the year.

Croton-to-Highlands Biodiversity Plan

The Croton-to-Highlands Biodiversity Plan was a result of a collaborative planning effort between the Towns of Yorktown, New Castle, Cortlandt and Putnam Valley, the Wildlife Conservation Society's Metropolitan Conservation Alliance (WCS/MCA), NYSDEC Hudson River Estuary Program and the Westchester Community Foundation. The eastern portions of the Indian Brook-Croton Gorge Watershed (in Cortlandt and New Castle) were described in the biodiversity plan as high quality habitats for reptiles, amphibians and breeding birds. These wildlife

corridors are displayed in Figure 2-16 (listed as Biodiversity Hubs 11-13).

The *Croton-to-Highlands Biodiversity Plan* found that the watershed is home to many different species of amphibians, reptiles and breeding birds. Significant species identified include the Eastern box turtle, Northern copperhead, Worm-eating warbler, Prairie warbler, Kentucky warbler, Canada warbler and Wood thrush. Figure 2-17 is an inventory of the common and Latin names of focal species identified in the Indian Brook-Croton Gorge watershed portion of the *Croton-to-Highlands Biodiversity Plan*. Figure 2-17 also lists if the species can be found under the NYSDEC or Westchester County Endangered Species Programs, or the Audubon Watch List. More species may exist in the watershed than those listed in Figure 2-17 but they have not been identified in the Biodiversity Plan or they may be located in areas outside of the Plan's study area.

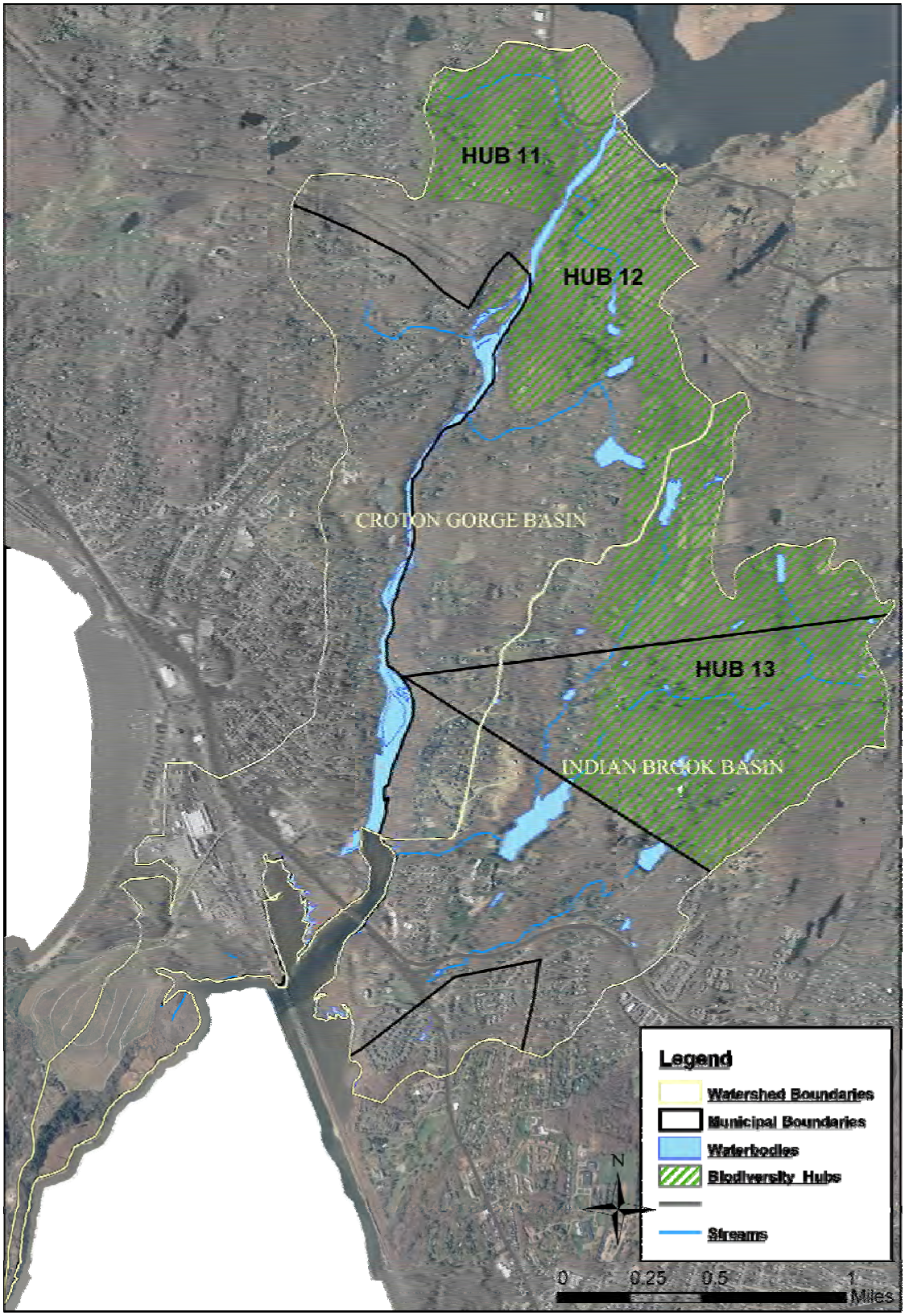
Outside the Croton River and the Bay, habitat in Croton-on-Hudson and Ossining has not been well studied. However, one area of significant wildlife habitat in the Plan ended abruptly at the municipal boundary between the Towns of New Castle and Ossining and it appears that the corridor may continue into the Town of Ossining.

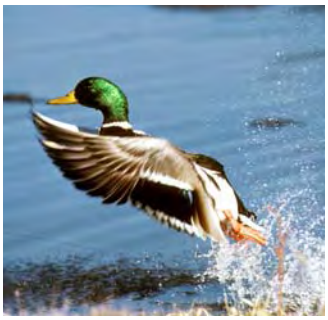
The Croton River is an important biodiversity corridor, even though it is not discussed in the *Croton-to-Highlands Biodiversity Plan*. The river runs through the Town of Cortlandt, the Village of Croton-on-Hudson and along the northern border of the Town of Ossining. It provides an area for wildlife to move through the watershed with minimal barriers resulting from human development. As noted earlier, the Croton River is also home to many fish species including the endangered shortnose sturgeon. The land adjacent to the river is characterized by large-lot residential, park land and undeveloped parcels. Preserving land from further development along the Croton River corridor may be beneficial to the river ecosystem.

For more information about the *Croton-to-Highlands Biodiversity Plan* and to download a copy of the Plan, go to http://www.wcs.org/international/northamerica/mca/mcaprojects/CHBP.

Croton River

Figure 2-16. Wildlife Corridors Identified in the Indian Brook-Croton Gorge Watershed as part of the Croton-to-Highlands Biodiversity Plan





Mallard, Eastern Box Turtle, BullFrog and Northern Flicker

U.S. Fish and Wildlife Service's online digital media library

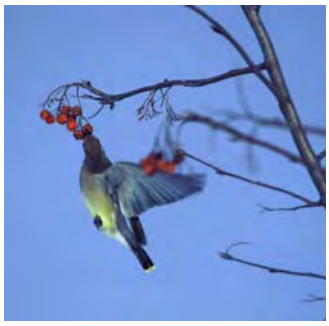
Figure 2-17. Focal Species of the Indian Brook-Croton Gorge Watershed

Common Name	Latin Name	Notes
Amphibians		
Spotted salamander	*Ambystoma maculatum*	
Northern two-lined salamander	*Eurycea bislineata*	
Four-toed salamander	*Hemidactylium scutatum*	
Redback salamander	*Plethodon cinereus*	
American toad	*Bufo americanus*	
Gray treefrog	*Hyla versicolor*	
Northern spring peeper	*Pseudacris crucifer*	
Bullfrog	*Rana catesbeiana*	
Green frog	*Rana clamitans*	
Pickerel frog	*Rana palustris*	
Wood frog	*Rana sylvatica*	
Reptiles		
Eastern box turtle	*Terrapene carolina*	A, B
Northern black racer	*Coluber c. constrictor*	
Northern ringneck snake	*Diadophis punctatus edwardsii*	
Black rat snake	*Elaphe obsoleta*	
Eastern garter snake	*Thamnophis s. sirtalis*	
Northern copperhead	*Agkistrodon contortrix mokasen*	C
Breeding Birds		
Mallard	*Anas platyrhynchos*	
Wood duck	*Aix sponsa*	
Canada goose	*Branta canadensis*	
Wild turkey	*Meleagris gallopavo*	
Mourning dove	*Zenaida macroura*	
Red-tailed hawk	*Buteo jamaicensis*	
Yellow-billed cuckoo	*Coccyzus americanus*	
Hairy woodpecker	*Picoides villosus*	
Downy woodpecker	*Picoides pubescens*	
Pileated woodpecker	*Dryocopus pileatus*	
Red-bellied woodpecker	*Melanerpes carolinus*	
Northern flicker	*Colaptes auratus*	
Eastern kingbird	*Tyrannus tyrannus*	
Great crested flycatcher	*Myiarchus crinitus*	
Eastern phoebe	*Sayornis phoebe*	
Eastern wood-pewee	*Contopus virens*	
Blue jay	*Cyanocitta cristata*	
American crow	*Corvus brachyrhynchos*	
Brown-headed cowbird	*Molothrus ater*	
Red-winged blackbird	*Agelaius phoeniceus*	
Baltimore oriole	*Icterus galbula*	
Common grackle	*Quiscalus quiscula*	
House finch	*Carpodacus mexicanus*	
American goldfinch	*Carduelis tristis*	
Chipping sparrow	*Spizella passerina*	

Focal Species of the Indian Brook-Croton Gorge Watershed, cont.

Common Name	Latin Name	Notes
Field sparrow	*Spizella pusilla*	
Song sparrow	*Melospiza melodia*	
Swamp sparrow	*Melospiza georgiana*	
Eastern towhee	*Pipilo erythrophthalmus*	
Northern cardinal	*Cardinalis cardinalis*	
Rose-breasted grosbeak	*Pheucticus ludovicianus*	
Indigo bunting	*Passerina cyanea*	
Scarlet tanager	*Piranga olivacea*	
Barn swallow	*Hirundo rustica*	
Tree swallow	*Tachycineta bicolor*	
Northern rough-winged swallow	*Stelgidopteryx serripennis*	
Cedar waxwing	*Bombycilla cedrorum*	
Red-eyed vireo	*Vireo olivaceus*	
Warbling vireo	*Vireo gilvus*	
Black-and-white warbler	*Mniotilta varia*	
Worm-eating warbler	*Helmitheros vermivorum*	C,D
Blue-winged warbler	*Vermivora pinus*	D
Yellow warbler	*Dendroica petechia*	
Black-throated green warbler	*Dendroica virens*	
Prairie warbler	*Dendroica discolor*	C,D
Ovenbird	*Seiurus aurocapilla*	
Northern waterthrush	*Seiurus noveboracensis*	
Louisiana waterthrush	*Seiurus motacilla*	
Kentucky warbler	*Oporornis formosus*	D, E
Common yellowthroat	*Geothlypis trichas*	
Canada warbler	*Wilsonia canadensis*	C, D
American redstart	*Setophaga ruticilla*	
Northern mockingbird	*Mimus polyglottos*	
Gray catbird	*Dumetella carolinensis*	
Carolina wren	*Thryothorus ludovicianus*	
House wren	*Troglodytes aedon*	
White-breasted nuthatch	*Sitta carolinensis*	
Tufted titmouse	*Baeolophus bicolor*	
Black-capped chickadee	*Poecile atricapillus*	
Blue-gray gnatcatcher	*Polioptila caerulea*	
Wood thrush	*Hylocichla mustelina*	C, D
Veery	*Catharus fuscescens*	
American robin	*Turdus migratorius*	
Eastern bluebird	*Sialia sialis*	

Notes:
A: NYS Special Concern
B: Westchester County Threatened
C: Westchester County Special Concern
D: Audubon Society Special Concern
E: Westchester County Endangered



Indigo Bunting, Cedar Waxwing, Ovenbird and Woodthrush

U.S. Fish and Wildlife Service's online digital media library

2.7 Land Use In the Watershed

Land use analysis of a watershed permits an understanding of the potential for future change through new development and land alteration. A land use analysis examines the actual use of the land (residential homes, commercial businesses, etc.). Pollutants such as metals and toxins from cars, soil from land development and earth moving practices and pesticides and fertilizers applied to lawns can end up in drinking water sources and waterbodies. Assessing the potential impacts that various land uses can have on drinking water and waterbodies is of primary importance

Figure 2-18. Indian Brook-Croton Gorge Watershed Land Use

Land Use Category	Land Use (Acres)	Percent of Watershed
Residential		
R-2A (≥2 ac.)	775	24%
R-1A (0.75-1 ac.)	217	7%
R-1/3A (0.25-0.75 ac.)	188	6%
R-1/4A (<0.25 ac.)	220	7%
R-MF (Multi-family)	55	2%
Non-Residential		
Commercial/Mixed Use	29	<2%
Institution/Religious	169	<6%
Manufacturing/Warehouse	10	<1%
Office	37	1%
Transportation General/Utility	201	9%
Open Space		
Private Recreation	71	3%
Water Supply	76	3%
Park	501	16%
Nature Preserve/Conservation	179	5%
Undeveloped		
Undeveloped	370	11%
Non-Parcel		
Right of Way	83	

when quantifying the health of a watershed and determining actions that should be taken to restore and protect drinking water sources and waterbodies.

Land use was analyzed throughout the Indian Brook-Croton Gorge Watershed. Parcels in the watershed were categorized into 15 different land uses. In order to provide an overview of land use, the 15 different land uses were placed into four general categories, Residential, Non-Residential, Open Space and Undeveloped.

Figure 2-19. Percent impervious surfaces by land use in the watershed

Land Use	Percent Impervious Surfaces
Residential	
R-2A	2%
R-1A	3%
R-1/3A	6%
R-1/4A	11%
R-MF	4%
Non-Residential	
Commercial/Mixed Use	13%
Institution/Religious	3%
Manufacturing/Warehouse	10%
Office	7%
Transportation General/Utility	5%
Open Space	
Private Recreation	<1%
Water Supply	<1%
Park	<1%
Nature Preserve/Conservation	<1%
Undeveloped	
Undeveloped	<1%

The distribution of the general land uses located in the watershed are identified in Figure 2-20. As shown in the figure, the watershed is almost equally residential (46%) and open space and undeveloped (38%).

In order to accurately assess land use in the Indian Brook-Croton Gorge Watershed a detailed land use classification was created, which combined land use categorized in both the Westchester County 1996 land use and 2004 open space GIS data coverages. The overall structure of the various land use classification system and more detailed information on the land use analysis can be found in Appendix B: Methodologies.

The land use categories that fall within each of the general land use groupings can be found in Figure 2-18. Figure 2-18 also includes the total acreage and percent coverage for each land use found in the watershed. Figure 2-21 is a land use map of the watershed.

Impervious surface was also calculated based on the 2000 Westchester County data for each land use (Figure 2-19) (for details on the calculations of impervious surfaces refer to Appendix B). A total of 3.8% of the land in the watershed is already impervious surface.

Figure 2-20. General land uses found in the Indian Brook-Croton Gorge Watershed

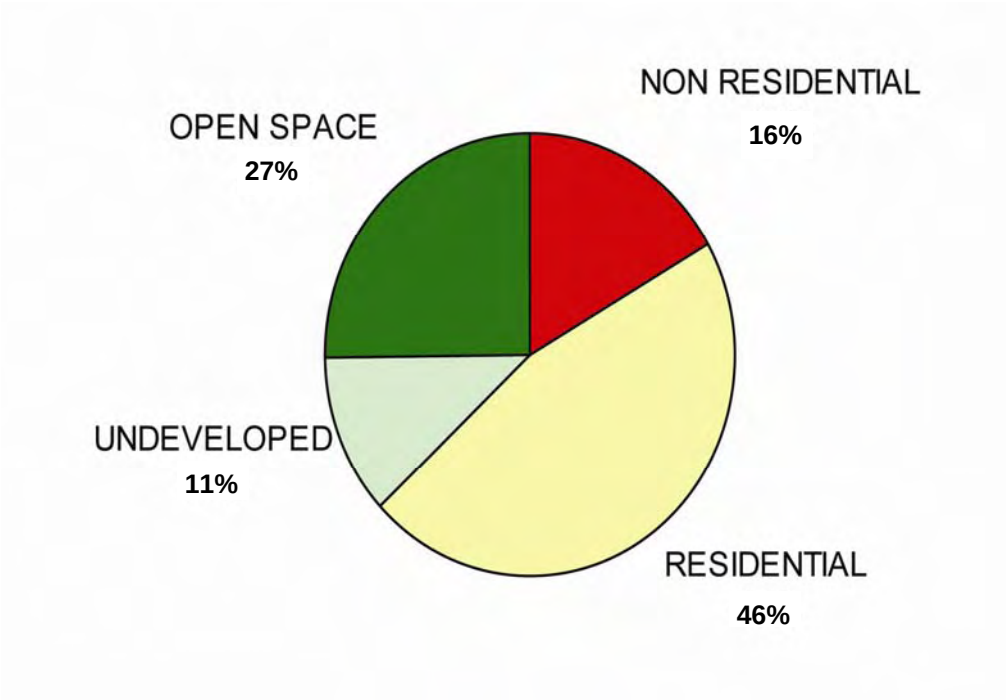
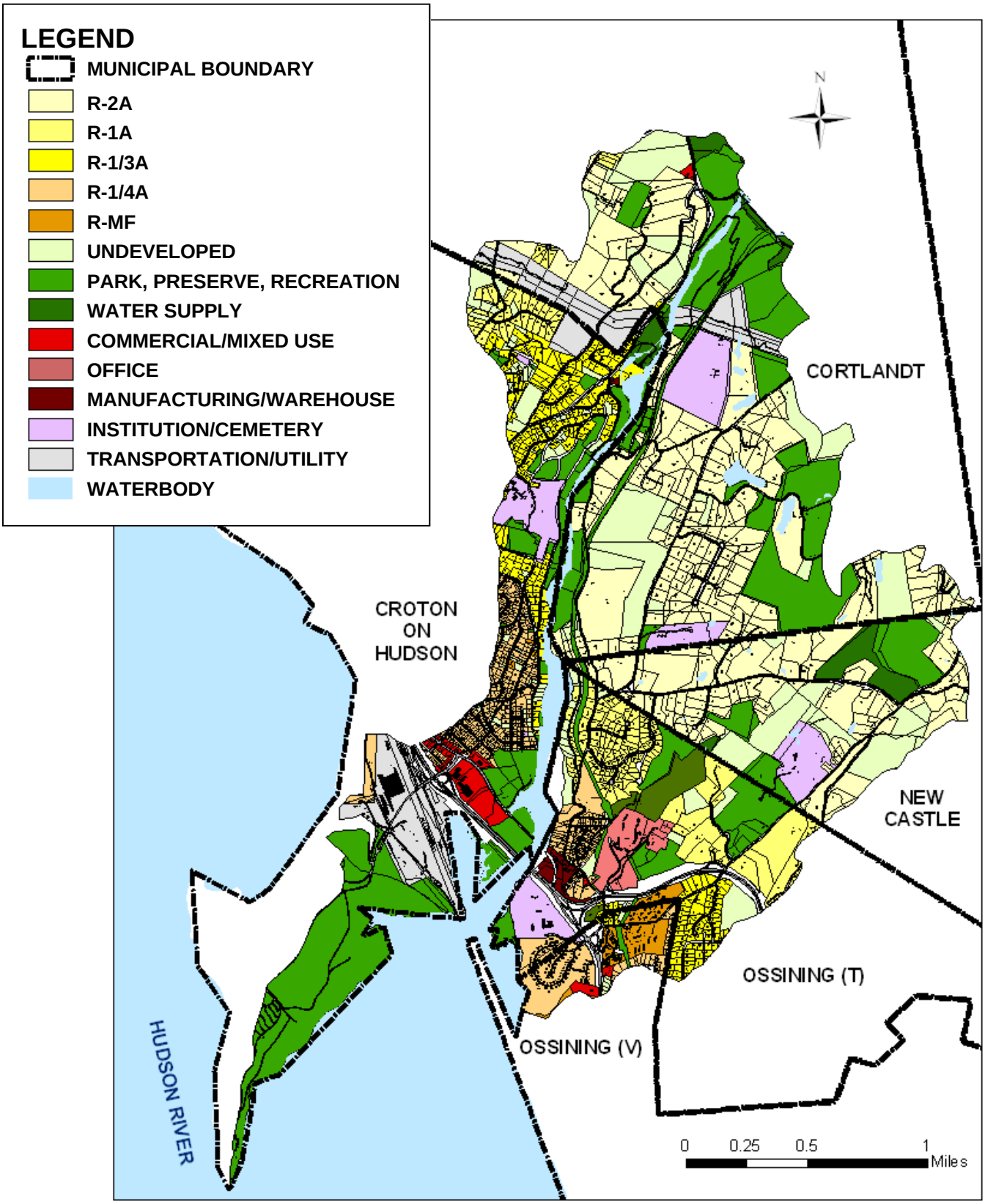


Figure 2-21. Map of general land uses found in the Indian Brook-Croton Gorge Watershed



RESIDENTIAL

Residential development is the most dominant land use throughout the watershed with 46% characterized as residential. The five residential categories were created based on acreage: R-2A, R-1A, R-1/3A, R-1/4A and R-MF (refer to Figure 2-18). Figure 2-24 illustrates the distribution of the residential land uses found in the watershed. Large homes on large properties (Figure 2-22) are common in the watershed and found mainly in unsewered areas of the watershed. Denser development is found in the sewered areas of the watershed (Figure 2-23).

Figure 2-22. Typical R-2A single family home

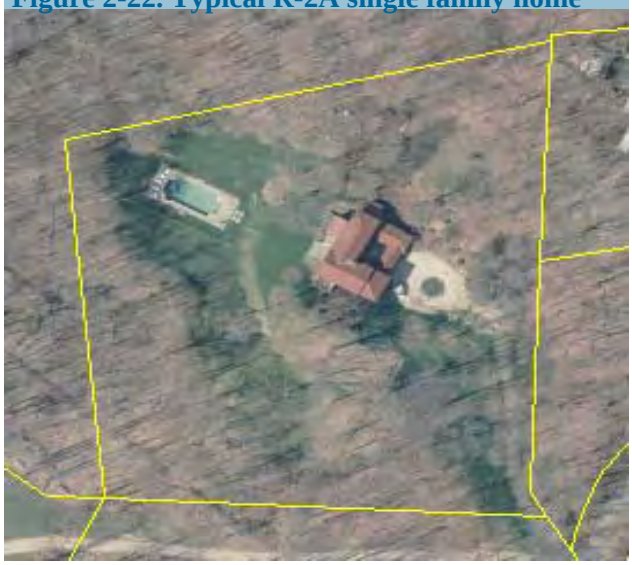


Figure 2-23. Residential housing in Ossining.

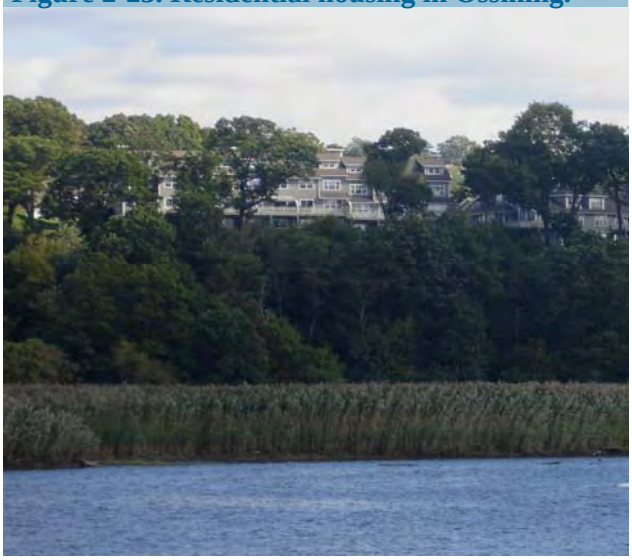
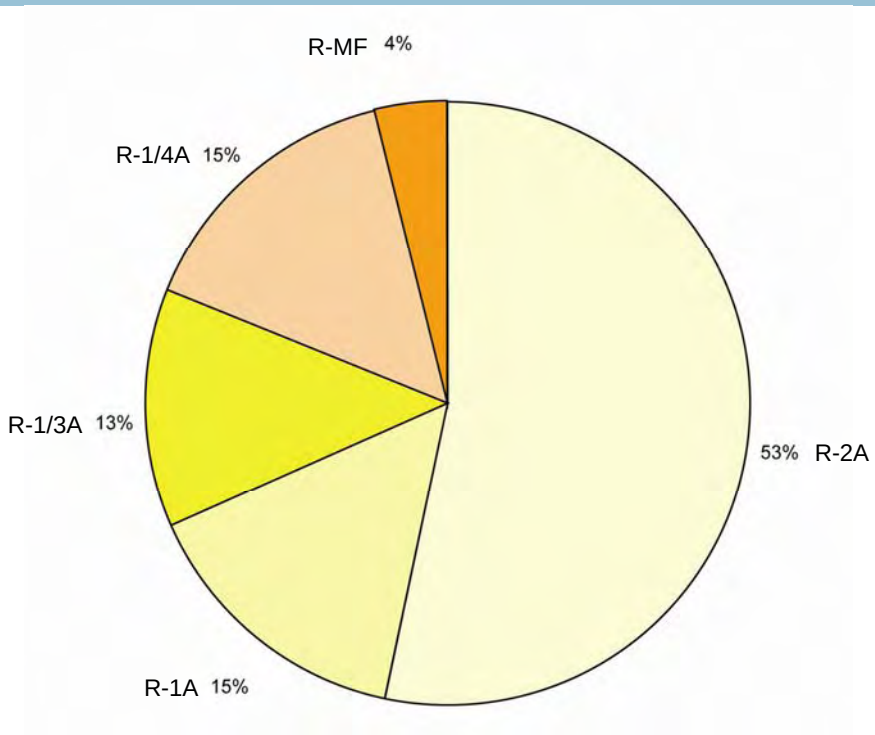


Figure 2-24. Distribution of residential land uses in the watershed



NON-RESIDENTIAL

Non-Residential is the third largest general land use found in the watershed, making up 16% of the total watershed (refer to Figure 2-20). There are five categories in the watershed under this heading that vary greatly in intensity of land use activities. Transportation and utility uses are the most prevalent non-residential land uses in the watershed due to the location of the Metro-North's Croton Harmon Station (Figure 2-27). Another common land use is general commercial as shown in Figure 2-26. Figure 2-25 displays the distribution of the non-residential land uses found in the watershed.

Figure 2-25. Distribution of non-residential land uses in the watershed

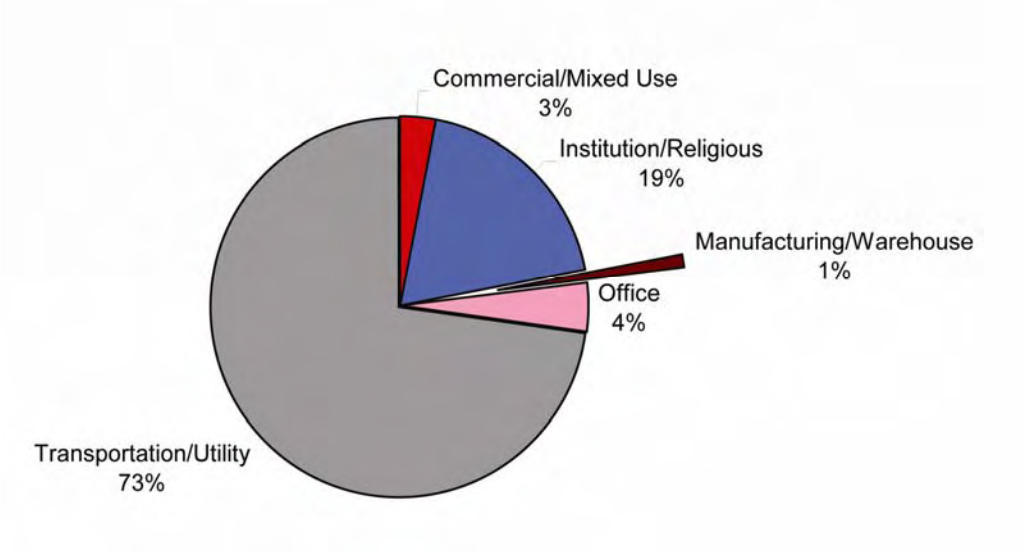


Figure 2-26. Commercial shopping center, Croton

Figure 2-27. Municipal Garage, Croton

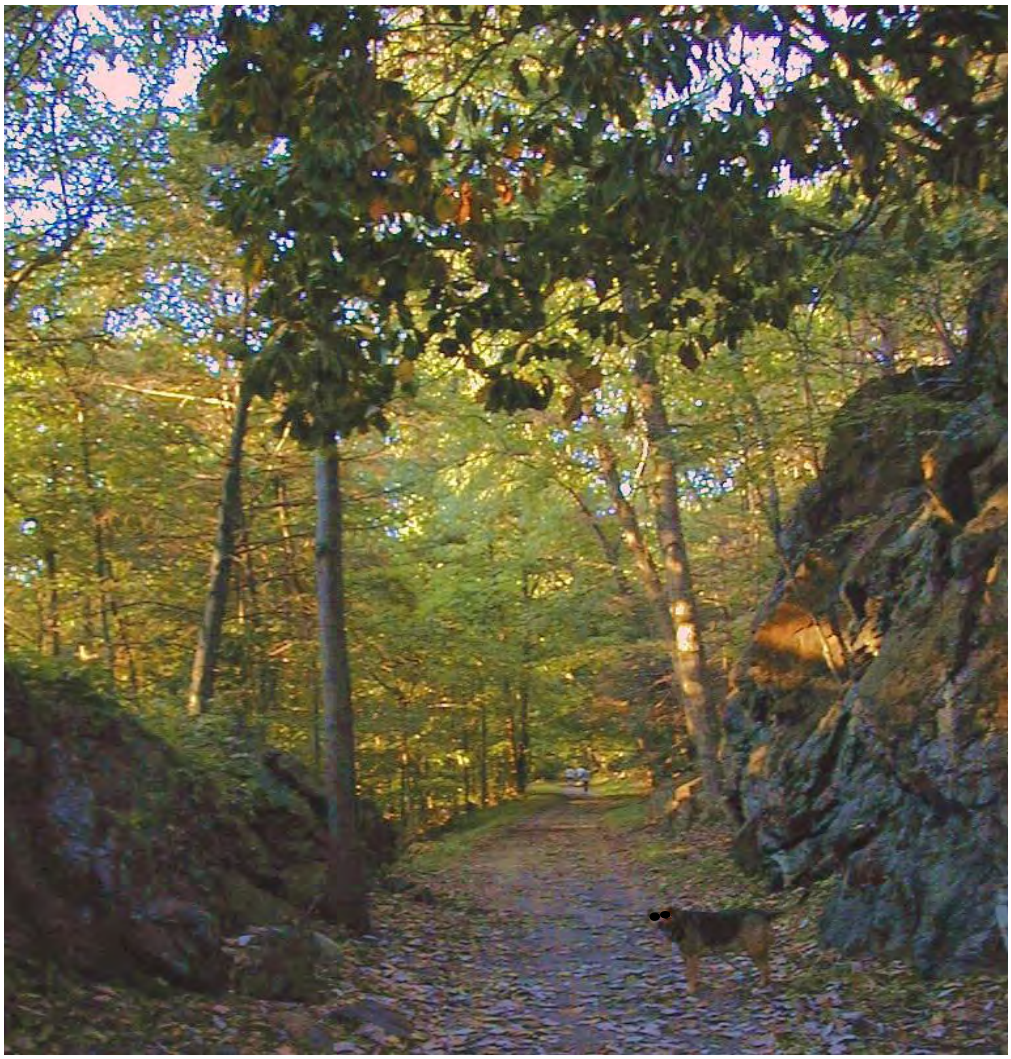
OPEN SPACE

Approximately 27% of the watershed can be classified as open space (refer to Figure 2-20). There are four categories of open space divided by the actual use of the land (refer to Table 2-18). This general land use group is the second largest land use group, after residential, in the watershed. As of 2004, there were 0.51 acres of open space for each one acre of residential use, a one to two ratio. Open space also includes a number of different land uses that are considered desirable land uses for environmental, recreational, wildlife and economic benefits.

UNDEVELOPED LAND

Approximately 11% of the watershed consists of parcels that are undeveloped and are considered vacant land (refer to Figure 2-18). Undeveloped land has not been preserved as open space and is open for development and can be publicly or privately owned.

Figure 2-28. Croton Aqueduct Trail



A. TOWN OF CORTLANDT

The Town of Cortlandt encompasses almost 35 square miles in northern Westchester. Although only 6% of the Town of Cortlandt is located in the Indian Brook-Croton Gorge Watershed, Cortlandt makes up 38% of the watershed. Cortlandt's area of the watershed is primarily large lot residential characterized by single family homes on parcels at least double the size found elsewhere in the watershed.

Forty-two percent of the watershed in Cortlandt can be classified as having steep slopes. In Cortlandt, steep slopes greater than 25% are primarily found adjacent to the Croton River where the parcels are generally residential or open space.

The Indian Brook Reservoir and its tributaries are very important environmental assets to the watershed. The Indian Brook subwatershed in Cortlandt is not fully developed. Any additional development could adversely impact water quality, especially without the utilization of stormwater best management practices. Such practices include measures such as leaf collection. Cortlandt has a leaf collection

Figure 2-29. Croton Dam Falls, Cortlandt, New York

program and currently all leaf collection is done in the fall.

In 2003, the Town of Cortlandt adopted an enhanced Steep Slope Ordinance which further protected steep slopes in excess of 15%.

Many residents in Cortlandt are on private well water and no government monitoring exists for private well supplies. It is the homeowner's responsibility to monitor his/her water quality. Cortlandt has taken steps to provide groundwater quality protection in the watershed through an entitled Aquifer Protection Zone.

Cortlandt currently has environmental regulations that could potentially help to improve and protect water quality in the watershed. These regulations are included in the ordinance review found in Appendix A: Additional Resources. The Town will be participating in Westchester County's MS4-Phase II Stormwater Education and Outreach Program funded through the NYS Environmental Protection Fund supported by the NYS DEC.

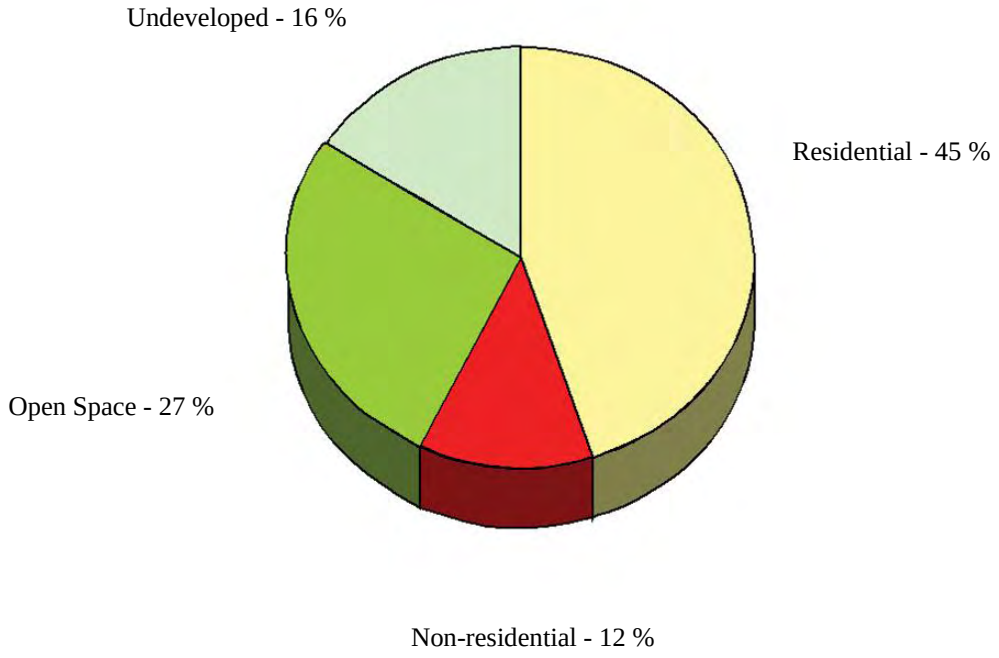
The area of Cortlandt in the watershed is not sewered and malfunctioning septic systems could be a potential source of groundwater contamination.

Cortlandt has recently made drainage improvements on Quaker Bridge Road.

A majority of the road runoff in Cortlandt's share of the watershed discharges into roadside swales. Properly constructed and maintained swales can be an environmentally friendly application to direct the flow of stormwater runoff. Many roadside swales in the Town, however, are not protected by vegetation or riprap and experience a great amount of erosion. The erosion in the swales leads to structural instability of the road sides and increase in sedimentation in the receiving waterbody. In Cortlandt, the major area of concern exists along Quaker Bridge Road.

Many outfalls in the Town discharge directly into the Croton River. Upon investi-

Figure 2-30. Town of Cortlandt Land Use in the watershed



gation, the stormwater did not appear to be pretreated. Many outfalls discharge onto steep slopes causing the slopes to erode. The high rates of destructive erosion from stormwater discharges can lead to structural instability of the slopes and increase sedimentation of the Croton River.

Land Use in Cortlandt

Land in Cortlandt's area of the watershed is typified by large lot residential and open space. No hamlet area or commercial center exists. The residential areas are characterized as being semi-rural in character. Route 129 is the only major road that goes through Cortlandt's area of the watershed. Croton Gorge Park, a County Park, is one of the largest uses of land as is the Danish Home, a retirement home for people of Danish Descent. The Danish Home practices organic gardening as a recreational activity for the residents. Figure 2-30 details the land use in Cortlandt's section of the watershed.

Undeveloped

Sixteen percent of the land area in Cortlandt is undeveloped, with the largest contiguous parcels of undeveloped in the vicinity of Quaker Bridge Road. If this land were developed, it could impact the water quality of the watershed by increasing impervious surfaces and stormwater runoff.

Nature Preserve, Parks and Conservation Land

Twenty-three percent of the land in Cortlandt consists of nature preserves, parks and conservation land. The largest park located in the Indian Brook-Croton Gorge Watershed is the Westchester County Croton Gorge Park, the site of the New Croton Dam which is National Register Landmark property.

Non-residential

Institutional properties make up 5% of the total land area in Cortlandt and most parcels are underdeveloped. Seven percent of institutional lands are covered with impervious surfaces. If institutional land is developed to the fullest potential, impervious surface and the total stormwater runoff will increase.

R-2A: Lots of 2 Acres or Greater

A large portion of the R-2A district in Cortlandt does not have stormwater infrastructure. Sheet flow serves as the primary transportation method for stormwater runoff. If there is enough pervious surface for the water to infiltrate and water is not directed down steep slopes, sheet flow should not be a major concern. However, if development is to increase, flooding and pollutant loading from untreated stormwater runoff can become a major water quality issue. The primary areas of sheet flow concern are near the Croton River and waterbodies.

Figure 2-31. Open Space in Cortlandt, New York

Figure 2-32. Typical R-2A land use in Cortlandt

B. VILLAGE OF CROTON-ON-HUDSON

The Village of Croton-on-Hudson's (Croton) area totals 3,056 acres of which 30%, 918 acres, is located in Indian Brook-Croton Gorge Watershed. Croton's portion of the watershed is only located in Croton Gorge Basin, but encompasses the second largest area, 26%, in the watershed by municipality. Figure 2-33 details Croton's land use in the watershed.

The Croton River is an important environmental asset to the watershed. The river currently receives discharges from stormwater outfalls and sheet flow. A delicate ecosystem in the river and potential interaction between the river and Croton aquifer exists. Improving and monitoring the water quality of the Croton River and determining how the flow regime affects the wildlife in Croton River corridor is important to protect the delicate balance of the river and aquifer. Additionally, it is very important that the Village of Croton-on-Hudson maintain and monitor a suffi-

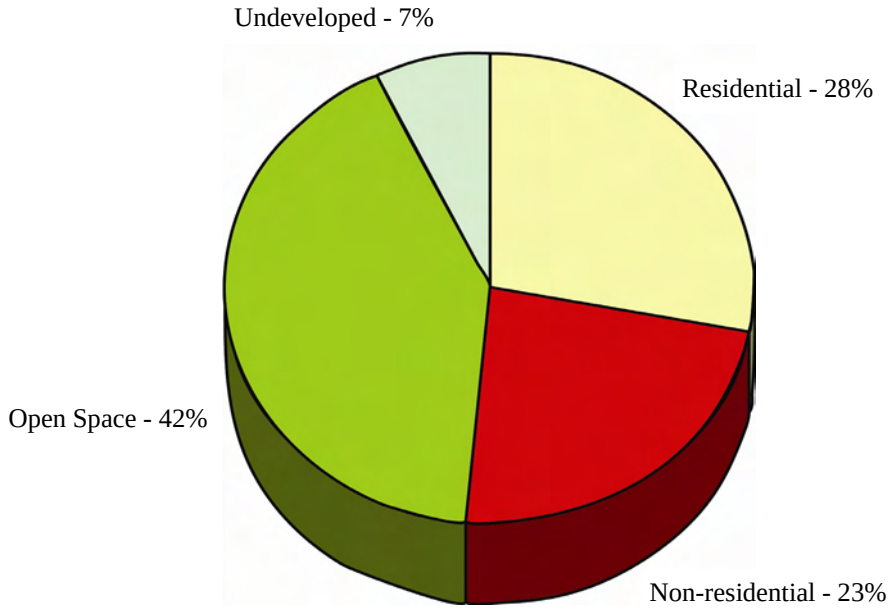
cient buffer adjacent to the Croton River to protect and improve water quality in the River and aquifer.

Wetlands in Croton have become degraded over the years as a result of invasive species. The greatest areas of concern are the tidal wetlands located along the Route 9/9A corridor. Eleven percent of watershed soils are classified as hydric, a wetland indicator, although only 7% of the entire watershed is designated as wetland. Wetlands not identified by the federal or state government could therefore have the potential to become designated wetlands of local significance and some are located in Croton in Croton Point Park and along the Croton River. Twenty-two percent of Croton contains steep slopes. Most of the steep slopes are concentrated along Croton River and in developed areas.

The Village has a stormwater public information display and stormwater newsletter inserts and will be participating in Westchester County's MS4-Phase II Stormwater Education and Outreach Program funded through the NYS Environmental Protection Fund supported by the NYS DEC. Croton currently has environmental regulations that help improve and protect water quality in the watershed. More information about Croton's ordinances can be found in the ordinance review located in Appendix A: Additional Resources.

Stormwater problem area investigations were conducted in Croton using site reconnaissance techniques. Currently, all stormwater runoff from Route 9/9A drains directly from the roadways and discharges into Croton Bay. The Shop Rite Shopping Center, located on Riverside Avenue (Figure 2-34), has a large parking lot with little pervious surface. Sediments can be found throughout the parking lot that di-

Figure 2-33. Village of Croton Land Use in the watershed



rectly drain into the catch basins during each rainstorm. Currently no stormwater practices are being conducted in this area. Dumpsters and other waste disposal containers, if not properly maintained, could also contribute to stormwater runoff pollutants. Untreated runoff from the shopping center runs underneath Route 9/9A and into Croton Bay.

Land Use in Croton

The watershed slices through the Village of Croton taking in the full spectrum of land uses found throughout the Village. Croton is the most urbanized area within the watershed.

Residential

Twenty eight percent of the total land area in Croton is zoned for residential. Residential land use contributes to a majority of the nonpoint source pollution in Croton. The nonpoint source pollution comes from common activities in residential areas such as lawn care, car washing and pet waste disposal.

Undeveloped

Seven percent of the total land area in Croton is undeveloped. Most of the undeveloped land is scattered throughout the Village, but found mostly in residential areas. Undeveloped parcels have a potential for development and if developed, may impact water quality of the watershed due to an increase in impervious surfaces and stormwater runoff.

Figure 2-34. Shop-Rite Plaza, Croton-on-Hudson, New York

Parks and Conservation Land

Approximately 35% percent of the total land in Croton can be classified as historic, nature preserves, parks or conservation. A majority of this land is zoned for residential uses. A concern does not really exist for residential development but the potential increase of impervious surfaces by the existing land uses such as Croton Point Park or Van Cortlandt Manor is a concern.

Institution

Institutional land uses, which compose 4% of the total land area in Croton, are typically underdeveloped and are about 7% impervious. A potential exists under current regulations for further development of these properties and if further developed the total impervious surface and stormwater runoff will increase.

Non-residential

Commercial and transportation uses comprise approximately 16% of Croton. Although non-residential land uses are a small percentage of the total land area in Croton, non-residential land uses typically have large areas of impervious surfaces and onsite activities that could degrade water quality. If stormwater from these parcels is not properly controlled and treated, these parcels have the potential to contribute significant pollutants into the watershed. Major areas of concern are the shopping center located east of 9/9-A, the Metro-North train station and repair yards and Route 9/9-A.

C. TOWN OF NEW CASTLE

New Castle is approximately 26 square miles and about 3% of the town is located in the watershed. It is almost entirely located in the Indian Brook subwatershed. The town comprises 15% of the watershed and similar to Cortlandt, most of town's watershed consists of single family homes on large lots.

Glendale wetland in New Castle is the largest and only upland NYS DEC designated wetland in the watershed. Steep slopes are found throughout the Town, primarily located on undeveloped and underdeveloped parcels. New Castle currently has environmental regulations to help improve and protect water quality. More information can be found in the ordinance review located in Appendix A: Additional Resources.

Some residents in the town rely on private well water for drinking water. New Castle has attempted to provide groundwater quality protection in the watershed through overlay zoning. New Castle has established an overlay zone to protect the Indian Brook Reservoir, but the restrictions are limited and pertain mostly to wetland buffers. Stormwater runoff flows as sheet flow towards the reservoir and reservoir tributaries. Any additional development may have an adverse affect on the Indian Brook Reservoir water quality, especially if certain stormwater management practices are not instituted. Land surrounding the Indian Brook Reservoir in New Castle does not contain stormwater infrastructure.

New Castle has an existing catch basin cleaning program. Most catch basins are cleaned once every year. To date, there is no official illicit discharge program in

Figure 2-35. Glendale Wetland, New Castle

place. The town currently has a street sweeping program with streets swept twice a year by mechanical sweepers. The town participates in the Westchester County Household Hazardous Waste Collection Program and informs their residents of the program through informational mailings. No town leaf collection program in place. New Castle currently has no road salt management program or policies regarding snow disposal.

New Castle has education and outreach programs concerning stormwater which includes a section in the town's newsletter called Conservation Notes. The Town will also be participating in Westchester County's EPA Phase II Stormwater Regulations Public Education and Outreach Program funded through NYS Environmental Protection Fund supported by the NYSDEC.

Land Use in New Castle

Land in New Castle's area of the watershed can be typified similarly to that in the Town of Cortlandt, by large lot residential and open space. No hamlet area or commercial center exists. The residential areas are characterized as being semi-rural character, but no major roads pass through the town. Figure 2-36 details the land use in New Castle's section of the watershed.

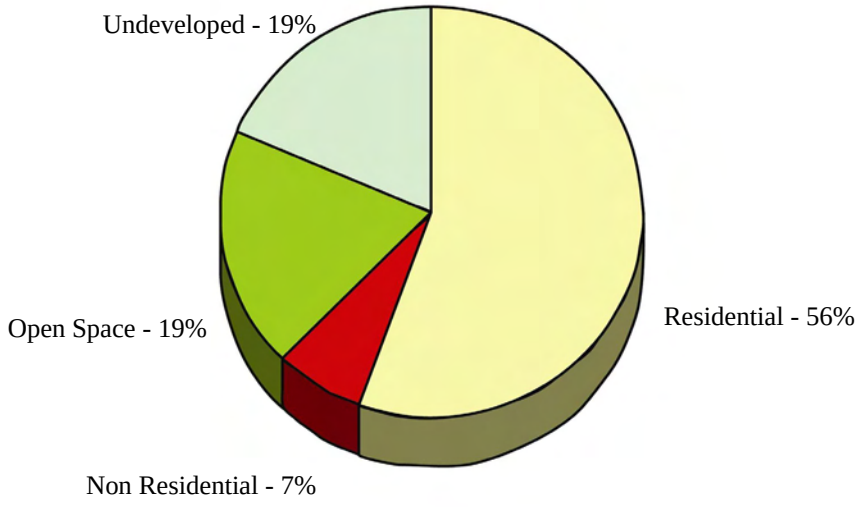
Residential

Forty-eight percent of the watershed area in New Castle is zoned R-2A, two-acre residential. Eight percent of the watershed area in the town is zoned for R-MF, multi-family housing. Residential property impervious surface is only 7%, but residential land use generates a majority of the nonpoint source pollution found in New Castle. Also, many parcels found in R-2A zoning districts are underdeveloped and have a greater potential for development. Redevelopment in areas surrounding the Indian Brook Reservoir could potentially degrade water quality.

Undeveloped

Nineteen percent of the watershed area in New Castle is undeveloped. If the unde-

Figure 2-36. Land Use in New Castle in the watershed.



veloped land becomes developed it could potentially impact water quality in the watershed due to increases in impervious surface and thus stormwater runoff. Specific areas of concern include undeveloped properties surrounding the Indian Brook Reservoir.

Open Space

Approximately 12% of the watershed area in New Castle consists of nature preserves and parks. Proper management of preserve and park land adjacent to the Glendale wetland is considered to be of great importance for water quality protection.

Non-residential

Institutional land comprises 7% of the watershed in New Castle and is also underdeveloped. Currently, institutional land uses are covered with approximately 7% of impervious surfaces. If the institutional land uses are developed to the full potential the total impervious surfaces and associated stormwater will increase. New Castle has one of the largest institutions, the Asthmatic Children's Foundation of New York (Figure 2-37), in the watershed.

D. TOWN OF OSSINING

The Town of Ossining has an area of 1,940 acres of which 29%, approximately 570 acres, is located in the watershed. The town has the third largest area in the water-

Figure 2-37. Asthmatic Children's Foundation of New York, Town of New Castle

shed and is located in both the Indian Brook and Croton Gorge Basin. Figure 2-39 is shows the distribution of land use in the watershed.

Wetlands in the Town of Ossining consist of small Federal National Wetland Inventory (NWI) wetlands and one NYS DEC tidal wetland. The Indian Brook Reservoir and its tributaries are important environmental assets to the watershed. Underdeveloped land surrounds the Indian Brook Reservoir and if certain stormwater management practices are not instituted prior to development, any additional development could potentially degrade water quality in the Indian Brook Reservoir.

Twenty-three percent of the Town of Ossining can be classified as having steep slopes. Steep slopes are found throughout the Town but tend to be concentrated along the Croton River and the Indian Brook Reservoir. Many of the steep slopes are located in areas that are already developed. If the land were to continue to be developed, increased erosion might result from an increase in stormwater runoff.

The Town of Ossining has environmental regulations that potentially can improve and protect water quality in the watershed. An ordinance review was conducted and can be found in Appendix A: Additional Resources.

The Town of Ossining has a drinking water reservoir, the Indian Brook Reservoir with a filtration plant, and it is important for the Town to maintain a buffer around

Figure 2-38. View of Croton Bay from St. Augustine's Cemetery, Town of Ossining, New York

the reservoir and provide that necessary stormwater management practices are instituted to protect water quality.

The Town currently has education and outreach programs concerning stormwater consisting of informational mailings and a booth at the Village/Town of Ossining Fair. The town will also be participating in the Westchester County's MS4-Phase II Stormwater Education and Outreach Program funded through NYS Environmental Protection Fund supported by the NYSDEC. The town participates in Westchester County's Household Hazardous Waste Collection Program and informs residents of the program by mail.

The town's current stormwater practices consist of catch basin cleaning, leaf collection and street sweeping. The Town has an existing public catch basin cleaning program and most areas are cleaned annually with known problem areas being cleaned as necessary. The Town collects leaf debris in the fall and in early winter by using a vacuum. Streets are usually swept by a Town-owned street sweeper four times per year. The Town currently does not have a road salt management program or policies regarding snow disposal but all road salt is stored in a covered building.

Stormwater problem area investigations were conducted using site reconnaissance techniques with the town. Areas of concern were identified in the field:

Outfalls to Croton Bay and River

Untreated stormwater outfalls in the Town discharge directly into the Croton Bay and often the discharge is on steep slopes causing erosion. The high rate of erosion creates both structural instability of the slopes and increased sedimentation of the bay. Stormwater outfalls of concern are located at St. Augustine's cemetery and Mystic Point condominiums.

Roadside Swales

A majority of the road runoff in the Town discharges into roadside swales not protected by vegetation or riprap. The roadside swales are experiencing significant erosion that is creating structural road side instability and increasing sedimentation into the water. A major area of concern is located along Quaker Bridge Road.

Route 9/9A

Currently, all stormwater runoff from Route 9/9A drains directly from the roadways and discharge into the Croton Bay. The stormwater is untreated and likely contributing pollutants to the Croton Bay.

Town of Ossining Land Use

Land use in the town's area of the watershed is primarily residential with the exception of a few non-residential uses on large lots.

R-1/3A

Thirty-one percent of the Town of Ossining within the watershed is zoned for 1/3-acre lots and covered with 9% impervious surfaces. Many lots are underdeveloped with the potential for further development which could possibly lead to increase impervious surfaces and stormwater runoff. R-1/3A parcels surround the Indian Brook Reservoir in the town.

Undeveloped and Open Space

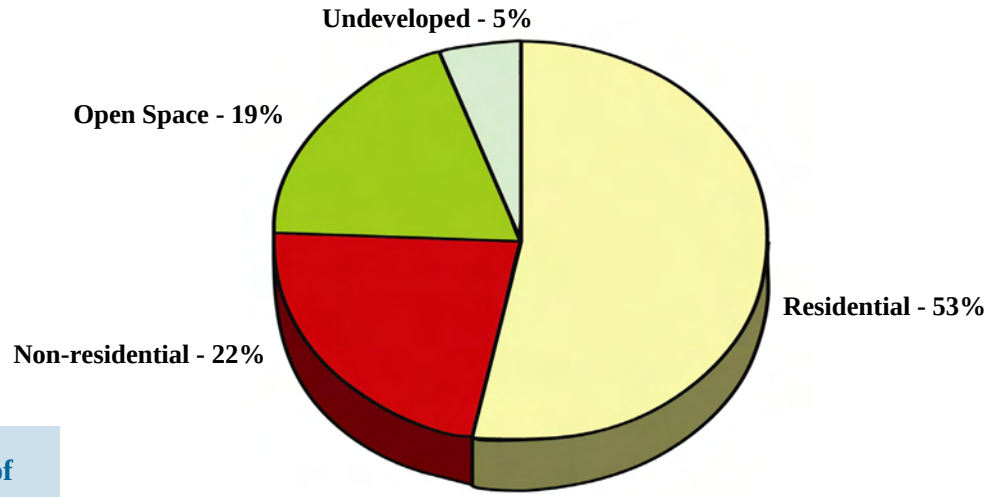
Five percent of the total land area in the Town of Ossining is undeveloped. Twelve percent of the town in the watershed consists of nature preserves and parks.

Non-residential

Office use comprises 7% of the total land area in the Town of Ossining and is also underdeveloped by current zoning standards. Currently, Office use consists only of the General Electric campus of which 16% is covered with impervious surfaces. If this parcel is developed to its fullest potential the total amount of impervious surface would potentially increase. The General Electric campus is also located adjacent to the Indian Brook Reservoir.

Approximately 11% of the Town of Ossining's land is Manufacturing or Warehouse. Although they do not make up a majority of the land area in the Town, the percentage of impervious surfaces is 15% and activities are associated with these uses that possibly generate polluted runoff.

Figure 2-39. Town of Ossining Land Use in the watershed



Cedar Lake, Town of Ossining, New York

E. VILLAGE OF OSSINING

The Village of Ossining area is 2,036 acres of which 5%, approximately 99 acres, is located in the Indian Brook-Croton Gorge Watershed. The Village of Ossining has the smallest land area of all municipalities in the watershed (3%) and is solely located in the Indian Brook subwatershed.

The Indian Brook Reservoir (Figure 2-40) provides drinking water for the Village and even though the reservoir is located in the Town of Ossining it is owned by the Village. The Village is is served by a sanitary sewer system which discharges to and is treated at the County's Ossining Waste Water treatment facility located next to Sing Sing Correctional Facility in the Village.

Thirty-three percent of the Village of Ossining is classified as steep slopes. Steep slopes are found throughout the Village. Many of the steep slopes are located in developed areas. The Village of Ossining currently has environmental regulations that help improve and protect water quality in the watershed. An ordinance review was conducted and the regulations can be found in Appendix A: Additional Resources.

The Village of Ossining currently has a street sweeping program for public streets. The Village has mapped stormwater infrastructure and will be participating in the Westchester County's MS4-Phase II Stormwater Education and Outreach Program funded through the NYS Environmental Protection Fund supported by the NYS-DEC.

The Village of Ossining has stormwater outfalls that discharge directly into the Croton Bay. The stormwater is not pretreated and often discharge occurs onto steep

Figure 2-40. Indian Brook Reservoir, Town of Ossining, New York

slopes causing erosion. The high rate of erosion on the slopes cause both structural instability of the slopes and increased sedimentation of the bay.

Currently, all stormwater runoff from Route 9 drains directly from the roadways and discharges into the Croton Bay. The stormwater is untreated and is most likely contributing many different types of pollutants to the bay.

Land Use in the Village of Ossining

Ninety-four percent of the total area of the watershed in the Village of Ossining is zoned residential. Twenty-six percent of the residentially classified land in the Village of Ossining is covered with impervious surfaces and contributes a majority of the nonpoint source pollution found in the Village of Ossining. The nonpoint source pollution comes from common activities performed in residential areas such as lawn care, car washing and pet waste disposal. Four percent of the watershed in the Village is classified as Open Space and 2% is classified as Non-residential.

Figure 2-41. Mystic Pointe, Village/Town of Ossining (photo credit Ginsburg Development Corporation)

Section 3.0 Recommendations

All five watershed municipalities are subject to Phase II regulations administered by New York State through the SPDES Program. The requirements that the municipalities must fulfill in relation to Phase II, combined with the information revealed through the planning process, reveals that each municipality, individually or in partnership, can undertake specific activities to improve and protect water quality in the watershed.

Specific recommendations were developed according to the five goals of the plan. The recommendations include both activities that municipalities can undertake individually or in partnership with other municipalities in the watershed. Intermunicipal efforts have been recognized by state and federal agencies as a preferred method to address watershed-wide problems. Intermunicipal efforts are typically more efficient and effective because resources can be shared without the constraints of political boundaries.

3.1 Goal: Protect and Restore Natural Resources

The Indian Brook-Croton Gorge Watershed contains vital natural resources including wetlands, watercourses and waterbodies. All five communities rely on the reservoirs, aquifers and private wells located throughout the watershed for drinking water supplies. It is critical to protect and improve these water resources. The following recommendations relate to the preservation and restoration of natural resources in the watershed. Information found in Section 2.5, *Existing Conditions: Natural Resources*, is the foundation for the following recommendations.

Figure 3-1. Croton River Gorge, Cortlandt, New York

<u>Recommendation 1:</u>

Conduct Streamwalks in the Croton Gorge Basin

Streamwalk is a volunteer based stream surveying program developed by the Natural Resources Conservation Service (NRCS) that serves two purposes: natural resource assessment, and community involvement and education. Volunteers are trained to assess a stream's overall health by walking a segment of the stream and gathering information on existing physical conditions of in-stream and streamside characteristics. This information can be used later to identify resource needs and to plan conservation measures in the basin and is a first step in establishing an understanding of the condition of a watershed. Equally important as the data collected, is the educational role of the Streamwalk. Through a train-

ing program, local volunteers receive a basic course in stream ecology, morphology, water quality, non-point source pollution, and the relationship between a community and its river. The training session increases volunteers' awareness and understanding of potential impairments to the health of a river. What volunteers learn in the training session is reinforced when they conduct the survey itself. The survey brings volunteers into direct contact with a river and creates the opportunity for them to understand better the way a river system works and the relationships between their communities and the river.

Watercourses are vital components of a watershed, serving as the arteries that feed larger waterbodies. As such they are important indicators of watershed health, and degraded watercourses can be significant sources of pollution. The communities along the Croton River in the Croton Gorge subwatershed should undertake a Streamwalk. A Streamwalk was conducted for the Indian Brook subwatershed in 2002 (See Appendix A: Additional Resources), which can be easily used to develop a Streamwalk program for other watercourses in the watershed.

Figure 3-2. Water flowing in the Croton River

Recommendation 2:

Remediate Identified Problem Areas in the Indian Brook Basin

The Indian Brook Streamwalk (refer to Appendix A: Additional Resources) identified impairment areas in different stream segments. More detailed investigation of acknowledged impairments should be performed to determine the extent of impairment, ownership (public/private) and accessibility issues, and anticipated effectiveness for restoration purposes. Communities should work together in this effort and should prioritize projects, develop plans and seek funding for the remediation of impairments and the restoration of natural resources. The Westchester County Soil and Water Conservation District may be a valuable resource in such an effort.

Recommendation 3:

Protect Indian Brook Reservoir

The Indian Brook Reservoir is a drinking water source for the Town and Village of Ossining. Undeveloped and underdeveloped lands exist near the reservoir, and steps should be taken in the event these lands are developed to ensure that stormwater management practices are constructed to treat the maximum volume of runoff practical and are maintained in accordance with a practical and feasible operation and maintenance plan. Otherwise, the water quality of the reservoir may be degraded from polluted runoff. The Indian Brook Basin municipalities should also seek funding to acquire land surrounding the reservoir that would serve to increase the buffer area surrounding this important drinking water source. Potential partners might include local land trusts and state and county government. Land could be purchased outright or development rights (conservation easement) could be acquired.

Recommendation 4:

Protect Wetlands at the Local Level

State and federal agencies regulate certain activities in freshwater and tidal wetlands. However, the NYSDEC does not regulate activities in wetlands less than 12.4 acres in size unless they have been determined by the State to be wetlands of unusual local importance. The US Army Corp of Engineers (USACOE) regulates activities in wetlands that meet broader definitions, though there are exemptions for certain actions. The USACOE has a general permitting process for activities under various thresholds and has no regulation of activities within wetland buffer areas. For these and other reasons, regulations to protect all freshwater and tidal wetlands should be implemented and administered at the local level to ensure adequate protection of these fragile resources. Proposed land disturbance activities within wetlands and their associated buffer areas should be reviewed at the local level, and potential impacts should be avoided, minimized or adequately mitigated to the maximum extent practical. The Westchester County Soil and Water Conservation District's Model Ordinance for Wetland Protection should be used as a guide from which to evaluate the effectiveness of existing local wetlands ordinances. Mini-

mum area thresholds should not be included in the definition of freshwater or tidal wetlands. Minimum regulated buffer area extending 100 feet from the edge of a wetland should also be included in the ordinance. An ordinance review was conducted for each municipality and recommendations were made to ensure that local ordinances help protect wetlands. The ordinance review can be found in Appendix A: Additional Resources.

Recommendation 5:

Restore Degraded Wetlands

Many watershed wetlands have become dominated and degraded by invasive species. Funding should be sought to restore the wetlands, particularly the tidal wetlands located along the Route 9/9A corridor. Restoration of the wetlands would result in improved water quality and improved wildlife habitat, including vital fish habitat. Municipalities should utilize existing data available from the County and State as well as local data to identify and evaluate degraded wetlands. Municipalities should work in cooperation to identify and prioritize projects and seek funding to restore the wetlands. On-going monitoring should be a part of the restoration effort. The Westchester County Soil and Water Conservation District has an active aquatic habitat restoration program and can provide advice and assistance in this effort.

Figure 3-3. Tidal wetlands, Croton-on-Hudson, New York

Recommendation 6:

Ensure Proper Functioning of Septic Systems

A watershed-wide approach to ensure proper functioning of existing septic systems should be developed. Possible approaches include a requirement for inspection upon the transfer of property or when property owners apply for a building permit. The Westchester County Department of Health has approval authority over construction of new septic systems and responds to complaints of septic system failures. Neither the County, nor the watershed municipalities, has a program to track septic system maintenance or require inspections.

Recommendation 7:

Monitor the Croton River

As described in Section 2.5, *Existing Conditions: Natural Resources*, the surface water of the Croton River and Croton-on-Hudson's drinking water aquifer are potentially connected. The water quality of the Croton River must be protected in order to protect the drinking water aquifer. Monitoring for water quality parameters and other typical stormwater pollutants should be conducted regularly to ensure the good river water quality.

Recommendation 8:

Prevent Illegal Activities that Degrade Water Quality

Croton Bay municipalities should work with partners and other interested parties to monitor and control illegal activities, such as trespassing, littering, loitering and vandalism, that may degrade water quality in the watershed.

Recommendation 9:

Retain Tree Cover

Retain tree cover as forest and woodland to benefit wildlife and reduce stormwater runoff throughout the watershed.

Recommendation 10:

Maintain and Restore Forested Stream Buffers

Maintain and where possible restore forested stream buffers so as to protect wildlife and water quality.

3.2 Goal: Develop and Implement Stormwater Management Practices that Will Improve Water Quality

All municipalities in the watershed subject to Phase II MS4 regulations. Multiple stormwater management practices, all of which could contribute to the improvement of water quality in the watershed, and the ability for communities to implement Phase II MS4 stormwater requirements, should be implemented in the watershed.

Recommendation 1:

Develop and Adopt Stormwater Infrastructure Data Management Standards

Stormwater infrastructure data should be standardized throughout the watershed. Data should be collected and maintained in electronic form and geo-coded, enabling the data to be easily shared and incorporated into larger databases. Standards should be established for the data elements, scale of data, unit of measurement, frequency of collection, mapping datum and degree of accuracy. Maintenance activities, such as daily log information for road sanding and salting activities, schedules for catch basin cleaning, and general maintenance and repair work programs, should be included. A procedure to share appropriate data among towns and involved agencies should be developed so that each agency can make use of all relevant data in analyses.

Municipalities should also work to identify existing private infrastructure. Where feasible, mapping of all stormwater infrastructure, public and private, should be undertaken in conjunction with other programs or through routine maintenance of stormwater infrastructure.

Recommendation 2:

Establish Illicit Discharge Connection Program

An illicit discharge connection program should be developed to identify illegal connections. In addition, municipalities should develop a watershed-wide monitoring inspection program, including clear protocols for dealing with stormwater conveyance violations.

Recommendation 3:

Develop Stormwater Infrastructure Monitoring and Maintenance Programs

A. Develop Stormwater Infrastructure Monitoring Program

Stormwater infrastructure monitoring programs should be developed to ensure that existing stormwater infrastructure are operating effectively. The infrastructure should not contribute unnecessary pollutants into the watershed due to clogging, erosion or malfunction.

A routing schedule for inspection and maintenance should be established. Routing schedules that begin in the headwater areas of each sub-basin and progress to the discharge point within each sub-basin are most effective because they reduce the likelihood of the maintenance activity producing more work in areas that have already been maintained. Monitoring programs should include a protocol to address violations discovered during monitoring activities.

Figure 3-4. Catch Basin Cleaning Programs

- **List standard watershed-wide maintenance practices and identify those used throughout the municipality.**
- **Include a routine maintenance schedule. The cleaning schedule should coincide with street sweeping and other system maintenance efforts and where subwatershed areas cross municipal boundaries, coordination with the adjacent municipality should occur.**
- **Establish routing for catch basin cleaning, similar to other routing efforts, for water quality purposes.**

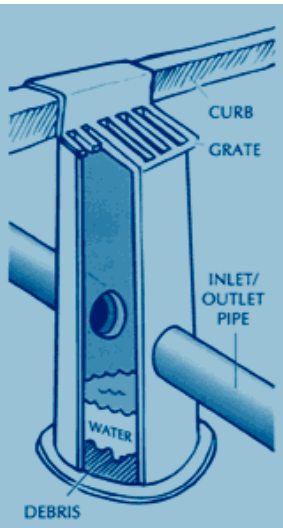


Image from: www.ci.farmington.mi.us

B. Improve Catch Basin Cleaning Program

A routine catch basin cleaning program should be developed and implemented by each watershed municipality. Development of the program should be coordinated with the stormwater infrastructure monitoring program and stormwater infrastructure mapping. Existing programs should be improved. The frequency of catch basin cleaning should be increased for water quality protection.

C. Maintenance of Private Stormwater Infrastructure

In many cases, catch basins on private property are not maintained by the municipalities. Owners of private stormwater infrastructure should be contacted and educated as to maintenance requirements of their stormwater infrastructure. Municipalities could provide private property owners with guidance documents describing how to develop stormwater infrastructure maintenance plans to address catch basin cleaning and parking lot sweeping.

D. Improve Water Quality Street Sweeping Program

Street sweeping is typically based on annual clean-up schedules, performance failures or complaints, not based on protecting water quality. Where subwatersheds are divided by municipal boundaries, street sweeping programs should be coordinated among the adjacent municipalities so as to ensure that sweeping efforts achieve the greatest benefits to water quality. The programs should utilize routing schedules as developed under the stormwater infrastructure monitoring program and be coordinated with other municipal maintenance activities such as catch basin cleaning, mowing and leaf collection.

Current street sweeping programs should be revised to protect water quality and coordinate with other stormwater control practices.

E. <u>Develop Residential Curbside Leaf Collection Program</u>

Municipal residential curbside leaf collection programs (either single or joint) should be developed. Leaf collection programs should consider street sweeping schedules and focus on timing beneficial to stormwater quality.

F. <u>Create Stormwater Utility Districts</u>

A stormwater utility district or other mechanism should be created to generate funding specifically for stormwater management. Currently under NYS law a stormwater utility district can be formed as a drainage district where property owners within the district pay a stormwater fee, and the revenue thus generated directly supports construction, maintenance and upgrade of storm drain systems.

<u>Recommendation 4:</u>

Develop Snow and Ice Operational Plan

Snow and ice operational plans (Figure 3-6) should be developed for each municipality. Plans should specify the type of highway deicing equipment used, the source and storage of materials and the application and calibration methods used for deicing materials.

<u>Recommendation 5:</u>

Participate in Household Hazardous Waste Collection

All municipalities should continue to participate and inform residents of the Westchester County Household Hazardous Waste Collection Days (Figure 3-5). The Westchester County Department of Environmental Facilities runs the program and collections occur four times a year.

Figure 3-5. Hazardous Waste Collection

Images from www.epa.gov

Recommendation 6:

Pretreat Stormwater Outfall Discharges and Identify Retrofit Opportunities

Currently untreated stormwater outfalls flow directly into streams and waterbodies of the watershed. Funding should be sought by municipalities to pretreat the stormwater prior to discharging it into the streams and waterbodies. The following problem areas have been identified for stormwater retrofits:

Figure 3-6. Snow and Ice Operational Plans

Snow and Ice Operational Plans should include:

- Make all material storage facilities permanent structures and fully enclose them.
- Mix handle and load all winter materials in covered areas.
- Install drainage and stormwater collection systems around the perimeter of storage areas to prevent salt and sediment loss to groundwater aquifers or nearby waterways.
- Wash salt trucks in designated areas designed to collect all resulting runoff.
- Remove spilled salts and excess materials remaining in trucks, yards or on roads after every storm.
- Routine calibration of spreading equipment should be conducted throughout the winter season.
- Coordination of snow and ice removal with maintenance of the stormwater conveyance system (i.e. street sweeping and stormwater/catch basin cleaning).
- Explore new technologies as made available.
- Plans should include specific procedures for handling and storing road sand and salt. Proper containment of road sand and salt is imperative for water quality protection.

Current Salt Storage Facility for the Town of Ossining, NY

Figure 3-7. Untreated outfalls leading to Croton River.

- **Route 9/9A:** Currently, all stormwater runoff from Route 9/9A drains directly from the roadways into the Croton Bay. Route 9/9A is a four-lane heavily traveled highway and is the only north-south truck route along the Hudson River in Westchester County. Untreated stormwater from this road contributes to pollutants in the Croton Bay.
- **Outfalls to Croton Bay:** Located in the Town and Village of Ossining are outfalls that discharge directly into the Croton Bay. The stormwater is not pretreated and a majority of the time it is discharged onto steep slopes causing erosion. The high rate of erosion creates both structural instability of the slopes and increased sedimentation of the bay. Major areas of concern are St. Augustine's cemetery and the Mystic Point development.
- **Outfalls to Croton River:** Several outfalls (Figure 3-7) discharge directly into the Croton River and upon investigation the stormwater did not appear to be pretreated. Often times the stormwater outfalls discharged onto steeply sloped areas, causing the slopes to erode. The high rates of erosion from the stormwater discharges lead to structural instability of the slopes and increased sedimentation of the River.
- **Croton-Harmon Metro-North Railroad Station:** The Croton-Harmon Metro-North railroad station and maintenance yard contains a very large parking lot with over 2,000 parking spaces that floods during heavy rains. Presently, stormwater runoff from the southern half of the rail yard discharges into the Croton Bay through an outfall pipe located at the southern end of the site. A retrofit project is currently underway that will replace the existing 54 inch storm drain pipes with 60 inch diameter pipes and install an oil/water separator to treat the runoff prior to discharge. Only the mid to southern portions of the rail yard will benefit from the oil/water separator. All runoff from the entire area of the Croton-Harmon parking lot (Figure 3-8) should be treated.
- **Stormwater Sheet Flow:** Some residential districts in the watershed do no have stormwater infrastructure. Instead, sheet flow is the primary

Figure 3-8. Croton-Harmon Metro-North Railroad Station Parking Lot

method of stormwater conveyance. Adequate pervious surfaces must be maintained in areas of sheet flow for stormwater to properly infiltrate. Inspections should be conducted to assure that erosion is not occurring in areas where stormwater is directed with sheet flow, especially on existing roads. If upon inspection, erosion problems are discovered, action should be taken to rectify the situation with proper stormwater best management practices. Sheet flow towards the Croton River is an area of primary concern.

- **Shop Rite Shopping Center:** The Shop Rite Shopping Center located on Riverside Avenue in Croton-on-Hudson has a large parking lot that drains into catch basins during each rainstorm. Currently, onsite stormwater is not being treated in the privately owned parking lot. The existing storm drains from this shopping center run underneath Route 9/9A and discharge into the Croton Bay.

Recommendation 7:

Restore Eroded Streambanks

Tremendous erosion occurs along the streambanks of the Croton River, depositing soil and other pollutants into the Croton River and the Croton Bay. The erosion often results from unstable outfalls which discharge directly onto the steep slopes. Further studies should be conducted to find the areas of severe erosion and funding should be sought to restore these areas. Municipal highway staff should be trained in proper methods of repair that minimize erosion of drainage swales located adjacent to roads.

Figure 3-9. Eroded streambank on Quaker Bridge Road, Cortlandt

Road runoff in Cortlandt, especially along Quaker Bridge Road, commonly discharges into roadside swales. When roadside swales are poorly designed or maintained they can cause structural instability of the sides of roads and an increase in sedimentation of the receiving waterbody. Roadside swales, however, can be an effective method to control stormwater runoff flow if properly constructed and protected by vegetation or riprap.

3.3 Goal: Promote Sustainable Development Through Land Use and Environmental Regulations

Each land use in the watershed, in one way or another, contributes nonpoint source pollution to the watershed through activities occurring on the land and through the amount of impervious surfaces that exist. Forty-five percent of the watershed is currently residential. Many existing residential areas are considered underdeveloped according to local zoning. Eleven percent of the watershed is undeveloped land. The following section provides recommendations aimed at reducing the impact of existing and future land uses on water quality. Municipalities should review land development regulations and identify sections that may need amending to incorporate low-impact development standards but continue to address concerns of public health and safety. Sustainable land development can also benefit wildlife, as suggested in the Croton-to-Highlands Biodiversity corridor.

Recommendation 1:

Institute Stormwater Controls for Development

Stormwater best management practices and specific site plan requirements should

be developed and applied to building permits and site plans for new construction and redevelopment for the purpose of protecting water quality in each of the watershed municipalities.

Recommendation 2:

Establish Impervious Surface Limits and Alternatives

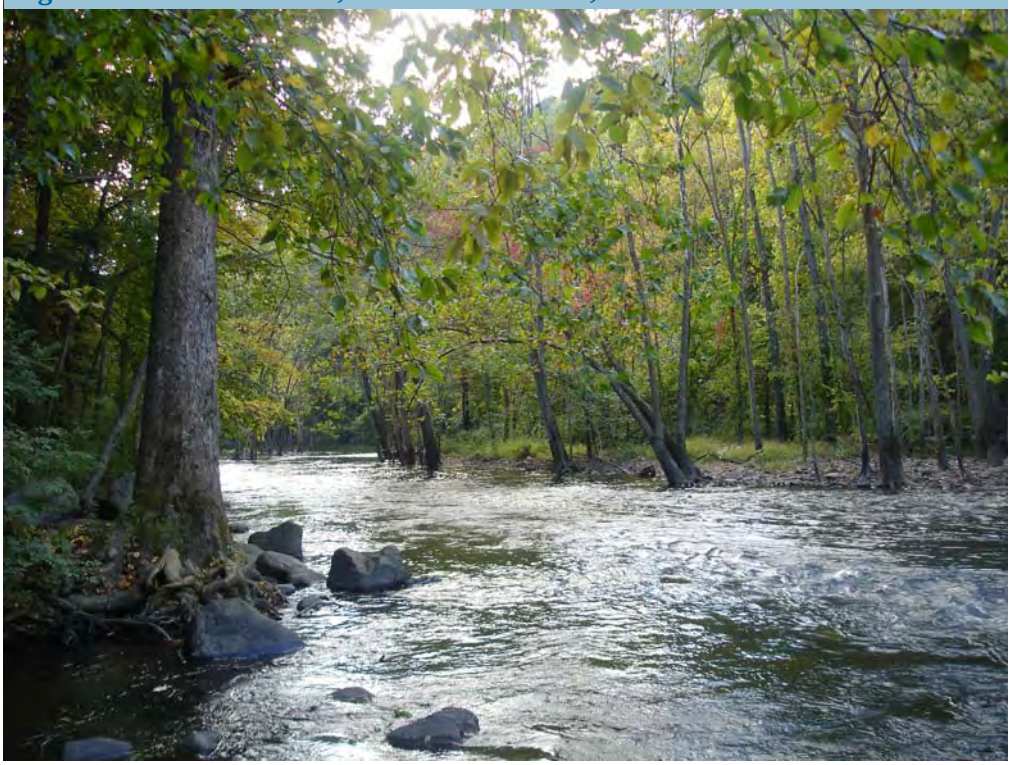
Land use regulations should be modified to set maximum limits on the amount of impervious lot coverage including all impervious surfaces such as driveways, patios and pools. Regulations should encourage alternatives to impervious surfaces such as pervious pavement, open pavers and gravel.

Recommendation 3:

Establish an Indian Brook Reservoir Overlay Zone

A majority of the land surrounding the Indian Brook Reservoir and the tributaries flowing into the reservoir is currently underdeveloped. If fully developed, the Indian Brook Reservoir could become increasingly threatened by nonpoint source pollution. Additional development could have an adverse effect on the water quality of the Reservoir, especially if certain stormwater management practices are not instituted. In an effort to protect water quality, an overlay zone should be implemented to limit impervious coverage, establish buffers, prevent steep slope development and protect environmentally sensitive areas surrounding the Reservoir. Currently, New Castle has established an overlay zone for this area to protect resources, but the restrictions are limited, pertaining mostly to wetland buffers.

Figure 3-10. Croton River, Croton-on-Hudson, NY



Recommendation 4:

Develop a Croton Aquifer Overlay Zone

The Village of Croton-on-Hudson relies on an aquifer to supply its drinking water and has a drinking water ordinance to protect this aquifer. The recharge areas for the aquifer go beyond the Village's political boundaries and management of the total aquifer recharge area is necessary. An overlay zone that follows the aquifer boundaries would further protect the recharge area of the Croton aquifer. The overlay zone should include provisions regarding impervious surface limitations and contaminants. Cortlandt and New Castle have attempted to provide some groundwater quality protection in the watershed through an overlay zone, but the current provisions do not provide adequate protection.

Recommendation 5:

Update Comprehensive Plans

Watershed municipalities should review and update their existing comprehensive plan to be consistent with the Indian Brook-Croton Gorge Watershed Plan.

Recommendation 6:

Protect Open Space

Each municipality should work to protect open space in the watershed for protection of water quality and biodiversity. Open space can be protected through acquisition, establishment of conservation easements and new zoning designations such as park and recreation zoning districts and protective overlay zones.

Open space protection plans should be prepared by each municipality in the watershed. The plans should establish criteria for evaluating the value of parcels for open space protection in terms of potential water quality impacts and preservation of community character. Environmentally sensitive areas and areas that will connect with other open space parcels should be a high priority for open space preservation to better protect the environment and biodiversity corridors. Properties should be identified for protection as permanent open space.

Preservation of undeveloped land as open space should be considered, particularly in areas with environmentally sensitive resources. Consideration should be given to purchasing land through land trusts, dedicated revenue sources and purchasing development rights.

Federal, State and local sources of funding for open space protection exist. Municipalities should seek partnerships with NYCDEP, Westchester County, New York State, land trusts and others to assist in securing grants and funding for the preservation of open space.

Recommendation 7:

Adopt New or Amend Current Ordinances to Reflect Model Environmental Ordinances

Environmental regulations may be the single most important tool available to a community to protect its natural resources and wildlife. As part of the Indian Brook-Croton Gorge Watershed Plan, an ordinance review was conducted for each municipality and recommendations were made to ensure that local ordinances help protect water quality. The watershed ordinance review can be found in Appendix A: Additional Resources.

All municipalities should seek to adopt or amend the recommendations found within the ordinance review which include recommendations for the following environmental areas:

- Drinking Water
- Wetlands and Watercourses
- Erosion and Sediment Control (including Steep Slopes)
- Stormwater
- Trees and Vegetation
- Refuse Management
- Site Design

3.4 Goal: Preserve and Protect Fish, Wildlife and Significant Habitat

Steps must be taken on a watershed level to help preserve and restore the existing habitats (Figure 3-11) thus preserving plant and animal diversity in the watershed. The following recommendations concern the preservation and restoration of biodiversity in relation to information found in Section 2.6 *Existing Conditions: Fish, Wildlife and Significant Habitat.*

Figure 3-11. Woods in Croton

Recommendation 1:

Prepare a Biodiversity Plan for the Watershed

Conduct fish, wildlife and habitat inventory for the parts of the watershed not included in the *Croton-to-Highlands Biodiversity Plan* to identify additional areas in the watershed where the existing plan's recommendations can be implemented. The study area in the *Croton-to- Highlands Biodiversity Plan* includes sections of the Indian Brook-Croton Gorge Watershed in Cortlandt and New Castle. A similar biodiversity plan inventory and study should be conducted to expand the *Croton-to-*

Highlands Biodiversity Plan study area to include the entire watershed. Sources of funding should be sought to support this expanded study. In addition, the watershed municipalities should seek funding sources and support for implementation of recommendations in the *Croton-to-Highlands Biodiversity Plan* and future recommendations that would result from other biodiversity studies in the watershed.

Recommendation 2:

Investigate Croton River Flow Fluctuations

The Croton River's complex system of flow is influenced by sheet flow, storm drain outfalls and releases from the New Croton Dam. Further investigation should be conducted to determine how the current flow affects wildlife in the river corridor and if changes could occur to help protect biodiversity in the watershed.

3.5 Goal: Educate the Public

Education and outreach is a very important component of any watershed plan. Without the support of local government, organizations and residents, the goals of any watershed plan would be difficult to accomplish. Watershed citizen education includes illustrating the connection between everyday activities and its impact on water quality. The education of local officials who create and administer regulations, permits and policies is also important. The following recommendations relate to education, outreach and public involvement programs that the watershed municipalities should undertake to protect water quality.

Recommendation 1:

Require Board/Committee Member Stormwater Training

Legislation should be adopted at the local level to set minimum annual stormwater training/education requirements for planning, zoning and conservation boards.

Recommendation 2:

Develop an Education and Training Program for Highway Personnel

An education and training program should be developed on a watershed-wide basis for highway personnel providing up-to-date information on stormwater management functions including roadside swale maintenance, winter material calibration, material handling and facility cleaning.

Recommendation 3:

Develop and Participate in Community Natural Resource Education Programs

A. Continue to Participate in the MS4-Phase II Stormwater Education and Outreach Program

Many residents are not familiar with the natural resources found in the watershed. Individual homeowners should be educated to understand the connection between the resources and the residents living in the local communities. Homeowners

should also be educated about techniques that reduce the adverse impact of house maintenance activities on water quality. House maintenance activities include snow removal and deicing, fertilizer and pesticides application, lawn mowing and fall leaf cleanup.

Watershed municipalities should continue to actively participate in Westchester County's MS4-Phase II Stormwater Education and Outreach Program funded through the NYS DEC. Over thirty other Westchester County municipalities are participating in this program.

CVMP Monitoring Program
To find out more about the CVMP or to sign up to be a volunteer, go to the program website at:

http://cvmp.westchestergov.com/cvmp

B. Participate in the Westchester County Citizens' Volunteer Monitoring Program

The Westchester County Citizens' Volunteer Monitoring Program (CVMP) involves gathering and sharing information on the health of streams and waterbodies. Volunteers attend a training session where they: 1) learn about the physical (general appearance), chemical (pH, conductivity, etc.) and biological (critters) characteristics of streams and waterbodies, 2) form a monitoring team and 3) receive equipment to begin monitoring a specific stream area. All data is entered into a centralized database. The data, along with the tools to create charts, graphs and run statistical analysis, is accessible to anyone with internet access. Each watershed municipality should have a team monitoring at least one location in their municipality.

Section 4.0 Implementation of Watershed Plan Through Intermunicipal Cooperation

Create an Intermunicipal Agreement for Plan Implementation

Water flows across tax parcels, zoning districts and political boundaries. Municipalities should coordinate decisions and activities that affect water resources as much as possible. For projects that impact one or more communities, both upstream and downstream within a shared sub-basin, a coordinated review should be required among impacted communities. Project review should be applicable to new projects and to retrofit and maintenance projects as well. Project review may require joint planning or town board meetings to discuss development projects in neighboring communities.

Figure 4-1 on the following page outlines the recommendations that each individual municipality should focus on given their geographical location and natural features. The implementation of the recommendations when taken together creates a coordinated, comprehensive approach to protect natural resources within the Indian Brook-Croton Gorge Watershed. Not all recommendations need to be implemented. Many municipalities will need to work together to obtain funding and fully implement the recommendations.

Each community supported a grant application that was awarded to the Westchester County Department of Planning (WCDP) to create an intermunicipal agreement (IMA) to coordinate the implementation of select recommendations found within this plan. The WCDP will be working closely with the municipalities to develop this IMA.

The Croton River

Figure 4-1. Indian Brook-Croton Gorge Watershed Recommendations

	Cortlandt	Croton-on-Hudson	New Castle	Ossining (T)	Ossining (V)
3.1 Goal: Protect and Restore Natural Resources					
Recommendation 1: Conduct Stream-walks in the Croton Gorge Basin	◆	◆	◆	◆	
Recommendation 2: Remediate Identi-fied Problem Areas in the Indian Brook Basin	◆		◆	◆	◆
Recommendation 3: Protect Indian Brook Reservoir	◆	◆	◆	◆	◆
Recommendation 4: Protect Wetlands at the Local Level	◆	◆	◆	◆	◆
Recommendation 5: Restore Degraded Wetlands	◆	◆	◆	◆	◆
Recommendation 6: Ensure Proper Functioning of Septic Systems	◆	◆	◆	◆	
Recommendation 7: Monitor the Croton River	◆	◆			
Recommendation 8: Prevent Illegal Activities that Degrade Water Quality	◆	◆	◆	◆	◆
Recommendation 9: Retain Tree Cover	◆	◆	◆	◆	◆
Recommendation 10: Maintain and Restore Forested Stream Buffers	◆	◆	◆	◆	◆
3.2 Goal: Develop and Implement Stormwater Management Practices that will Improve Water Quality					
Recommendation 1: Develop and Adopt Stormwater Infrastructure Data Management Standards	◆	◆	◆	◆	◆
Recommendation 2: Establish Illicit Discharge Connection Program	◆	◆	◆	◆	◆
Recommendation 3: Develop Stormwa-ter Infrastructure Monitoring and Maintenance Programs	◆	◆	◆	◆	◆
Recommendation 4: Develop Snow and Ice Operational Plan	◆	◆	◆	◆	◆
Recommendation 5: Participate in Household Hazardous waste Collection	◆	◆	◆	◆	◆
Recommendation 6: Pretreat Stormwa-ter Outfall Discharges and Identify Retrofit Opportunities	◆	◆	◆	◆	◆
Recommendation 7: Restore Eroded Streambanks	◆	◆		◆	◆

Figure 4-1. Indian Brook-Croton Gorge Watershed Recommendations, cont.

	Cortlandt	Croton-on-Hudson	New Castle	Ossining (T)	Ossining (V)
3.3 Goal: Promote Sustainable Development Through Land Use and Environmental Regulations					
Recommendation 1: Institute Stormwater Controls for Development	◆	◆	◆	◆	◆
Recommendation 2: Establish Impervious Surface Limits and Alternatives	◆	◆	◆	◆	◆
Recommendation 3: Establish Indian Brook Reservoir Overlay Zone	◆		◆	◆	◆
Recommendation 4: Develop a Croton Aquifer Overlay Zone	◆	◆			
Recommendation 5: Update Comprehensive Plans	◆	◆	◆	◆	◆
Recommendation 6: Protect Open Space	◆	◆	◆	◆	◆
Recommendation 7: Adopt New or Amend Current Ordinances to Reflect Model Environmental Ordinances	◆	◆	◆	◆	◆
3.4 Goal: Preserve and Protect Wildlife and Significant Wildlife Habitats					
Recommendation 1: Prepare a Biodiversity Plan for the Watershed	◆	◆	◆	◆	◆
Recommendation 2: Investigate Croton River Flow Fluctuations	◆	◆	◆	◆	
3.5 Goal: Educate the Public					
Recommendation 1: Require Board/ Committee Member Stormwater Training	◆	◆	◆	◆	◆
Recommendation 2: Develop an Education and Training Program for Highway Personnel	◆	◆	◆	◆	◆
Recommendation 3: Develop and Participate in Community Natural Resource Education Programs	◆	◆	◆	◆	◆

Section 5.0 Appendices

A. Additional Resources (on CD)
Contains more information on the following subjects discussed in the IBCG Plan:

- Soil Descriptions: Contains a detailed map of the soils in the IBCG Watershed, descriptions of the soil types, their soil taxonomy and hydrologic classification and if they are considered hydric soils
- Wetlands: Additional information on wetlands, wetland regulations and regulatory definitions of wetlands
- Surface Water Classifications: Information on the NYSDEC surface water classifications and their definitions
- Indian Brook Streamwalk: Contains the streamwalk report published in 2004
- IBCG Environmental Regulatory Review: Contains the ordinance review document completed in 2004
- Croton River Flow Analysis: Additional material developed by the NYSDEC Hudson River Estuary Program on the issues concerning the current flow of the Croton River
- Water Quality Analysis

B. Methodologies and Analysis (on CD)
Contains more information on the following land use and water quality analysis discussed in the IBCG Plan:

- Land Use Classification;
- Impervious Surface Calculations;
- Existing Field Conditions;
- Non-structural Stormwater Management Practices;
- Water Quality Impairment Model

C. Croton Bay Railroad Tie Removal Study (on CD)

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APPENDIX E: CROTON-ON-HUDSON WATERFRONT REVITALIZATION LOCAL LAW

Chapter 225

WATERFRONT REVITALIZATION

GENERAL REFERENCES

Conservation Advisory Council — See Ch. 12.

Planning Board — See Ch. 40.

Visual Environment Advisory Board — See Ch. 60.

Building construction — See Ch. 86.

Environmental quality review — See Ch. 116.

Flood damage prevention — See Ch. 129.

Steep slopes — See Ch. 195.

Stormwater, drainage, erosion and water pollution control — See Ch. 196.

Wetlands — See Ch. 227.

Zoning — See Ch. 230.

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§ 225-1. Title.

This chapter will be known as the "Village of Croton-on-Hudson Waterfront Consistency Review Law."

§ 225-2. Statutory authority; purpose; legislative intent.

A. This chapter is adopted under the authority of the Municipal Home Rule Law and the Waterfront Revitalization of Coastal Resources and Inland Waterways Act of the State of New York (Article 42 of the Executive Law).

B. The purpose of this chapter is to provide a framework for agencies to consider the policies and purposes contained in the Village of Croton-on-Hudson LWRP when reviewing applications for actions or direct actions located in the Village coastal area and to ensure that such actions are consistent with said LWRP policies, and whenever practicable will advance one or more of them.

C. It is the intention of the Village of Croton-on-Hudson that the preservation, enhancement and utilization of the natural and man-made resources of the coastal area of the Village of Croton-on-Hudson take place in a comprehensive manner to ensure a proper balance between protection of natural resources and the need to accommodate population growth and economic development. Accordingly, this chapter is intended to achieve such a balance, permitting the beneficial use of coastal resources while preventing the following: loss of living estuarine resources and wildlife; diminution of open space areas and of public access to the waterfront; erosion of shoreline; impairment of water quality and scenic beauty; losses due to flooding, erosion and sedimentation; or permanent adverse changes to ecological systems.

§ 225-3. Definitions.

As used in this chapter, the following terms shall have the meanings indicated:

ACTION — Either Type 1 or unlisted actions as defined in the SEQRA regulations (6

NYCRR 617).

AGENCY — Any board, agency, department, office, other body or officer of the Village of Croton-on-Hudson.

COASTAL AREA OR ZONE — The lands and waters within the Village of Croton-on-Hudson's jurisdiction as described in the Local Waterfront Revitalization Program.

COASTAL ASSESSMENT FORM (CAF) — The form, approved by the Village Manager, and on file in the Village Clerk's office, and used by an agency to assist it in determining the consistency of an action with the LWRP.

CONSISTENT — That the action will substantially comply with the LWRP policies and, whenever practicable, will advance one or more of them.

DETERMINATION OF CONSISTENCY — The written decision that is made regarding whether the action substantially complies with the LWRP policies and whenever practicable will advance one or more of them.

DIRECT ACTION — An action planned and proposed for implementation by an agency.

LEAD AGENCY — An involved agency under SEQRA principally responsible for undertaking, funding or approving an action, and therefore responsible for determining whether an environmental impact statement is required in connection with the action and for the preparation and filing of the statement if one is required, in accordance with SEQRA.

LOCAL WATERFRONT REVITALIZATION PROGRAM (LWRP) — The local program approved by the Secretary of State pursuant to the Waterfront Revitalization of Coastal Areas and Inland Waterways Act (Executive Law Article 42), a copy of which is on file in the office of the Village Clerk of the Village of Croton-on-Hudson.

RECOMMENDATION OF CONSISTENCY — The recommendation that is made by the WAC regarding whether the action substantially complies with the LWRP policies and whenever practicable will advance one or more of them.

SEQRA — The State Environmental Quality Review Act, codified as Article 8 of the Environmental Conservation Law, and its implementing regulations, 6 NYCRR Part 617.

WATERFRONT ADVISORY COMMITTEE (WAC) — The Committee that will make a recommendation of consistency regarding an action.

§ 225-4. Management and coordination of LWRP.

A. The lead agency shall be responsible for coordinating review of actions in the Village of Croton-on-Hudson's coastal zone for consistency with the LWRP policies.

B. The WAC will advise, assist and make recommendations of consistency to the lead agency in its review of actions and in the implementation of the LWRP, its policies and projects.

C. The Village Board with the assistance of the WAC shall coordinate with the New York State Department of State regarding consistency review of actions by federal

agencies and with state agencies regarding consistency review of their actions.

D. The WAC shall assist the Village of Croton-on-Hudson Board of Trustees in making applications for funding from state, federal or other sources to finance projects included in the LWRP.

E. The WAC will consist of five members appointed on a yearly basis by the Mayor, consisting of members of the Board of Trustees, the Water Control Commission, the Planning Board and, at the Mayor's discretion, the Village's environmental consultant. The Board of Trustees, the Water Control Commission and the Planning Board shall each be represented on the WAC by at least one and no more than two members. The Mayor shall appoint the Chairperson on a yearly basis.

F. Any vacancy shall be filled by the Mayor for the balance of the expired term within 60 days, or as soon as practicable thereafter, of receiving notice of the vacancy.

G. The WAC may request that the referring agency retain a consultant to assist in its review pursuant to Chapter 178 of the Village Code. The Chairperson of the WAC shall submit the request for retaining a consultant to the referring agency.

H. The members of the WAC shall serve without compensation and shall be charged with the duties as set forth in this chapter.

I. For conducting business, including making a recommendation of consistency, a quorum shall consist of three members of the WAC.

§ 225-5. Review of actions required.

A. Prior to approving, funding or undertaking a proposed action located within the Village of Croton-on-Hudson coastal zone, the lead agency shall make a determination of consistency.

B. An application to a Village of Croton-on-Hudson agency for approval or funding of an action shall be accompanied by a coastal assessment form (CAF) and other required documents.

§ 225-6. Consistency review.

A. Lead agency.

(1) Whenever a Village agency declares itself lead agency regarding a proposed action in the Village's coastal zone, the agency shall refer a copy of the CAF and any other required documents to the WAC within 10 days. Prior to the lead agency making its determination of consistency, it shall consider the recommendation of the WAC with reference to the determination of consistency of the proposed action with the LWRP policies.

(2) Whenever a Village agency is an involved agency under SEQRA and not the lead agency for a proposed action in the Village's coastal zone, either the Village Board of Trustees, the Planning Board, the Zoning Board of Appeals, or the Water Control Commission shall be deemed the lead agency under this chapter. If multiple Village agencies are involved agencies, the lead agency under this chapter will be determined in the order stated above.

B. After referral from the lead agency, the WAC shall review the CAF and other required documents and make a recommendation to the lead agency regarding the action's consistency with the LWRP policies.

(1) The WAC shall render its written recommendation of consistency to the lead agency within 30 days of receiving the referral of the CAF and any other required documents. The WAC may request an extension of time in order to obtain more information or more documentation, or the need to hire a consultant from the lead agency, in order to render its written recommendation of consistency. The extension of the time shall be by mutual agreement of the lead agency and applicant.

(2) The WAC's recommendation shall indicate whether the proposed action is consistent with or inconsistent with one or more of the LWRP policies and shall elaborate, in writing, the basis for its opinion. The WAC shall, along with its recommendation of consistency, make any suggestions to the lead agency concerning modification of the proposed action, including recommending conditions of approval, to make it consistent with the LWRP policies or to greater advance one or more of them.

(3) In the event that the WAC's recommendation of consistency is not forthcoming within the specified time, the lead agency shall make its determination of consistency without the benefit of the WAC's recommendation of consistency.

C. Upon receipt of the WAC's recommendation of consistency, the lead agency shall consider whether the proposed action is consistent with the LWRP policies. The lead agency shall consider the WAC's recommendation of consistency, the CAF and other relevant information in making its determination of consistency. No approval or decision shall be rendered for an action in the coastal area without a determination of consistency having first been adopted by the lead agency. The lead agency shall circulate its determination to all other involved agencies.

D. Where an environmental impact statement (EIS) is being prepared or required, the draft EIS must identify applicable LWRP policies and include a discussion of the effects and impacts of the proposed action on such policies.

E. The lead agency which is making a determination of consistency for direct actions must also review consistency with Section IV of the LWRP, in making its consistency determination.

F. Recommendation of consistency.

(1) The WAC's recommendation of consistency shall indicate whether, in its opinion, the proposed action is consistent or inconsistent with the LWRP policies. The recommendation of consistency shall address:

(a) Potentially significant adverse impacts on coastal area resources and the consistency of the action with the LWRP policies.

(b) Alternative actions which would avoid the potential significant adverse impacts on coastal resources and ensure consistency with the LWRP policies.

(c) Measures to mitigate potential significant adverse impacts on coastal resources and resolve inconsistencies with LWRP policies.

(2) The WAC shall approve its recommendation of consistency by a majority vote of a quorum of its members.

G. In the event the WAC's recommendation of consistency is that the action is inconsistent with the LWRP policies, and the lead agency makes a contrary determination of consistency, the lead agency shall elaborate, in writing, the basis for its disagreement with the WAC's recommendation of consistency and state the manner and extent to which the lead agency believes that the action is consistent with the LWRP policies.

H. If the lead agency finds that the action is not consistent with one or more of the LWRP policies, the action shall not be undertaken, approved or funded unless the lead agency makes a written finding that, on balance, the action should nevertheless be undertaken, approved or funded, taking into consideration each of the following factors listed below. Such a finding shall be a prerequisite to a determination of consistency with the LWRP policies.

(1) No reasonable alternatives exist to the proposed action which would permit the action to proceed in a manner that is consistent with the LWRP policies.

(2) The action would be undertaken in a manner which will minimize inconsistencies with LWRP policies.

(3) The action will advance one or more of the other LWRP policies or proposed projects.

(4) The action will result in an overriding Village, regional or statewide public benefit.

I. The lead agency shall have the authority, in its determination of consistency, to impose reasonable conditions on an action to ensure that it is carried out in accordance with this chapter and the LWRP.

§ 225-7. Enforcement.

No work or activity on a project in the Village which is subject to review under this chapter shall be commenced or undertaken until the Village Engineer has been presented with a written determination of consistency from the lead agency except for direct actions. In the event that an activity is not being performed in accordance with this chapter or any condition imposed thereunder, the Village Engineer shall issue a stop-work order, and all work shall immediately cease. No further work or activity shall be undertaken on the project so long as a stop-work order is in effect.

§ 225-8. Penalties for offenses.

A. A person who violates any of the provisions of or who fails to comply with any condition imposed by this chapter shall have committed a violation, punishable by a fine. For the purpose of conferring jurisdiction upon courts and judicial officers, each week of continuing violation shall constitute a separate additional violation.

B. The Village Attorney is authorized and directed to institute any and all actions and proceedings necessary to enforce this chapter. Any civil penalty shall be in addition to and not in lieu of any criminal prosecution and penalty.

§ 225-9. Severability.

If any provision of this chapter shall be held for any reason to be invalid, such determination shall not invalidate any other provision hereof.

§ 225-10. When effective.

This chapter shall take effect immediately filing with the office of the Secretary of State.