Chapter 5: Natural Resources

A. PROPOSED ZONING ACTION (GENERIC ANALYSIS)

EXISTING CONDITIONS

The Proposed MOD Zoning Area is 105 acres in size and is largely developed with a suburban character. Due to its suburban development patterns and former agricultural use, the MOD Zoning Area has few undisturbed, natural habitats remaining and most land is occupied by buildings, residential homes, lawns and landscaped areas as well as roads and driveways.

The largest contiguous area of underdeveloped land is the proposed Evergreen Manor site located in the central and eastern portion of the MOD Zoning Area. This 28.6 acre site contains several buildings, three small wetlands, meadows, wooded areas and manicured lawn. A small, narrow area of undeveloped land is also located on the proposed Gyrodyne site in the southwestern portion of the MOD located roughly between Buttonwood and Lafayette Avenues. This area contains a small pond (Orchard Lake) surrounded by woody vegetation.

The U.S. Fish and Wildlife Service maintains a list of endangered (E) and threatened (T) species in addition to candidate (C) species found in Westchester County. The list includes the Indiana Bat (E), Northern Long-Eared Bat (T) and the Bog turtle (T). According to the New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper and Hudson Valley Resource Mapper, the MOD Zoning Area does not fall within an area displayed in the Rare Plants and Rare Animals layer or in the Significant Natural Communities layer and there are no records to report. A Hudson Valley significant biodiversity area (SBA) is located in the northern portion of the MOD Zoning Area to the rear of the NYPH property surrounding McGregor Brook. This stream corridor runs between the Beach Shopping Plaza to the north and the NYPH Campus to the south and is identified as a landscape area in the Hudson River Estuarine Watershed that has a high concentration of biodiversity or other unique ecological features.

FUTURE WITHOUT THE PROPOSED ACTION (NO-BUILD CONDITION)

In the Future without the Proposed Action, it is expected that the MOD Zoning Area would remain largely unchanged.

PROBABLE IMPACTS OF THE PROPOSED ZONING (BUILD CONDITION)

The Proposed MOD Zoning is not anticipated to adversely impact natural resources in the Town of Cortlandt as it does not directly authorize a specific development. The impacts to Natural Resources would be dependent on subsequent site plans once parcels receive a MOD designation. A MOD designation would allow new uses and higher densities than currently allowed under existing zoning. All projects proposed under MOD Zoning would be required to complete a site-specific SEQR analysis to identify the potential for specific impacts on natural resources. While the Proposed MOD

Zoning could result in new development at higher densities than currently allowed under existing zoning, this would not be expected to result in any significant adverse impacts to natural resources due to the existing developed character of the MOD Zoning Area and the limited amount of contiguous, undisturbed land available to provide habitat for plant and animal species. Therefore, new development resulting from the Proposed MOD would not be expected to result in any significant adverse impacts to natural resources.

MITIGATION

All projects proposed under MOD Zoning would be required to complete a site-specific SEQR analysis to identify the potential for specific impacts on natural resources. If any impacts are identified modification to the project or mitigation would be required to avoid or lessen the potential for significant adverse impacts.

B. MOD DEVELOPMENT PLAN

EXISTING CONDITIONS

EVERGREEN

A natural resource inventory and biodiversity assessment was completed for the 28.9-acre Evergreen Manor Project Site by Stephen W. Coleman Environmental Consulting, LLC in 2006 and updated based on survey work completed during the months of April through August 2017. The natural resource inventory and biodiversity assessment surveyed mammals, breeding birds, amphibians, reptiles and plant groups including trees, shrubs, wildflowers, grasses and grass-like plants. Special emphasis was placed on the identification of potential endangered, threatened, and special concern species. Existing vegetative communities were described, mapped, and analyzed to determine the habitat values, functions, restoration opportunities, and overall attractiveness to support environmentally sensitive species.

Site Description

The Evergreen Manor Project Site consists of residential dwellings, manicured lawns, a pond/forested wetland, hillside slope seepage wetlands and deciduous uplands. The property is bordered to the north by Route 202/35/Crompond Road, to east and south by residential subdivisions, and to the west by Lafayette Road and residential dwellings. Except for the northwestern corner and western border of the site, the northern half of the property consists mostly of formerly manicured lawns, an existing structure, and an abandoned swimming pool. An emergent scrub-shrub type wetland exists in the northwestern corner of the property. The western border of the northern half of the property consists of open meadows and shrub dominated areas. The southern half of the property contains meadows, a pond surrounded by a fence, deciduous forest, a small wetland depression, hillside seepage wetlands, a small stream, and a sizeable forested wetland. The lawn area to the east of the existing driveway receives drainage from the hillside to the south and drains to the property adjacent to Route 202/35/Crompond Road. Wetlands on the Evergreen Manor Project Site are described in greater detail in Chapter 6, Surface Water Resources and Wetlands.

A significant amount of debris from prior land uses and residential activities is still present. A majority of the wetland buffer in the southern half of the property consists of several extensive debris piles of materials from former residential activities. Much of the existing understory

vegetation in and around the perimeter of the outbuildings consists of well-established invasive plant species. As recently as 1990, most of the northern half of the site (which represents most of the area to be developed) was maintained as lawn and managed landscape (**See Figure 5-1**).

Plant Communities

The predominant plant communities present on the subject parcel consist of a deciduous forest, a forested wetland system including a small stream, hillside seeps, a depressional wetland, open water pond and forested wetland habitat, and remnant lawn areas. These plant communities are still present and viable as noted in the prior study of the property. In 2006 the depressional wetland was described as a vernal pool. Based upon field evidence, this area no longer appears to meet these criteria.

i. Mature Mesophytic Lowland Forest:

The overall forested community present on the property, in general, will be classified as a "Mature Mesophytic Lowland Forest" habitat that has been extensively studied and characterized by Kiviat and Stevens "Biodiversity Assessment Manual for the Hudson River Estuary Corridor", 2001, and further described in the publication "Ecological Communities of New York State (Reschke, 1990). Reschke further describes this as a forest community that is dominated by oak and tulip trees and classified as a mesophytic hardwood forest that occurs on moist, well-drained soils. Dominant tree species observed include red oak *(Quercus rubra),* black oak *(Quercus velutina),* sugar maple *(Acer saccharum),* American beech *(Fagus Americana),* tulip tree *(Liriodendron tulipifera),* white ash *(Fraxinus americana),* shagbark hickory *(Carya ovata),* pignut hickory *(Carya glabra),* hemlock *(Tsuga Canadensis),* black birch *(Betula lenta),* and sassafras (Sassafras *alibidum).* Understory trees that were present consisted of smaller individuals of the same species as the dominant trees. The shrub layer was represented by spicebush *(Lindera benzoin),* witch-hazel *(Hamamelis virginiana),* and arrowood viburnum *(Viburnum dentatum).* Common ground layer species observed include Christmas fern *(Polystichum acrostichoides),* garlic mustard *(Aiiaria petiola),* Virginia creeper *(Parthenocissus quinquefolia),* wood ferns *(Dryopteris* spp.), and white wood aster *(Aster divaricatus).*

The canopy coverage is fairly complete, although there are several areas where dead or fallen trees have created openings in the canopy. The understory consists of a dense assemblage of invasive shrubs, and vines of species in amongst significant debris piles. Where there is less disturbance the understory is relatively sparse and open, representative of typical more mature forested conditions in this type of vegetative community and due to the amount of deer browse present. The forest floor consists of a minimal duff or leaf litter layer. A minimal amount of rock outcrops and boulders were observed. Remnant stonewalls are apparent throughout the property.

ii. Forested Riparian Wetland Complex:

The wetlands were delineated on the subject property in August 2016 in accordance with Chapter 179 "Freshwater Wetlands" of the Town of Cortlandt. The respective wetland areas located on the subject property are similar in size and location to the wetland boundaries previously delineated in 2005.

The property contains a large forested wetland complex that includes a pond, depressional pocket wetland, small stream, and scrub-shrub emergent hillside seep area. Riparian forested wetlands were observed to be present immediately adjacent to the watercourse. The wetland complex receives hydrological support from its juxtaposition in the landscape, receiving surface water runoff from

Figure 5-1
1990 AERIAL PHOTO

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Not to Scale

N

adjacent slopes, the watercourse, and some groundwater discharge from the adjoining slope interface.

The forested wetland is similar to the red maple-hardwood swamp community as described by Reschke (1990). Red maple is the dominant tree and sapling species within the wetland on the subject parcel. Other dominant tree species observed included American elm *(Ulmus Americana).* Several upland tree species were also observed along the outer edges of the wetland. The shrub layer consisted predominately of spicebush, silky dogwood *(Comus* amomum), and winterberry (*Ilex verticillata).* Ground layer species observed included skunk cabbage (*Symplocarpus foetidus),* sensitive fern *(Onoclea sensibilis),* sphagnum moss *(Sphagnum spp.),* cinnamon fern *(Osmunda cinnemomea),* garlic mustard, and a variety of sedges (Carex *spp.).* The canopy coverage for this wetland is fairly uniform and closed with some scattered pockets that allow for successful establishment of shrubs and herbaceous vegetation. Included within this complex is a man-made pond at the edge of a large forested wetland in the southern section of the property. The pond is a shallow pond with approximate depths of 4-5 feet in the middle of the pond, the edges of the pond consist mostly of invasive shrub species and grasses and is defined by remnant stone walls. The emergent forested wetland in the southwestern corner has reverted to more of an emergent wetland with shrub species becoming more dominant. The amount of open water area has significantly reduced in area since the prior assessment.

Natural Resource Inventory

Breeding Bird Survey – Methods and Results

The principle survey method involved time-constrained, systematic physical ground searches along random transects throughout each of the habitat types. Unless noted, all species listed were documented through direct observation. Direct observation included visual as well as auditory observation, and evidence of avian activity such as feathers, droppings, tracks, scrapings, and bones. Surveys were conducted between sunrise and two hours after sunrise and/or one hour before and after sunset. All birds observed were identified and recorded to genus and species name. No birds or bird evidence observed during the investigation were collected as voucher specimens. The breeding bird survey was conducted from May 17, 2017 through June 7, 2017 for a total of 12 hours. The analysis of the data from four separate site visits help provide a picture of the number of breeding pairs throughout the study site. An individual singing male needed to be recorded a minimum of 2 times to be counted as a probable breeding pair.

A total of five (5) forest interior species were observed to be present within the study area. Forest interior species were observed utilizing some of the older aged forested sections of the property and throughout sections of the forested wetland complex. These areas are suitable habitat to encourage breeding and subsequent nesting and rearing of young. The forested sections although intact have been impacted from development on all four sides of the property. This consists of a combination of road networks, commercial and residential developments which restrict the diversity of forest interior species observed. None of the species identified are listed as threatened or endangered in New York State, or Westchester County. The five forest interior species observed within the project area include:

- Scarlet Tanager
- Red-eyed Vireo
- Eastern Wood-Pewee

- Black-capped Chickadee
- Hairy Woodpecker

The younger sections of the forest, openings within the forested and riparian wetlands, and the edges of the forest closest to existing residential properties, has encouraged the successful establishment of stable common and more adaptable transition and edge type bird species. Forest interior species were also observed within the more disturbed sections of the property.

A total of thirty-eight (38) different bird species were observed within the general study area during the spring/summer season. Approximately twenty-six (26) of these species represent summer resident breeding bird species. The regional complex of forested lands, road networks, residential developments and prior land use practices of the subject parcel have created significant fragmentation and overall site disturbances that has reduced the attractiveness of the available habitat for breeding and rearing of young for more regional environmentally sensitive species. Thirty-eight different bird species observed and a possible 26 breeding bird species is considered below average for spring migration and nesting throughout the Westchester area. The amount of site disturbance has favored more adaptable and edge type species. Since 2006, the subject property has shown a reduction in the number of more sensitive forest breeding bird species that utilize the site. This finding correlates with a regional trend in the reduction of several forest interior and grassland bird species. Based upon the results of the breeding bird survey and spring migration data, the study site's capability to support populations of rare and environmentally sensitive forest interior species has become more compromised. **Table 5-1** below provides information on avian species that were observed as a result of the spring 2017 census.

Table 5-1
Evergreen Manor Avian Species

Common Name	Scientific Name
Rock Dove	*Columbia livia*
Morning Dove	*Zenaida Macroura*
Downy Woodpecker	*Picoidis Pubescens*
Hairy Woodpecker	*Picoidis villosus*
Northern Flicker	*Colaptes auratus*
Red-Bellied Woodpecker	*Melanerpes carolinus*
Eastern Wood Peewee	*Contopus virens*
Eastern Pheobe	*Sayornis pheobe*
Blue Jay	*Cyanocitta cristata*
American Crow	*Corvus brachyrhynchos*
Wood Thrush	*Hylocichla mustelina*
Veery	*Catharus fuscescens*
American Robin	Turdus migratorius
Gray Catbird	Dumetella carolinensis
Northern Mockingbird	Mimus polyglottos
Red eyed vireo	Vireo olivaceus
Ovenbird	Seiurus aurocapillus

Blue winged Warbler	Vermivora pinus
Common Yellowthroat	Geothlypis trichas
Yellow Warbler	Dendroica petechia
Scarlet Tanager	Piranga olivacea
Northern Cardinal	Cardinalis cardinalis
Rufous-sided Towhee	Piplio erythrophthalmus
Indigo Bunting	Passerina cyanea
Chipping Sparrow	Spizella carolina
Song Sparrow	Milospiza melodia
White-throated Sparrow	Zonatrichia albicollis
Dark-eyed Junco	Junco hyemalis
Red-winged Blackbird	Agelaius phoeniceus
Common Grackle	Quiscalus quiscula
Brown-headed Cowbird	Molothrus ater

Amphibians and Reptiles Survey – Methods and Results

Surveys for amphibians and reptiles took place on May 12, and June 09, 2017. A total of 8 hours were spent in the field. Field inventory techniques included visual searches of downed logs, stumps, leaf litter, and rock piles to determine the presence or absence of individual species, examination of cover types, frog sounds and calls, larval sampling, and identification of egg masses. A detailed description of amphibian and reptile survey techniques can be found in Klemens (1993). A total of fourteen (14) species, (10 amphibians and 4 reptiles) were documented at the property (**see Table 5-2**). Of the species identified, only one species, the Eastern Box turtle *(Terrapene carolina carolina),* is a NYS Species of Special Concern.

Table 5-2
Evergreen Manor Amphibian and Reptile survey

Common Name	Scientific Name
Eastern American Toad	*Bufo americanus americanus*
Gray Tree Frog	*Hyla versicolor*
Green Frog	*Ranas clamitans melanota*
Northern Spring Peeper	*Pseudocris crucifer crucifer*
Pickerel Frog	*Rana palustris*
Bullfrog	*Rana catesbeiana*
Wood Frog	*Rana sylvatica*
Red-Spotted Newt	*Notophthalmus viridescens*
Spotted Salamander	*Ambystoma maculatum*
Northern Two-lined Salamander	*Eurycea bislineata*
Painted Turtle	*Chrysemys picta*
Eastern Box Turtle	*Terrapene carolina carolina*
Snapping Turtle	*Chelydra serpentine serpentine*
Eastern Garter Snake	*Thamnophis sirtalis sirtalis*

The Evergreen Manor Project Site still has a good representation of amphibian and reptile species, considering both the size of the property and surrounding land use. Since the original survey in 2006, there is a noted reduction in the number of individual species observed and also the number of environmentally sensitive species that were previously observed. Only one species of special concern was observed on the site; the eastern box turtle. Two vernal pool indicator species were found in very limited numbers within the upland areas near the forested wetland in the southwestern corner of the property (spotted salamander, and wood frog). Only one of each species were observed. The low number of sightings is potentially due to drought conditions present during the field investigations, the limited amount of upland habitat currently available to adults of these species, and the loss of native plant species diversity within upland forested areas. The following field notes were taken regarding species observed:

- Spotted Salamander *(Ambystoma maculatum)* - One spotted salamander was observed along the edge of the forested wetland. No egg masses were observed. Intensive searching did not reveal any larvae to be present. The habitat conditions were noticeably different from the original survey in 2006.
- Northern Two-Lined Salamander *(Eurycea bislineata)* -Three individuals of this more common species were observed at the site. These individuals were found under rocks in the stream course that feeds into the forested wetland in the northwestern corner of the parcel.
- Red-Spotted Newt *(Notophthalmus viridescens viridescens)* - One adult newt was observed at the site near the old abandoned swimming pool area to the west of the main residence.
- American Toad *(Bufo americanus)* - American toads were observed within the edge of the forested wetland. Two individuals were observed.
- Gray Treefrog *(Hyla versicolor)* - Several gray treefrogs were heard calling from trees surrounding the forested wetland.
- Bullfrog *(Rana catesbeiana)* - Two adult bullfrogs were observed in the fenced-in pond.
- Green Frog *(Rana clamitans melanota)*- Several green frogs were observed in both the fenced-in pond and along the edge of the forested wetland. Males were observed calling in both areas.
- Northern Spring Peeper *(Pseudoacris crucifer crucifer)* - Two spring peepers were observed in the wooded upland between the pond and the forested wetland.
- Pickerel Frog *(Rana palustris)* -One pickerel frog was observed in a wet lawn/meadow area in between the pond and forested wetland.
- Wood Frog *(Rana sylvatica)* - A total of one adult male wood frog was observed in the wooded upland of the southern half of the property. No tadpoles were observed in the forested wetland.
- Snapping Turtle *(Chelydra serpentina serpentina)* -A small single adult snapping turtle was observed in the fenced in pond area.
- Painted Turtle *(Chrysemys picta)* - One painted turtle was observed within the fenced in pond area and one identified in the rear of the forested wetland on adjacent property.
- Eastern Box Turtle *(Terrapene carolina carolina)* - One box turtle was observed on the property. A male was found in the wet meadow/lawn area in between the pond and the

forested wetland. The eastern box turtle is a species of special concern in the state of New York.

- Eastern Garter Snake (*Thamnophis sirtalis sirtalis)* - A total of three garter snakes were observed throughout the site. Individuals were found in the dump/junk piles located to the north of the forested wetland and along the stone walls near the center of the property.

Mammal Survey- Methods and Results

Mammals were surveyed by active ground searches looking for evidence of any animal activity. The primary survey method involved time-constrained, systematic physical ground searches along random transects throughout each of the habitat types. Unless noted, all species listed were documented through direct observation. Direct observation included visual as well as auditory observation, and evidence of animal signs such as fur, tracks, droppings, scrapings, and bones. Surveys were conducted either between sunrise and two hours after sunrise, mid-day, and/or one hour before and after sunset. All animals observed were identified and recorded to genus and species name. No animals or animal evidence observed during the investigation were collected as voucher specimens. The mammal survey was conducted from May 12 through August 24, 2107. Weather conditions were conducted during optimal field conditions, sunny, warm conditions with average temperature in the mid 70's F.

Field investigation confirmed the presence of thirteen (13) different mammal species on the project site (**see Table 5-3**). Gray squirrels, eastern chipmunks, white-tailed deer, raccoons and deer mice were the most commonly observed mammals. Deer were especially abundant as evidenced by numerous well-worn trails, bedding areas and abundant droppings and significant evidence of browse. Chipmunks and gray squirrels were most common along stonewalls and rock outcrops, throughout the forested sections, and along wetland corridors. Raccoons sign was observed primarily along the stream corridor and within the wetland. Existing mammal populations are average and represented by species that will be considered common and readily observed within northern Westchester County. The species observed are more generalists and more adaptable to disturbed and fragmented habitats. No environmentally sensitive mammal species were observed to be present. It is likely that coyotes may be using the area, although no specific sightings or signs were observed.

Table 5-3
Mammal Species

Common Name	Scientific Name
Short-tail Shrew	*Blarina brevicauda*
Eastern Cottontail	*Sylvilagus floridanus*
Eastern Chipmunk	*Tamias striatus*
Woodchuck	*Marmota monax*
Gray Squirrel	*Sciurus carolinensis*
Southern Flying Squirrel	*Glaucomys volans*
White-footed Mouse	*Peromyscus leucopus*
Meadow Vole	*Microtus pennsylvanicus*
Opossum	*Didelphis virginiana*

Raccoon	*Procyon lotor*
Striped Skunk	*Mephitis mephitis*
Red Fox	*Vulpes vulpes*
White-tailed Deer	*Odocoileus virginianus*

The subject property was also evaluated for potential to support both the Indiana Bat *(Myotis sodalis),* and the Northern Long-eared Bat *(Myotis septentrionalis).* The Indiana Bat is a federally and state listed endangered species, and the Northern Long-eared bat is a federally and state listed threatened species. As per NYSDEC and Federal database records, there are no known winter hibernacula for either species and no confirmed breeding records for Westchester County. Due to the type of general habitat requirements for both species, the subject property meets the criteria as potential summer feeding and roosting habitat. Therefore, the potential threat to bats that could occur on the site due to the proposed development will be direct mortality of the bats if trees are removed during the summer roosting season. The USFWS issued a final rule for the Northern long-eared bat in 2016. NYSDEC also has developed additional mandatory and voluntary restrictions to avoid impacts during the summer months when bats may be present in roost trees. The guidelines from both agencies also apply to the Indiana Bat.

Botanical Survey – Methods and Results

The vegetative survey involved direct field identification of plants observed within the project study area. Inventory included random linear searches throughout the project impact area. All plants that could be visually observed and identified were recorded. The entire project impact area was surveyed to observe all plants present. Plants were identified by flower type and floral structure, by plant type, and leaf shape and arrangement. Plants were identified in both flowering and non-flowering conditions. When necessary, individual plants were collected if they required laboratory verification to specific species. Individual plants were identified by common name and scientific name (genus and species). The NYSDEC's publication "New York State Endangered, Threatened and Special Concern Species 1998, was used as the definitive list for determining whether any plants observed on the study area will be considered Endangered, Threatened or Special Concern status. The vegetative survey was conducted from May 12 to August 24, 2017.

The results of the field survey found no endangered, threatened or special concern status plant species within the proposed study area. Several environmentally sensitive plant species were observed during the inventory but none that were on the published list. A total of one hundred fifteen (115) plant species were observed to be present throughout the study area (**see Table 5-4**)**.** This represented 28 species of trees, 18 species of shrubs and vines, and 69 species of forbs (wildflowers, ferns, grasses and grass-like plants). The current and past land use practices within the study area and immediate adjacent areas, has resulted in a disturbed forest composition and community structure, relatively low species diversity and significant evidence of human disturbances typical of sites close to major road networks and residential developments throughout Westchester County. Several invasive plant species have become very dominant and well established primarily within the wetland edges and open meadow portions of the property.

Table 5-4
Plant Species

Forbs (wildflowers, ferns, grasses and grass-like plants)	
Common Name	**Scientific Name**
Garlic mustard	*Alliaria petiolata*
Pigweed	*Amaranthus spp.*
Ragweed	*Ambrosia spp.*
Broom sedge	*Andropogon virginicus*
Wood anemone	*Anemone quinquefolia*
Spreading dogbane	*Apocynum androsaemifolium*
Wild columbine	*Aquilegia canadensis*
Common Milkweed	*Asclepias syriaca*
Jack-in-the-pulpit	*Arisaema atrorubens*
White wood aster	*Aster divaricatus*
Wood Aster	*Aster spp.*
Lady Fern	*Athyrium filix-femina*
Comosa sedge	*Carex comosa*
Carex spp.	*Carex intumescens*
Laxiflora sedge	*Carex laxiflora*
Lurid Sedge	*Carex lurida*
Pennsylvania sedge	*Carex pensylvanica*
Tussock Sedge	*Carex stricta*
Celandine	*Chelidonium majus*
Lamb's quarters	*Chenopodium album*
Oxeye daisy	*Chrysanthemum leucanthemum*
Enchanter's nightshade	*Circaea quadrisulcata*
Virgin's Bowers	*Clematis virginiana*
Hay-scented fern	*Dennstaedtia punctilobula*
Naked Tick Trefoil	*Desmodium nudiflorum*
Deptford pink	*Dianthus armaria*
Marginal Wood Fern	*Dryopteris marginalis*
New York Fern	*Dryopteris noveboracensis*
Wood Fern	*Dryopteris spp.*
Daisy fleabane	*Erythronium americanum*
Trout lily	*Fescue elatior*
Meadow fescue	*Erigeron annuus*

Wild strawberry	*Fragaria virginiana*
Marsh bedstraw	*Galium palustre*
Wild geranium	*Geranium maculatum*
Yellow avens	*Geum aleppicum*
Gill-over-the-ground	*Glechoma hederacea*
Jewelweed	*Impatiens capensis*
Wild morning glory	*Ipomoea spp.*
Soft rush	*Juncus effusus*
Path rush	*Juncus tennuis*
Rice Cutgrass	*Leersia oryzoides*
Purple loosestrife	*Lythrum salicaria*
Wild mint	*Mentha arvensis*
False Solomon's Seal	*Mianthemum racemosum*
Japanese stilt grass	*Microstegium vimeneum*
Indian Pipe	*Monotropa uniflora*
Sensitive Fern	*Onoclea sensibilis*
Cinnamon Fern	*Osmunda cinnamomea*
Royal Fern	*Osmunda regalis*
Deer-tongue grass	*Panicum clandestinum*
Wild blue phlox	*Phlox divaricata*
Common reed	*Phragmites communis*
Pokeweed	*Phytolacca americana*
Clearweed	*Pilea pumila*
Kentucky bluegrass	*Poa pratensis*
Pinkweed	*Polyganum pennsylvanicum*
Christmas fern	*Polystichum acrostichoides*
Selfheal	*Prunella vulgaris*
False Solomon Seal	*Smilacina racemosa*
Deadly nightshade	*Solanum dulcamara*
Canada goldenrod	*Solidago canadensis*
Sphagnum moss	*Sphagnum spp.*
Chickweed	*Stellaria alsine*
Skunk cabbage	*Symplocarpus foetidus*
Tall meadow rue	*Thalictrum polyganum*
Marsh fern	*Thelypteris thelypteroides*
White clover	*Trifolium repens*

False hellebore	*Veratrum viride*
Shrubs & Vines	
Common Name	Scientific Name
Japanese Barberry	*Berberis thunbergii*
Oriental bittersweet	*Celastrus orbiculatus*
Silky dogwood	*Cornus amomum*
Winged Euonymus	*Euonymus atropurpurea*
Forsythia	*Forsythia spp.*
Winterberry	*Ilex verticillata*
Spicebush	*Lindera benzoin*
Morrows Honeysuckle	*Lonicera morrowii*
Virginia Creeper	*Parthenocissus quinquefolia*
Brambles	*Rubus spp.*
Poison Ivy	*Rhus glabra*
Blackberry	*Ribes allegheniensis*
Multiflora Rose	*Rosa multiflora*
Wineberry	*Rubus phoenicolasias*
Greenbrier	*Smilax spp.*
Steeplebush	*Spiraea tomentosa*
Arrowwood viburnum	*Viburnum dentatum*
Fox Grape	*Vitis spp.*
Trees	
Common Name	Scientific Name
Norway Maple	*Acer platanoides*
Red Maple	*Acer rubrum*
Sugar Maple	*Acer saccharum*
Black Birch	*Betula lenta*
Ironwood	*Carpinus caroliniana*
Pignut Hickory	*Carya glabra*
Shagbark Hickory	*Carya ovata*
American Beech	*Fagus grandifolia*
White Ash	*Fraxinus americana*
Witch Hazel	*Hamamelis virginiana*
Eastern Red Cedar	*Juniperus virginiana*
Tulip Poplar	*Liriodendron tulipifera*
Cottonwood	*Populus deltoides*

Norway Spruce	*Picea abies*
White Pine	*Pinus strobus*
Black Cherry	*Prunus serotina*
White Oak	*Quercus alba*
Catalpa	*Catalpa speciosa*
Japanese Maple	*Acer palmatum*
Sweet Gum	*Nyssa sylvatica*
Magnolia	*Kobus virginiana*
Arborvitae	*Thuja occidentalis*
Red Oak	*Quercus rubra*
Pin Oak	*Quercus palustris*
Black Locust	*Robinia pseudocacia*
Sassafras	*Sassafras albidum*
Eastern Hemlock	*Tsuga canadensis*
American Elm	*Ulmus americana*

The results of the Natural Resource Inventory demonstrate that the study area in the past 10+ years has undergone natural changes that have impacted the structure of existing plant communities and what appears to be a cumulative change to existing hydrology. These cumulative changes have had a corresponding impact on the numbers and population dynamics of existing wildlife populations. Certain habitat components are no longer present, or the composition has changed, which has impacted the presence of environmentally sensitive species. In general, the species robustness of the site observed from prior surveys no longer appears to operate at the same level of individuals of each species observed, and/or the overall species diversity. The natural resource inventory data shows an overall reduction in the number of individuals of species as well as the number of species represented.

The wetland resources, specifically the emergent/forested wetland complex in the southwestern corner, has undergone a significant transformation from an open water pond/emergent wetland from prior survey records to more of an emergent, scrub-shrub type habitat with minimal open water. This successional change to the wetland composition may have had a corresponding impact on the attractiveness of the area to support a diverse population of wetland dependent species. In 2015-2017, the region experienced significant drought conditions, which may have also contributed to the plant community changes and the reduction in species diversity. In particular, only one species of special concern was observed at the site, whereas in prior studies, three species of special concern were observed to be present within the wetland complex.

Despite the changes to habitats and species, the subject property is still well represented with focal species and groups. The changes noted above are a concern, and this pattern does correlate to regional changes that have also occurred demonstrating an overall reduction in species diversity and changes to wildlife population density.

Figure 5-2

Gyrodyne Aerial Photo

Medical Oriented District
Draft Generic Environmental
Impact Statement

Not to scale

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

N

TOWN OF CORTLANDT SEAL NEW YORK

The number of amphibian and reptile species observed at the site (14 species) is still considered above average and representative of the diversity of habitats. The reduction in numbers may be attributed to the cumulative impact of forest fragmentation that has occurred around the perimeter of the property, which may be reducing individual numbers as well as the ability of the site to support more environmentally sensitive species, such as vernal pool species that were relying more on the prior open water emergent wetland system that was prevalent ten plus years ago. No breeding was observed within the wetland area as previously noted, despite being present at the right time of year to observe.

Other focal groups on average have shown a reduction in more environmentally sensitive species in favor of species that are more adaptable to changes in land use and forest fragmentation. The reduction in the number of environmentally sensitive forest interior bird species and populations is representative of regional trends throughout the range of these species. Wood thrush, veery and grassland species have shown steady declines throughout their range in the last ten years and were not identified as breeding species. Forest fragmentation, loss and changes to specific habitats have been the major contributor to population changes within these species.

The size of the property and the lack of intact wildlife corridors connecting other larger open space parcels have limited the use of the site by mammal species. The majority of mammal species identified are those that are most adaptable to forest fragmentation. More sensitive mammal species may utilize the area but the size of the parcel and its location within the landscape may prevent permanent use of the site.

The specific habitat cover types and physical boundaries of the ecological communities present on the property studied are still fairly well-defined, and well-established, despite a history of human use and land disturbance. The plant composition has favored a dramatic increase in the spread and dominance of invasive plant species of shrubs and ground covers. No endangered or threatened plant species or plant communities were identified within the target study area.

Resident common wildlife populations are well represented for the habitat types available within the study area. Several of the more forest interior and environmentally sensitive wildlife species were not observed. Wildlife corridors and suitable interior and edge habitats are limited and tend to be utilized by the generalist type species that can survive on smaller, fragmented open space parcels.

GYRODYNE

Site Description

The Gyrodyne Project Site consists of medical office buildings, residential dwellings, parking areas, manicured lawns, a pond/forested wetland (Orchard lake), and small pockets of deciduous uplands (**see Figure 5-2**). The property is bordered to the north by Route 202/35/Crompond Road, to the east by Lafayette Avenue, to the south by residential parcels, and to the west by Buttonwood Avenue and residential dwellings. Except for the southwestern corner of the site, the property is largely developed and does not provide a significant amount of plant or animal habitat. The southwestern corner of the site contains a pond known as Orchard Lake. The pond is surrounded by woody vegetation (see description below). This area does provide some habitat for plant and animals species. Orchard Lake is described in greater detail in Chapter 6, "*Surface Water Resources and Wetlands*."

Tree Survey

In May 2018, a tree survey for the Gyrodyne Project Site was completed by Trevor Hall of Bartlett Tree Experts of Elmsford, NY (**see Gyrodyne Tree Survey Appendix 5**). The entire property was inspected and involved locating each tagged tree and recording the location, species, size and condition. The survey also assessed the site to determine if any Town-listed specimen trees were present. The overall compilation of species on the site is of relatively young trees, since the site was likely cleared in the not too distant past to make room for the structures that currently exist on the property.

The west side of the property is mostly comprised on Maples, Black Cherries and other common trees. In the southern portion of the west side of the property there are mainly Hybrid Poplars and Red Maples in the swampy area. The wet area is overrun with invasive vines and mostly small Black Locust and Poplar trees. There are no specimen trees in this area. There are some large trees that are planted around the existing medical office buildings located on the property, and none of them are specimen trees. The east side of the property along Lafayette Avenue is wooded, mainly by small Sugar and Norway Maples. They are mostly in the 12" to 20" DBH range and are in good condition. In the east portion of the site, closest to Route 202/35/Crompond Road, there are some trees that could be considered specimen or significant. There is a large 50" Red Oak (tree #590) that is in good condition and has a full crown, and which is the largest existing tree on the property. However, this tree is located within the footprint of the proposed medical office building, and is proposed to be removed. There are also two groups of Black Walnuts that are approximately 21" in diameter found on the site. The tree inspection report recommends that these trees should be considered for preservation if the development plan allows. However, these trees are grouped within the designated area for the wellness plaza and are in close proximity to the medical office building and are proposed to be removed. In addition, the fruit grown on these trees is large and hard and when it falls to the ground could pose a hazard to pedestrians traveling on the Gyrodyne campus.

Orchard Lake

The immediate edge of Orchard Lake consists of several invasive plant species, with a large section of phragmites grass on the eastern edge. The forested wetland areas consist of typical wetland species, dominated by Red Maple, American Elm and Cottonwood in the tree layer, Spicebush and Winterberry within the shrub layer, and the ground layer is dominated by Skunk Cabbage, Sphagnum Moss and invasives such as Japanese Silt Grass and Garlic Mustard. Within the drier sections, several invasive shrub species are present. Upland areas consist of second growth forest with typical species present including Red Oak, Black Birch, Hickory, Sycamore and Sugar and Norway Maples.

The combination of open water, forested wetland and steep slopes towards Orchard Lake provide a relatively isolated habitat for wetland dependent species. Access to the perimeter of the Lake appears limited, which allows for greater protection and potential use by resident wildlife species. Due to the amount of fragmentation surrounding the Lake, the ability for this area to serve as a movement corridor for resident wildlife is limited. Potential species expected to utilize this habitat include several common pond species of amphibians, reptiles, birds, small mammals and fish.

The biodiversity value of the Lake is likely restricted to typical wildlife species that are more adaptable to residential and pond environments. The fragmentation of the habitat and lack of physical connectivity to adjacent land holdings restricts the attractiveness for use by larger land

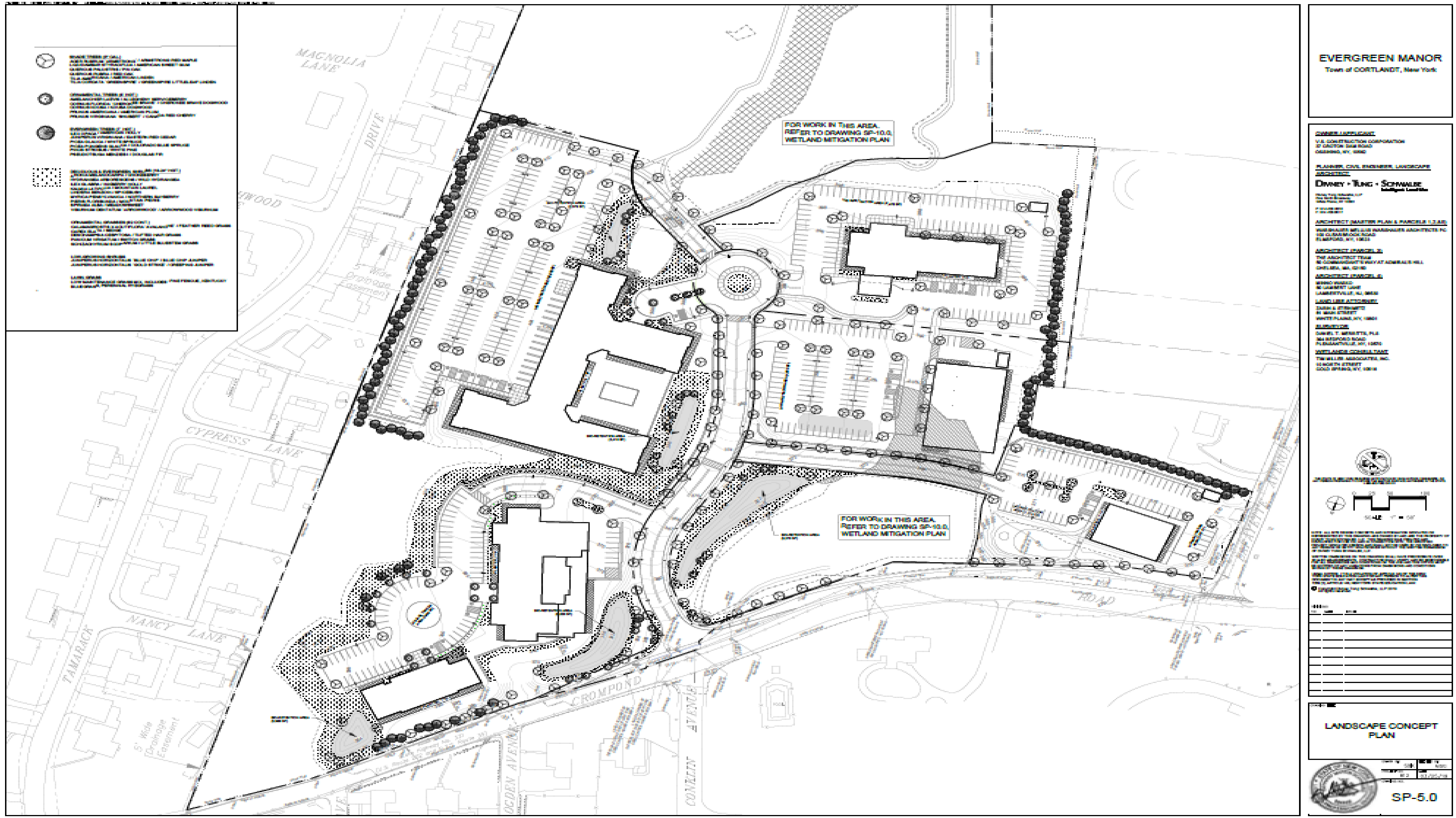

Figure 5-3
Evergreen Landscape Plan

Medical Oriented District
Draft Generic Environmental Impact Statement

DIVNEY • TUNG • SCHWALBE
Intelligent Land Use

Not to scale

mammals and species that need wider and more intact habitat ranges. Some potential exists for connectivity to the south and east.

PROBABLE IMPACTS OF MOD DEVELOPMENT PLAN

EVERGREEN

The Evergreen Manor Project proposes a moderately dense development plan for the Evergreen Manor Project Site. As noted above, a substantial part of the site was previously cleared and open landscape for residential use, and as recently as 1990 the majority of the northern half of the site was maintained lawn and managed landscape. Most of the proposed development will occur in these areas.

During preliminary discussions as stakeholders in the MOD process, several different scenarios were considered for development of the Evergreen Manor parcels. One concept, which required the elimination of the wetland at the north end of the site in order to locate all development closer to the Route 202 corridor, was modified following comments by the Army Corps of Engineers and Town Wetland Consultant. The proposed plan preserves all but a small portion of the northern wetland (approximately ¼ acre), and provides a wetland mitigation/replacement plan that will offset the loss of wetland at a ratio of 2:1. It was acknowledged in the Town Consultant Stephen Coleman report that wetland and wetland buffer encroachment will still be required, but this section of wetland is the least valuable from a habitat function.

The majority of the vegetation and wildlife habitat area to be disturbed is either the former developed area or second growth scrub/shrub following the cessation of landscape management. While the buildings and hardscape offer only limited habitat value, the second growth areas do provide habitat for the more common suburban species. The surrounding residential and institutional properties offer similar habitat and following completion of construction it is expected that a continuity of habitat will continue to exist for these more adaptable species.

The MOD development plan for the Evergreen Manor site does include the clearing of a wooded area along the eastern edge of Parcel 4 for a parking lot associated with the proposed residential site. This strip of woodlands approximately 100 feet wide likely provides some habitat for breeding birds, including the forest interior species that were identified during the bird surveys. The proximity of this area to the adjacent residences on Tamarack Drive make it less than ideal for the more sensitive bird species, but the removal of trees may represent an impact to these species.

No threatened or endangered species are recorded as existing on or near the Evergreen Manor site, and none were observed during the site surveys. One New York State listed species of special concern was observed. A male box turtle was observed just south of the proposed development area of the proposed Parcel 6. While the wooded wetland and adjoining forested areas are the most likely habitat for this species, the home range for box turtles is relatively large and it is possible that the development could reduce the available habitat for this species.

GYRODYNE

The Gyrodyne Project would result in the disturbance of approximately 9.4 acres of the 13.8 acre site. With the exception of the area surrounding Orchard Lake, the site would be densely developed with buildings, parking areas, a wellness plaza, and landscaped lawn. As noted above, a substantial part of the site was previously cleared and open landscape for medical and residential use, and the

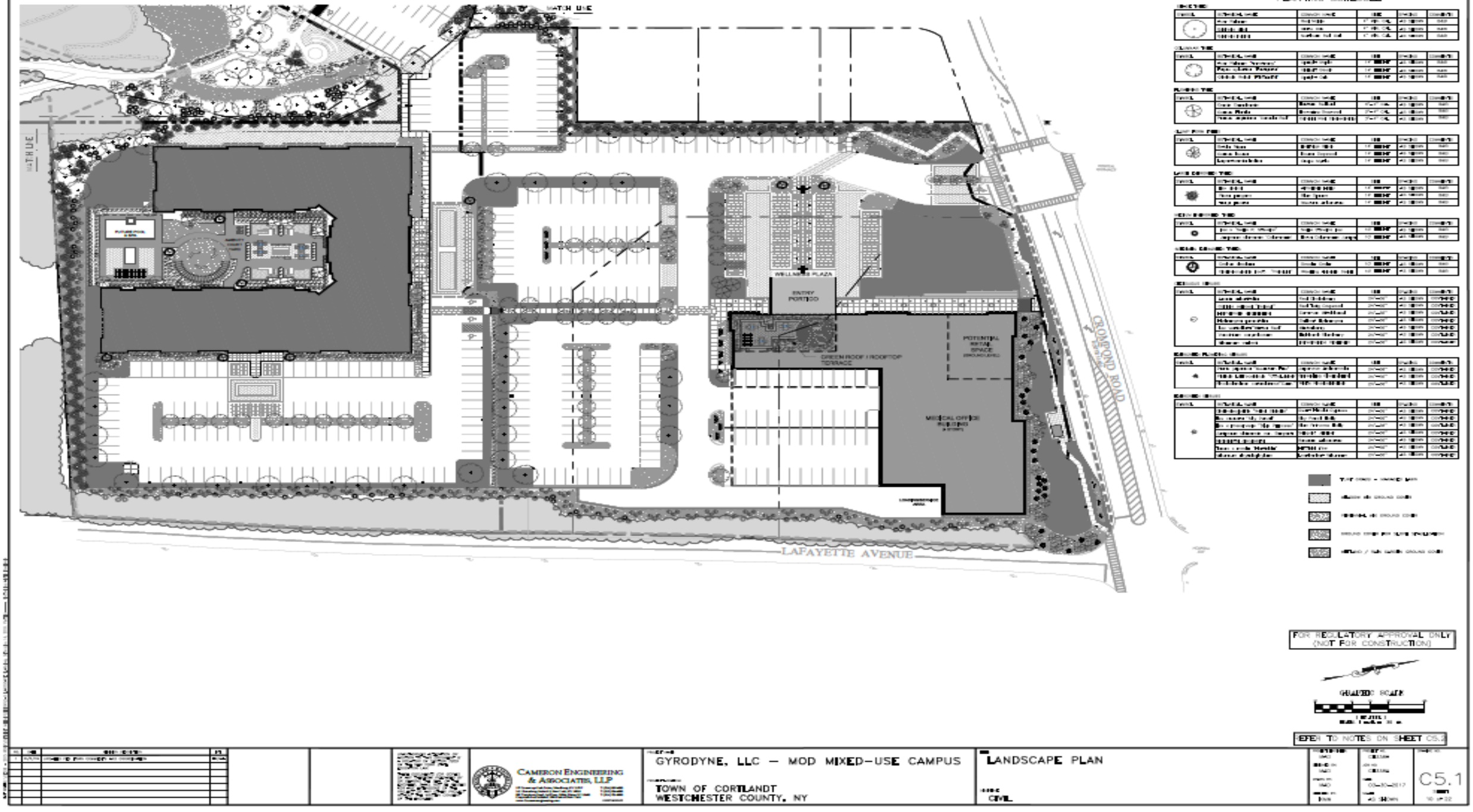

Figure 5-4
Gyrodyne Landscape Plan
Medical Oriented District
Draft Generic Environmental Impact Statement

CAMERON ENGINEERING

Not to scale

areas of the site not containing buildings or parking area were largely maintained lawn and managed landscape. Most of the proposed development will occur in these areas.

The proposed development on the Gyrodyne Project Site will result in the removal of approximately 292 trees within the limits of disturbance for the construction of the multi-family residential building and the medical office building, as well as associated parking areas and drive aisles. While trees on the interior of the site will be removed, most of the trees located along Lafayette Avenue and around Orchard Lake (excluding the area designated for the proposed valet parking area) will be preserved. Many of the trees that will be removed are young, since the area was cleared in the not so distant past for the construction of the existing structures. The vegetation surrounding Orchard Lake will remain and will not be affected by the proposed construction.

No endangered, threatened, or rare species or significant ecological communities are known to be present on the Gyrodyne Project Site; accordingly, no impacts to endangered, threatened, or rare species or significant ecological communities shall result from the Gyrodyne Project. In a letter dated November 5, 2018, the NYSDEC Division of Fish and Wildlife, New York Natural Heritage Program stated that they have no records of rare or state-listed animals or plants, or significant natural communities at the project site or in its immediate vicinity (**see Appendix 5**). An Information for Planning and Consultation (IPaC) resource list (//ecos.fws.gov/ipac/), under the jurisdiction of the U.S Fish and Wildlife Service, listed two species that could potentially be affected by the activities at the Gyrodyne Project Site. The first species is the Indiana Bat (Myotis sodalist) which is endangered, and the second species is the Northern Long-eared Bat (Myotis septentrionalis) which is threatened. The resource list indicates that the project site is located outside of the critical habitat for both species.

MITIGATION

EVERGREEN

Mitigation efforts will focus on expansion, restoration and enhancement of the two wetland systems, as further described in Chapter 6, Surface Water Resources and Wetlands. This also includes invasive species management, cleanup of former debris areas, aggressive re-planting with native ground covers, shrubs and trees, and initiatives to improve wetland and wetland buffer functions.

The proposed landscaping plan (**see Figure 5-3**) the site will include native species wherever feasible, and the water quality/bioretention features will be planted to mimic wetland vegetation to provide additional habitat, particularly to bird species. In addition, two open space parcels will remain and include the wetlands, which are the most sensitive habitat on the parcel. Other protective measures will include buffer restoration and construction of a physical barrier- such as fencing, or walls to separate these areas from the proposed development activities (**see Appendix 1** Evergreen Manor Site Plan sheets SP 5.1 and SP 10.0).

In order to preclude any potential issues with both bat species, development of the project site will adhere to the federal and state guidelines. Specifically, the tree clearing activities for the proposed development will be scheduled during winter months to the maximum extent practicable as required by reviewing agencies, including the removal of all snag (dead standing) and cavity trees unless they are a hazard to human life and property.

GYRODYNE

To reduce the potential impacts associated with the removal of existing trees, potential mitigation includes the revegetation of the site with native landscaping, including over 400 trees, comprising of evergreen trees, as well as Maple, Beech and Oak trees that will be 10-14 feet in height at the time of planting. The landscape plan **(see Figure 5-4 and Table 5-5)** also includes flowering trees, and 24"-36" shrubs. The selection of trees and shrubs being proposed for planting at the Gyrodyne Project Site include the following:

Table 5-5
Proposed Gyrodyne Landscape Plan Plantings

Shade Trees – 69 trees		
Botanical Name	**Common Name**	**Size**
Acer Rubrum	Red Maple	3"-4" Cal.
Quercus alba	White Oak	3"-4" Cal.
Quercus rubra	Northern Red Oak	3"-4" Cal.
Columnar Trees - 52		
Botanical Name	**Common Name**	**Size**
Acer Rubrum "Armstrong"	Upright Maple	14' Height
Fagus sylvatica "Fastigiata"	Upright Beech	14' Height
Quercus Robur "Fastigiata"	Upright Oak	14' Height
Flowering Trees - 48		
Botanical Name	**Common Name**	**Size**
Cercis Canadensis	Eastern Redbud	3"-4" Cal.
Cornus Florida	Flowering Dogwood	3"-4" Cal.
Prunus "Kwanzan"	Kwanzan Cherry	3"-4" Cal.
Clump Form Trees - 37		
Botanical Name	**Common Name**	**Size**
Betula Nigra	Heritage Birch	14' Height
Cornus Kousa	Kousa Dogwood	14' Height
Lagerstoernia Indica	Crepe Myrtle	14' Height
Large Evergreen Trees - 46		
Botanical Name	**Common Name**	**Size**
Cryptomeria japonica	Japanese Cryptomeria	12' Height
Ilex apaca	American Holy	12' Height
Thuja plicata	Western Arborvitae	12' Height
Medium Evergreen Trees - 170		
Botanical Name	**Common Name**	**Size**
Ilex x "Nellie R. Stevens"	Nellie Stevens Holly	10' Height
Juniperus chinensis 'Columnaris'	Hetzl Columnaris Juniper	10' Height

Specimen Evergreen Trees - 10		
Botanical Name	**Common Name**	**Size**
Cedrus deodara	Deodar Cedar	10’ Height
Chamaecyparis not. “Pendula”	Weeping Alaskan Cedar	10’ Height
Deciduous Shrubs		
Botanical Name	**Common Name**	**Size**
Aronia arbutifolia	Red Chokeberry	24”-36”
Cornus sericea “Kelseyi”	Red Twig Dogwood	24”-36”
Hamamelis virginiana	Common Witch-hazel	24”-36”
Hydrangea quercifolia	Oakleaf Hydrangea	24”-36”
Ilex verticiliata “Winter Red”	Winterberry	24”-36”
Vaccinium corymbosum	Highbush Blueberry	24”-36”
Viburnum carlesli	Koreanspice Viburnum	24”-36”
Evergreen Flowering Shrubs		
Botanical Name	**Common Name**	**Size**
Pieris japonica “Mountain Fire”	Japanese Andromeda	24”-36”
Prunus Laurocerasus “OttoLuyken”	Spreading Cherrylaurel	24”-36”
Rododendron catawbiense “Cunn.”	White Rododendron	24”-36”
Evergreen Shrubs		
Botanical Name	**Common Name**	**Size**
Chamaecyparis “Nana Gracilis”	Dwarf Hinoki Cypress	24”-36”
Ilex crenata “Sky Pencil”	Sky Pencil Holly	24”-36”
Ilex x meserveae “Blue Princess”	Blue Princess Holly	24”-36”
Juniperus chinensis var. Sargenti	Sargent Juniper	24”-36”
Microbiota decussate	Russian Arborvitae	24”-36”
Taxus x media “Hatfieldii”	Hatfield Yew	24”-36”
Viburnum rhytidophylium	Leatherleaf Viburnum	24”-36”

The site will also be treated with new turf grass and ground covers. The landscape plan includes a dense landscape buffer surrounding the perimeter of the site to provide screening for the adjacent residential neighborhood. Also contributing to the environmental sustainability being proposed as mitigation for the Proposed Action is the installation of a green rooftop garden on top of the medical office building.

Special attention has been paid in the preparation of the landscape plan for the Gyrodyne Project by using plant materials that are compatible with the surrounding area. The proposed landscape plantings will utilize indigenous trees, shrubs and groundcovers and will strategically augment the existing landscape along the proposed internal roadways, site entrance, as well as reinforce the buffer along Lafayette Avenue and adjacent properties. Ground cover is also proposed to provide slope stabilization along Lafayette Avenue.

The proposed tree plantings will frame open space areas with clump trees and interior roadways with shade trees. The proposed plant list will include a mix of both native plants and ornamental plants. There will be no invasive species introduced to the site. The interior street tree plantings and foundation plantings will consist of both nursery-grown ornamental and native plantings. In the area around Orchard Lake, hundreds of mature evergreen trees/hedgerows will be preserved. The existing wetland along the lake will remain and be supplemented with additional wetland groundcover. Details of the conceptual landscape plan can be seen in **Appendix 1** Gyrodyne Site Plan Sheets C5.1 and C5.2.