- Preserving the wetlands on the site to the maximum extent possible which can potentially be used by bats as travel corridors;

- Implementing soil conservation and dust control best management practices, such as watering dry disturbed soil areas to keep dust down, and using staked, recessed silt fence and anti tracking pads to prevent erosion and sedimentation in surface waters on the site;

- Prior to clearing, the limits of proposed clearing will be clearly demarcated on the site with orange construction fencing (or similar) to prevent inadvertent over-clearing of the site, and;

- Stormwater pond(s) will not be maintained with any chemicals that might adversely affect bats or insect populations on which they may feed.

These measures will result in minimizing potential adverse effects to Indiana Bats.

Blanding's Turtles

The NYSDEC wetland WF-6 and adjacent Hoosic soil uplands will be preserved, so that potential use by Blanding's turtles will not change. There was no other observable potential habitat on the property so that fragmentation of habitat is not anticipated. The forested area underlain by Hoosic soils is a candidate area for enhancement to make the area conducive for nesting. Outside the active season trees could be cut by hand to make this area more attractive or useful for nesting.

In addition, NYSDEC recommended mitigation measures will be used on the property during development activities. The following measures will be incorporated to assure that any potential impacts are avoided and minimized:

- Temporary Barrier
  A temporary restrictive barrier in the form of silt fencing will be installed around the perimeter of the disturbance footprint. The barrier will be: 1) installed during the winter hibernation period and maintained until the end of the construction phase of the project or until the beginning of the next winter hibernation period, whichever occurs first, 2) inspected daily and, if necessary, repaired immediately to a fully functional condition, and 3) constructed in accordance with the following design specifications:

  - Made of fine-mesh (¼ inch square) filter-fabric or non-woven geotextiles;
  - A minimum of 42" high;
  - Anchored into the ground with reinforcement bars placed on the "disturbance side" of the barrier and spaced between 6 – 8 feet apart; and
  - Secured at the base (barrier/ground interface) with at least 8" of fence material covered with soil backfill.

- Blanding's Turtle Monitor
  The project will employ a monitor to assure that all the stated measures are implemented, and to monitor for potential impacts. The monitor must be a qualified biologist that has knowledge of Blanding's turtle ecology and relocation procedures; the biologist must also have experience handling Blanding's turtles and be licensed by New York State to do so.

The monitor's responsibilities should include:

- Conducting reconnaissance surveys for Blanding's turtles within the specified work area prior to the initiation of any disturbance activities, and relocating any turtles if ever found;
- Training all personnel working at the site to be able to identify, locate, and remove or relocate Blanding's turtles, if necessary;
- Monitoring the proper placement and maintenance of temporary restrictive barriers; and
- Providing oversight during the disturbance phase of the project.

- Trap Hazard Protection
  Water control structures, such as drainpipes, may create a trap hazard to Blanding's turtles. To prevent possible entrapment of Blanding's turtles, the storm drain grates will be designed with the smallest possible grate opening without compromising safety or necessary flow rate while meeting the Town standards.

  Below-ground swimming pools should be surrounded by fencing to exclude turtles of all age classes. Fine grade wire cloth (1/4 inch square mesh size) at the base of a picket fence or a 10" - 12" high barrier can be used to prevent turtles from traveling into the hazard area.

  Window wells should have grates (1 inch square mesh size or less) or 10" - 12" high vertical barriers surrounding the well.

3.C.3.5 Future Development Parcel

The limits of disturbance should be clearly delineated with orange construction fencing to ensure excess clearing does not occur and any tree preservation measures should be installed to protect all trees to remain. As a result, a total of 2 trees, 20 inches dbh or greater, will be removed. The example use shown in *Figure 2.C-40* shows a total of 87 trees and shrubs (10 street trees, 7 shade trees, 2 understory, 28 evergreens, and 40 shrubs) to be planted. Therefore, no additional mitigation measures would be necessary.

Measures to minimize potential adverse effects to the Indiana Bats should be performed in accordance with the measures outlined in *Section 2.C.3.3*. No other threatened and/or endangered species mitigation measures are required, since no impacts to any other listed species are anticipated.

3.D Wetlands

This section discusses the existing wetland locations, characteristics, hydrology, and function. These conditions were evaluated based on mapping provided by the National Wetlands Inventory (NWI), the New York State Department of Environmental Conservation (NYSDEC) wetland mapping, and onsite field delineations. The potential impacts to the wetlands are identified and mitigation measures, if any, are presented to minimize these impacts.

3.D.1 Existing Conditions

3.D.1.1 Wetland Delineation

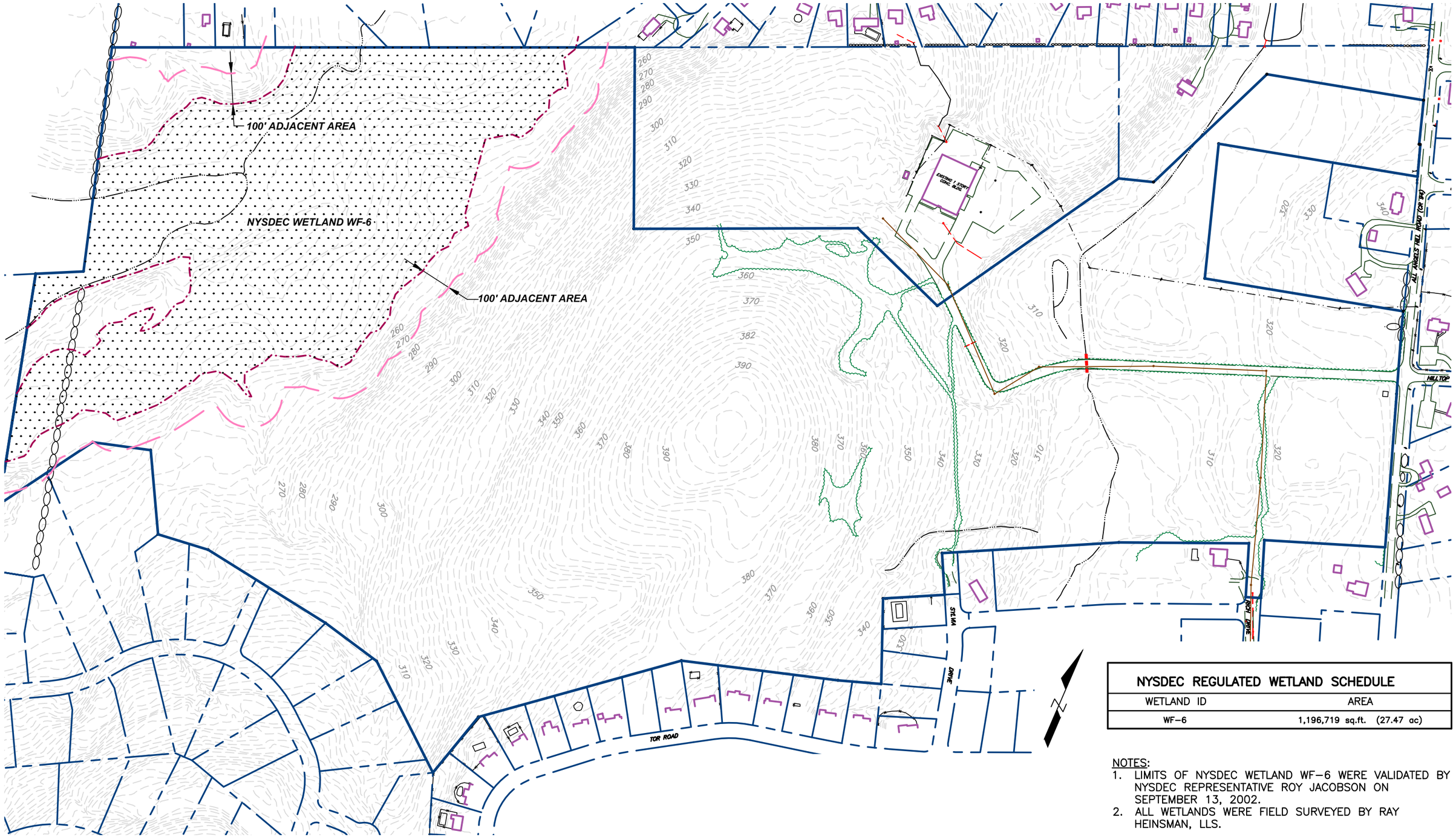
A wetland delineation was completed by Ecological Solutions, LLC in October 2010, when the original wetland flags were re-established in the field by the project surveyor. The delineation was completed in accordance with the *US Army Corps of Engineers* (USACE) *Wetlands Delineation Manual, Technical Report Y-87-1*[31], NYSDEC Article 24 Freshwater Wetland regulations for state wetland WF-6, and Town of Wappinger Wetland Code Chapter 137.

Ecological Solutions, LLC field checked the delineated the wetlands; and obtained a validated wetland map from the NYSDEC for State Regulated Wetland WF-6 (see *Appendix C.1*) and verification letter from the Town of Wappinger's Environmental Consultant for the local regulated wetlands (see *Appendix B.2*). A Pre-Construction Notification (PCN) was sent to the USACE on July 17, 2011 and the USACE provided an Application Number (NAN-2011-00865-WRY) in the letter dated August 3, 2011 (see *Appendix B.3)*.

The property contains NYSDEC, USACE, and Town of Wappinger wetlands. All of the wetland areas observed on the parcel exhibited one or more of the following (1) flowing water, (2) soil saturation. On average water depths within the on-parcel wetlands ranged from 0-4 inches. Water table elevations within on-parcel wetlands are presumed to occur within a fairly wide range of elevations (up to one half foot). Forested wetlands on the parcel exhibit a distinct hummock-hollow topography, which varies with the degree of water table fluctuations. The wetlands are associated with either an ephemeral, intermittent, or perennial stream channel. Surface water and ground water trend in a north-south direction, and ultimately discharge off the parcel to the Hudson River via off parcel tributaries. The hydric mapping units on the parcel are the Canandaigua silt loam (Ca) and Carlisle muck (Cc) soil series. All of the wetlands identified on the parcel occur in these series.

There is one principal wetland area on the property and is identified as NYSDEC Wetland WF-6 or Wetland B-C-D, which is also regulated by the USACE and Town, and contains 29.07 acres or 18.5% of the property. Wetland E is 0.46 acres or 0.3% of the property and is regulated by the USACE and Town. Wetland F-G is 5.00 acres or 3.3% of the property, Wetland H-J is 4.91 acres total or 3.3% of the property, and Wetland N is 0.06 acres or 0.04% of the property, all of which are regulated by the USACE and Town. Wetland acreage totals 39.50 acres or 26.5% of the property. The NYSDEC wetland WF-6 contains a 100 foot adjacent area that is calculated to be 10.91 acres or 7.3 percent of the property. The Town wetland buffer for all wetlands on the parcel equals 25.11 acres or 16.8 percent of the property. The location of the NYSDEC wetland is shown in *Figure 3.D-1* and the locations of the USACE-Town wetlands are shown in *Figure 3.D-2*. *Table 3.D-1* summarizes the acreage, location, and type of wetlands present on the property.

[31] *U.S. Army Corps of Engineers Environmental Laboratory, 1987 (1987 Federal Manual)*



NYSDEC REGULATED WETLAND SCHEDULE

WETLAND ID	AREA
WF-6	1,196,719 sq.ft. (27.47 ac)

NOTES:

1. LIMITS OF NYSDEC WETLAND WF-6 WERE VALIDATED BY NYSDEC REPRESENTATIVE ROY JACOBSON ON SEPTEMBER 13, 2002.
2. ALL WETLANDS WERE FIELD SURVEYED BY RAY HEINSMAN, LLS.

PREPARED BY:

POVALL ENGINEERING, PLLC

HILLTOP VILLAGE AT WAPPINGER

NYSDEC WETLAND MAP

FIGURE 3.D-1

DATE: 02/2012

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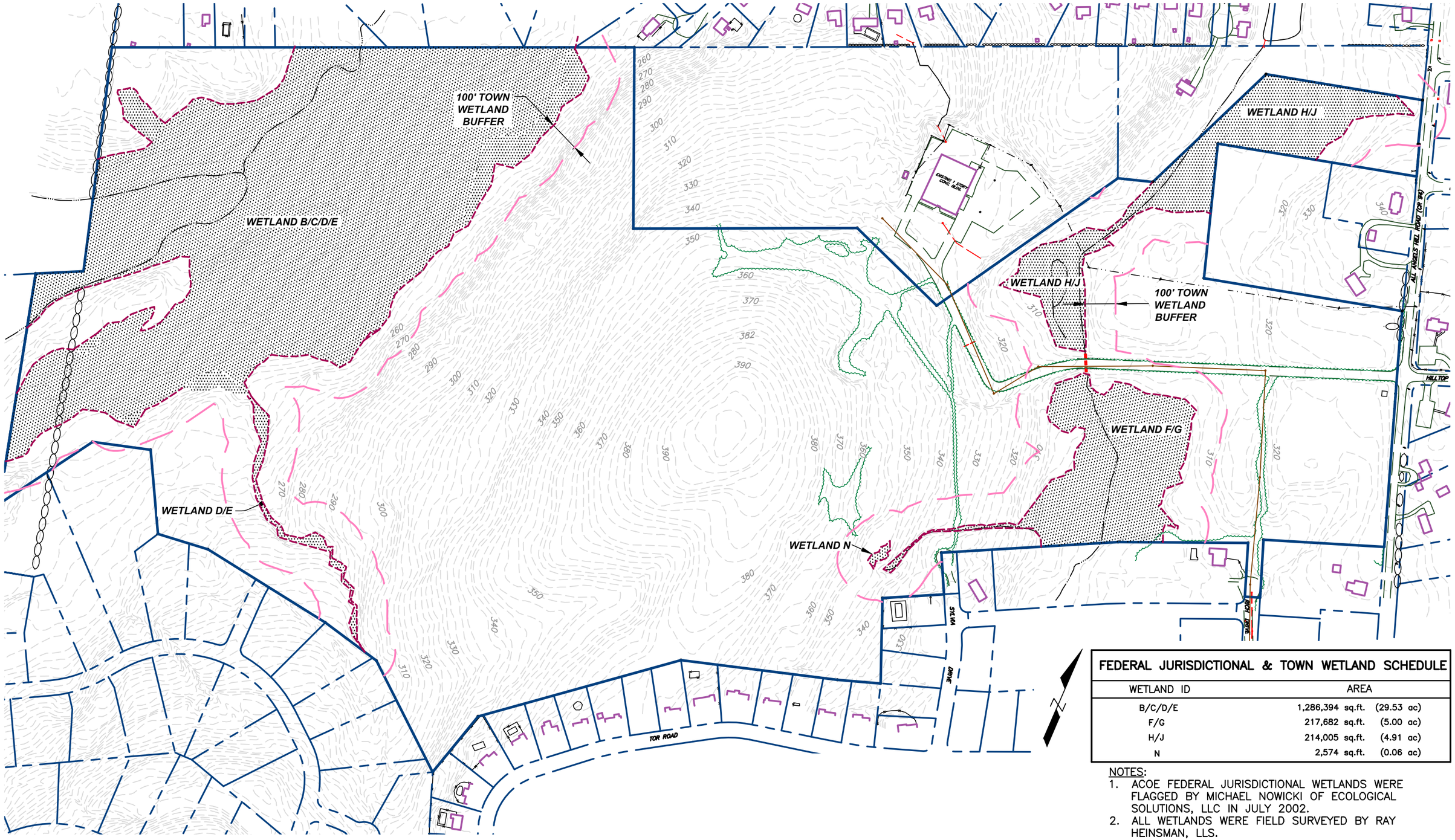
SCALE: 1"=300'



FEDERAL JURISDICTIONAL & TOWN WETLAND SCHEDULE

WETLAND ID	AREA	
B/C/D/E	1,286,394 sq.ft.	(29.53 ac)
F/G	217,682 sq.ft.	(5.00 ac)
H/J	214,005 sq.ft.	(4.91 ac)
N	2,574 sq.ft.	(0.06 ac)

NOTES:

1. ACOE FEDERAL JURISDICTIONAL WETLANDS WERE FLAGGED BY MICHAEL NOWICKI OF ECOLOGICAL SOLUTIONS, LLC IN JULY 2002.
2. ALL WETLANDS WERE FIELD SURVEYED BY RAY HEINSMAN, LLS.

PREPARED BY:

POVALL ENGINEERING, PLLC

HILLTOP VILLAGE AT WAPPINGER

ACOE & TOWN OF WAPPINGER WETLAND MAP

FIGURE 3.D-2

DATE: 02/2012

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SCALE: 1"=300'

Table 3.D-1: Existing Wetland Conditions

Wetland ID	Wetland Area (acres)	Location	Type
B-C-D[1]	29.07	Western boundary	Red Maple Swamp
F-G	5.00	Eastern boundary	Scrub/Shrub Thicket
E	0.46	Southern Central area	Watercourse
H-J	4.91	Eastern boundary	Red Maple Swamp
N	0.06	Southern area	Red Maple Swamp

[1] The area of NYSDEC Wetland WF-6 (27.47 acres) is included within Wetland B-C-D, since it is part of the ACOE-Town wetland.

Detailed descriptions of the wetlands are provided below.

USACE-Town Regulated Wetland B-C-D is approximately 29.07 acres, consists of a forested wetland that primarily receives water through surface sheet flow and adjacent off-site wetlands. . NYSDEC Wetland WF-6 is part of this wetland and is approximately 27.47 acres. Channelized flow was identified at the approximate center of the wetland. Hydrologic indicators observed included soil saturation, drift lines, drainage patterns, shallow root systems, and water stained leaves. Herbaceous species identified included *Symplocarpus foetidus* (skunk cabbage). Shrub species observed included *Acer rubrum* (red maple), and *Lindera benzoin* (spicebush). Tree species included *Acer rubrum* (red maple) and *Ostrya virginiana* (eastern hophornbeam). The hydric mapping units in this wetland are the Canandaigua silt loam (Ca) and Carlisle muck (Cc) soil series.

USACE-Town Regulated Wetand F-G is a red maple swamp and is connected Wetland H/J by a small ephemeral or intermittent watercourse. Hydrological indicators identified within the two wetlands included water marks, drift lines, drainage patterns, and water stained leaves. Herbaceous vegetation identified included *Onoclea sensibilis* (sensitive fern), *Osmunda cinnamomea* (cinnamon fern), and *Viola sp.* (violet). Shrub species included *Lindera benzoin* (spicebush) and *Acer rubrum* (red maple). Tree species included *Acer rubrum* (red maple), *Ostrya virginiana* (eastern hophornbeam), and *Fraxinus pennsylvanica* (green ash). The hydric mapping unit in this wetland is Canandaigua silt loam (Ca).

USACE-Town Regulated Wetland E is an ephemeral watercourse with steep banks and a gravelly bottom. Hydrological indicators included watermarks and drainage patterns. No vegetation is dominant in this watercourse.

USACE-Town Regulated Wetland H-J consists of a scrub/shrub thicket wetland component in a red maple swamp. Hydrologic drivers for this wetland are adjacent steep hillsides and surface sheet flow from surrounding uplands, and a small ephemeral watercourse within its boundaries. Hydrologic indicators for this wetland include soil saturation, drainage patterns, oxidized root channels, and water stained leaves. Herbaceous vegetation identified included *Onoclea sensibilis* (sensitive fern), *Osmunda cinnamomea* (cinnamon fern), and *Viola sp.* (violet). Shrub species included *Lindera benzoin* (spicebush) and *Acer rubrum* (red maple). Tree species included *Acer rubrum* (red maple), *Ostrya virginiana* (eastern hophornbeam), and *Fraxinus pennsylvanica* (green ash). The hydric mapping unit in this wetland is Canandaigua silt loam (Ca).

USACE-Town Regulated Wetland N originates on topographically higher portions of the site. The wetland is fed through ground water seepage and surface sheet flow. Hydrologic indicators observed included soil saturation, shallow root systems, drainage patterns, and water stained leaves. Herbaceous vegetation identified included *Onoclea sensibilis* (sensitive fern), *Osmunda cinnamomea* (cinnamon fern), and *Viola sp.* (violet). Shrub species included *Lindera benzoin* (spicebush) and *Acer rubrum* (red maple). The hydric mapping unit in this wetland is Canandaigua silt loam (Ca).

All of the wetland areas on the property are regionally abundant Red Maple Swamp and typical for the glaciated Northeastern United States. There are no unique or regionally rare wetland types on the property for example (kettlehole pond, graminoid fen, cedar swamp).

The NYSDEC Wetland WF-6 contains a 100 foot adjacent area, which is 10.91 acres or 7.3 percent of the property. The Town 100 foot wetland buffer for all wetlands on the property is 25.11 acres or 16.8 percent of the property.

3.D.1.2 Wetland Functions and Values

An assessment of wetland functions and values was conducted on the wetlands that were identified and delineated on the parcel. Using a widely accepted method for wetland functions and values assessment developed by the New England District, U.S. Army Corps of Engineers, 13 distinct wetland functions and values were assessed for the delineated wetlands on the parcel. This method yielded an objective, descriptive quality index of each wetland rather than a subjective quantified rating of each wetland. This assessment had two major objectives:

- Objectively identify the functions and values provided by each of the wetlands identified on the site.
- Provide baseline data with which the Applicant could work in planning land uses, and against which the Applicant could assess potential impacts of proposed development of the parcel.

The assessment was completed for of each wetland for thirteen defined functions and values. Of these, the first eight are considered wetland functions, and the last five are considered to be wetland values. These are:

1. **Groundwater Recharge/Discharge –** the potential for a wetland to serve as a recharge area for an aquifer or as a surface discharge point for groundwater.
2. **Floodflow Attenuation–** A wetland's ability to store and attenuate floodwaters during prolonged precipitation events, thereby reducing or preventing flood damage.
3. **Fish and Shellfish Habitat –** The ability of permanent or temporary water bodies to provide suitable habitat for fish or shellfish.
4. **Sediment/Toxicant/Pathogen Retention –** The effectiveness of the wetland in trapping sediments, toxicants or pathogens, thereby protecting water quality.

5. **Nutrient Removal/Retention/Transformation –** The effectiveness of the wetland at absorbing, retaining, and transforming or binding excess nutrients, thereby protecting water quality.

6. **Production Export –** The wetland's ability to produce food or usable products for humans or other living organisms.

7. **Sediment/Shoreline Stabilization –** The wetland's ability to prevent erosion and sedimentation by stabilizing soils along stream banks or the shorelines of water bodies.

8. **Wildlife Habitat** – The ability of wetlands to provide food, water, cover, or space for wildlife populations typically associated with wetlands or their adjacent areas, both resident and migratory.

9. **Recreation –** The value placed on a wetland by society for providing consumptive and non-consumptive as well as active or passive recreational opportunities such as canoeing/boating, fishing, hunting, bird/wildlife watching, hiking, etc.

10. **Education/Scientific Value –** The value placed on a wetland by society for providing subjects for scientific study or research or providing a teaching resource for schools.

11. **Uniqueness/Heritage –** The value placed on a wetland by society for having unique characteristics such as archaeological parcels or parcels of historical events, unusual aesthetic qualities, or unique plants, animals, or geologic features, etc.

12. **Visual Quality/Aesthetics –** The value placed on a wetland by society for having visual and/or other aesthetic qualities.

13. **Threatened or Endangered Species Habitat –** The value placed on a wetland by society for effectively harboring or providing habitat for threatened or endangered species.

Findings of the assessment are outlined below.

Wetlands WF-6 (B-C-D), E, F-G, H-J, and N receive water primarily from overland sheet flow and perennial/intermittent tributaries located within each wetland. Hydrological indicators identified within the wetlands included soil saturation, watermarks, drift lines, drainage patterns, and water stained leaves. The wetlands are mainly broad-leafed deciduous forested wetland (PFO1E). These are red maple-spicebush dominated swamps with dense understory of skunk cabbage (*Syplocarpus foetidus*) that is seasonally saturated. These systems are surrounded by dense second-growth forest with some patches of more mature open forest area to the north and south of the parcel. Functions and values provided by these wetlands include groundwater recharge, floodflow attenuation, sediment trapping, nutrient removal, production export, shoreline stabilization, wildlife habitat, and visual quality. Of these, the most significant functions based on extent of rationale in identifying functions and values, are floodflow attenuation, sediment trapping, and wildlife habitat.

Also wetlands serve as carbon sinks and store detritus and other carbon in the plant growth and soils. The wetlands on the property are 39.67 acres, or 26.7 percent of the total acreage and impacts will occur to only 0.045 acres as a result of the road improvement into the property and construction

of the emergency access road meaning that the capacity of the wetland to serve as a carbon sink is not anticipated.

3.D.2 Potential Impacts

3.D.2.1 Proposed Action

There are two areas of direct wetland impact totaling 0.045 acres. The locations and amount of disturbance are described below.

- The first location is where the proposed Road "A" crosses the existing twin 30-inch corrugated metal pipe (CMP) culverts between USACE-Town wetlands F/G and H/J. A portion of Road "A" will disturb USACE-Town wetlands F/G and H/J. Approximately 254 square feet (0.006± ac) of wetland F/G and 15 square feet (0.001± ac) of wetland H/J will be disturbed during the replacement of the existing twin 30-inch CMP culverts, installation of utilities, and associated grading.

- The final location is north of the southern property line where the emergency access road (Road "E") will connect to the adjacent Shamrock Hills subdivision. A portion of the emergency access road will disturb USACE-Town wetland E. Approximately 1,660 square feet (0.038± acres) of the 100 foot Town wetland buffer will be disturbed for the installation of the emergency access road, culvert, utilities, and associated grading.

A summary of the proposed wetland impacts, location and regulating agency is provided in *Table 3.D-2* below.

Table 3.D-2: Summary of Wetland Impacts

Location	Wetland	Regulating Agency	Disturbance (ac)
Road "A"	F/G	USACE-Town	0.006
Road "A"	H/J	USACE-Town	0.001
Road "E"	E	USACE-Town	0.038
		Total	**0.045**

In accordance with Chapter 137 of the Wappinger Town Code, a 100 foot regulated buffer is placed around all Town of Wappinger designated wetlands. There are four locations of Town wetland buffer disturbance totaling 1.33 acres. The locations and amount of disturbance are described below.

- The first location is where the proposed Road "A" crosses the existing twin 30-inch corrugated metal pipe (CMP) culverts between USACE-Town wetlands F/G and H/J. The total amount of disturbance associated with the removal of the existing driveway and installation of Road "A", the sidewalk, replacement of the existing twin 30-inch CMP culverts, utility installation, and associated grading is 34,634 square feet (0.80± acres). Replacement of the existing culverts is necessary to maintain the hydrology in this location.

- The second location is on the eastern side of USACE-Town wetland F/G adjacent to the southern property line. Approximately 476 square feet (0.01± acres) of the 100 foot Town wetland buffer will be temporarily disturbed for the installation of the proposed outlet pipe

from bioretention area 1B. This disturbance is proposed in order to provide an outlet for the bioretention area and for any storms in excess of the water quality event.

- The third location is on the western side of USACE-Town wetlands F/G and N and Sylvia Drive. Approximately 6,762 square feet (0.16± acres) of the 100 foot Town wetland buffer will be disturbed for the installation of a walking trail behind the proposed single family homes S129 through S132, associated minor grading, and the installation of a retaining wall the proposed townhome units T39 through T41.

- The final location is north of the southern property line where the emergency access road (Road "E") will connect to the adjacent Shamrock Hills subdivision. Approximately 15,574 square feet (0.36± acres) of the 100 foot Town wetland buffer will be disturbed for the installation of the emergency access road, 30-inch HDPE culvert, utility installation, and associated grading. Installation of the culvert is necessary to maintain the hydrology in this location.

A summary of the proposed Town wetland buffer impacts, location and regulating agency is provided in *Table 3.D-3* below.

Table 3.D-3: Summary of wetland Buffer Impacts

Location	Regulating Agency	Disturbance (ac)
Road "A"	Town	0.80
Bioretention Area 1B	Town	0.01
Behind S129-S132 & T39-T41	Town	0.16
Road "E"	Town	0.36
	Total	**1.33**

The most significant wetland functions based on assessment are floodflow attenuation, sediment trapping, and wildlife habitat. The total of 0.045 acres of impact amounts to 0.15 percent of the wetlands on the property and is not a substantial impact to significantly alter any of the functions provided by the wetlands. The wetland impacts cannot be avoided because of the improvement required to the existing access road off of All Angels Hill Road and the provision of an emergency road to connect to Shamrock Hills Road that must cross a small section of Wetland E or the ephemeral watercourse.

No significant impacts to any of the wetland functions or buffers on the property will occur from alteration of the site drainage patterns due to the stormwater management plan or impacts from a sewage treatment facility. A full SWPPP is provided that details the site drainage impacts (*Appendix C.3*). No activities are proposed in the wetland areas, except for the emergency access road crossing and entrance road improvements that total only 0.045 acres. No activities are proposed in the NYSDEC regulated adjacent area. No activities are proposed in the Town wetland buffer, except for the emergency access road crossing, entrance road improvements, and minor grading that total 1.33 acres. No groundwater impacts are anticipated, since the project will rely on municipal water and sewer.

A Nationwide Permit #29 for Residential developments will be required from the USACE for the proposed wetland impact associated with the entrance road improvement. A NYSDEC Section 401

Water Quality Certification is also required because of the NWP #29. In addition, a Town of Wappinger approval is required in accordance with *Chapter 137 – Freshwater Wetland, Waterbody, and Watercourse Protection* of the Town Code.

3.D.2.2 Future Development Parcel

The Future Development Area contains no regulated wetlands or buffer area. Therefore, there are no anticipated impacts to any wetlands or buffer areas.

3.D.3 Mitigation Measures

3.D.3.1 Proposed Action

The Applicant has analyzed several different alternative layouts and designs to avoid all wetland impacts. Under all the alternatives, the impacts to wetlands varied minimally from the impacts generated by the Proposed Action. The Applicant recently redesigned the internal road layout such that the impacts to wetlands have been significantly reduced when compared to the original crossing design for the emergency access road. Impacts associated with the entrance road improvement could not be avoided but were minimized by limiting the grading only to the area necessary for the road improvement to Town standards. In addition, the areas of proposed disturbance were previously disturbed for the installation of the existing entrance road. The emergency road crossing from Shamrock Hills Drive into the parcel could be accomplished by using a 3-sided box culvert or a bridge, since this area is a small rocky bottom tributary. However, this will result in unavoidable disturbance to the banks because of the grades in the crossing location that must connect to Shamrock Hills Road. Therefore, the 3-sided box culvert and bridge were eliminated as potential crossing options.

A Stormwater Management Plan details the steps necessary to control stormwater generated on-site as a result of increased impervious surfaces. According to the report, the Proposed Action has been designed to facilitate stormwater movement and purification. Land areas that are not collected by the subsurface system will sheet flow off the parcel through natural patterns and surface conditions. The creation of stormwater treatment basins, a slight increase in low-land areas, and central collection of stormwater will function to maintain post-development peak stormwater discharges to at and below their pre-development levels.

The proposed development is designed to integrate the existing runoff patterns and natural features into the planned development with little disturbance. In addition, the natural features on the parcel are planned to be used to provide environmentally preferred stormwater management mitigation by improving runoff quality through the use of open-channel/wetland filtration, absorption, and evaporation. The stormwater analysis illustrates that the proposed system will function properly, provide water quality enhancements, and require minimal maintenance to insure continued performance. In addition, during construction appropriate soil erosion and sediment control measures will reduce any potential impacts to this area.

According to 33 CFR, Part 330 - Nationwide Permits, "Nationwide permits (NWPs) are a type of general permit issued by the Chief of Engineers and are designed to regulate with little, if any, delay

in paperwork, certain activities having minimal impact...An activity is authorized under an NWP only if that activity and the permittee satisfy all of the NWPs terms and conditions."[32]

The Applicant submitted a Preconstruction Notification (PCN) and supporting information to the USACE on July 17, 2011 (*Appendix B.3*) in accordance with the terms and conditions of Nationwide Permit No. 29 for project authorization for the proposed emergency access road crossing to Shamrock Hills Drive and upgrade to the existing access road off of All Angels Hill Road into the parcel.[33] The USACE responded to the submittal with correspondence dated August 3, 2011 provided in *Appendix B*. Under NWP #29 the USACE has 30 days to request additional information under the PCN. If no additional comments are made the Applicant must wait an additional 15 days for a total of 45 calendar days from the receipt of the PCN by the USACE before the Proposed Action is authorized. The Proposed Action (wetland impacts) is authorized to proceed after September 16, 2011.

No activities are proposed in the NYSDEC regulated wetlands or adjacent area. The only proposed wetland disturbance is to the USACE-Town regulated wetlands. The total of 0.045 acres of wetland impact amounts to 0.15 percent of the wetlands on the property and is not a substantial impact to significantly alter any of the functions provided by the wetlands. The proposed wetland disturbance is less than 0.10 acres. The USACE does not require mitigation nor requested it during the PCN. Therefore, no mitigation measures are required or proposed.

3.D.3.2 Future Development Parcel

The Future Development Parcel contains no regulated wetlands or buffer area. Therefore, there are no anticipated impacts to any wetlands or buffer areas and no mitigation measures are necessary.

3.E Surface Water Resources

This section evaluates the existing surface water resources, groundwater resources, and floodplains within or in close proximity to the project site. This section also evaluates the proposed developed conditions. These conditions are evaluated based on mapping provided by the Federal Emergency Management Agency (FEMA), United States Geological Service (USGS) 7.5-minute topographic maps, aerial photographs, a topographic property survey, soil surveys, and site investigations. Potential impacts were identified and mitigation measures, if any, are provided.

3.E.1 Existing Conditions

The property is located within the Wappinger Creek and Sprout Creek watersheds (*Figure 3.E-1*). According to the Dutchess Watersheds website,[34] the Wappinger Creek watershed covers approximately 211 square miles (134,871 acres) of land within 11 towns and 2 villages. Approximately 95.80 acres or 64 percent of the site is located within the Wappinger Creek watershed. According to the June 2005 "Natural Resource Management Plan for the Fishkill Creek Watershed"[35] report, the Sprout Creek watershed is a subwatershed of the Fishkill Creek watershed

[32]Title 33, Navigation and Navigable Waters, Part 330, Nationwide Permits, effective February 11, 1997.
[33]A Water Quality Certification may be required by the NYSDEC and other permits may be required from the Army Corps of Engineers such as a Nationwide Permit 14 for road crossings or a Nationwide Permit 12 for utility lines.
[34] http://www.dutchesswatersheds.org/
[35] http://www.dutchesswatersheds.org/fishkill-creek-information

and covers approximately 29,342 acres. Approximately 53.55 acres or 36 percent of the property is located within the Sprout Creek watershed. According to the "Final New York State 2010 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy", neither of these creeks is listed as an impaired water.

Stormwater runoff generated from the site flows generally overland to the northern property line; to the northwestern stream (#H-101-4-2-1); and to the eastern stream (#H-95-10-1-1). Stormwater runoff flowing to the northern property line continues offsite flowing overland and into a stream that flows into the eastern side of Lake Oniad. Stormwater runoff flowing to the northwestern stream continues offsite flowing into the southern side of Lake Oniad. The released stormwater from Lake Oniad ultimately flows into the Wappinger Creek. Stormwater runoff flowing to the eastern stream continues offsite and ultimately flows into the Sprout Creek. The two streams are further discussed in *Section 3.E.1.2*.

3.E.1.1 Groundwater

According to the United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey for Dutchess County, the depth to groundwater varies across the site. The depth to groundwater ranges from half a foot to six (6) feet. The depth to groundwater for each of the soil types is summarized in *Table 3.E-1* below.

Table 3.E-1: USDA Soil Data – Depth to Groundwater

Map Symbol	Description	Depth to Groundwater (ft)
BeB	Bernardston silt loam, 3 to 8 percent slopes	1.5-2.0 (Feb-Apr)
BeC	Bernardston silt loam, 8 to 15 percent slopes	1.5-2.0 (Feb-Apr)
BeD	Bernardston silt loam, 15 to 25 percent slopes	1.5-2.0 (Feb-Apr)
Ca	Canandaigua silt loam, neutral substratum	+1-1.0 (Nov-May)
Cc	Carlisle muck	+0.5-1.0 (Sep-June)
DwB	Dutchess-Cardigan complex, undulating, rocky	>6.0
HsA	Hoosic gravelly loam, nearly level	>6.0
HsC	Hoosic gravelly loam, rolling	>6.0
PwB	Pittstown silt loam, 3 to 8 percent slopes	1.5-3.0 (Nov-Apr)
PzB	Punsit silt loam, 3 to 8 percent slopes	0.5-1.5 (Feb-Apr)
Ur	Urban land	>2.0

Aquifer mapping was reviewed to determine if the project site is located over a sole source, primary, or principal aquifer. The EPA Soil Source Aquifers Map shows that there are no sole source aquifers within Dutchess County. The NYSDEC "Primary Aquifers in New York State" Map shows that the only primary aquifer within Dutchess County is located in Fishkill. The NYSDEC "Primary and Principal Aquifers in New York State" Map shows that there are several primary or principal aquifers within Dutchess County. Since the only primary aquifer within Dutchess County is located in Fishkill, the remaining aquifers shown are principal aquifers. The United States Aquifer Map website shows the edge of the carbonate-rock aquifer, which is a principal aquifer, is located approximate 0.5 miles to the south of the property and that no part of the property is located over

this aquifer. Therefore, the Proposed Action is not located over a sole source, primary, or principal aquifer.

3.E.1.2 Surface Waters

There are two streams located in the eastern and northwestern portions of the property (*Figure 3.E-1*). The eastern stream is identified as #H-95-10-1-1, classified by the NYSDEC as a Class "C"[36] watercourse, and is not regulated by the NYSDEC. The northwestern stream is identified as #H-101-4-2-1, classified by the NYSDEC as a Class "B" watercourse, and regulated by the NYSDEC.

All waters of the State are provided a class and standard designation based on existing or expected best usage of each water or waterway segment. The classifications are as follows:

- The classification AA or A is assigned to waters used as a source of drinking water.
- Classification B indicates a best usage for swimming and other contact recreation, but not for drinking water.
- Classification C is for waters supporting fisheries and suitable for non - contact activities.
- The lowest classification and standard is D.

Waters with classifications A, B, and C may also have a standard of (T), indicating that it may support a trout population, or (TS), indicating that it may support trout spawning (TS). Special requirements apply to sustain these waters that support these valuable and sensitive fisheries resources. A Protection Of Waters Permit is required for disturbing the bed or banks[37] of a stream with a classification and standard of C(T) or higher (disturbance may be either temporary or permanent in nature).

Some examples of activities requiring this permit are:

- Placement of structures in or across a stream (i.e., bridges, culverts or pipelines);
- Fill placement for bank stabilization or to isolate a work area (i.e., rip-rap or coffer dams);
- Excavations for gravel removal or as part of a construction activity;
- Lowering stream banks to establish a stream crossing; and
- Utilization of equipment in a stream to remove debris or to assist in-stream construction.

The eastern stream (#H-95-10-1-1) originates from the Ye Olde Apple Orchard Pond, which is approximately 120 feet to the north of the property, and is a subtributary to Sprout Creek. The onsite portion of the stream is approximately 1,890 linear feet in length and travels in a southerly

[36] According to *6 NYCRR Article 2, Classifications and Standards of Quality and Purity*. The classification of a stream defines the level of purity or quality for any waters in relation to their reasonable and necessary use with a Class A being the highest quality water with the most restricted uses and a Class D stream being the lowest quality water with the least restrictions on use.

[37] "Banks" means that land area immediately adjacent to and which slopes toward the bed of a watercourse and which is necessary to maintain the integrity of the watercourse. A bank will not be considered to extend more than 50 feet horizontally from the mean high water line; with the following exception: Where a generally uniform slope of 45 degrees (100%) or greater adjoins the bed of a watercourse, the bank is extended to the crest of the slope or the first definable break in slope, either a natural or constructed (road, or railroad grade) feature lying generally parallel to the watercourse.

direction to the southern property line, where it leaves the property flowing in a south/southeast direction and ultimately into the Sprout Creek. This stream is not regulated by the NYSDEC. Areas within 100 feet of this stream are red maple swamp and scrub/shrub thicket as well as improvements including the access road into the property and associated features.

The northwestern stream (#H-101-4-2-1) originates offsite to the southwest of the southern property line and is a subtributary to Wappinger Creek. The onsite portion of the stream is approximately 1,580 linear feet in length and travels in a northeasterly direction where it leaves the property flowing in a northeast direction into Lake Oniad, which is located approximately 600 feet to the north of the property. The released stormwater from Lake Oniad flows in a northwesterly direction and ultimately into the Wappinger Creek. This stream is regulated by the NYSDEC. Areas within 100 feet of this stream are dense forested Red Maple Swamp associated with NYSDEC Wetland WF-6.

3.E.1.3 Floodplains

The property is located within Zone X (other flood areas) and Zone X (other areas) according to the Flood Insurance Rate Map (FIRM) for the Town of Wappinger, New York.[38] The zones are shown in *Figure 3.E-2*. Zone X (other flood areas) is defined as "areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood".[39] Zone X (other areas) is defined as "areas determined to be outside 500-year floodplain".[40]

3.E.1.4 Design Points

The study area consists of an overall watershed that encompasses approximately 717.86 acres and contains the entire property. The overall watershed was broken down into smaller watersheds, or subcatchments, to allow for analysis of runoff conditions at several locations throughout the study area. Each of these locations was defined as a Design Point (DP) in order to compare the effects of the proposed development. Descriptions of each of the selected design points are provided below:

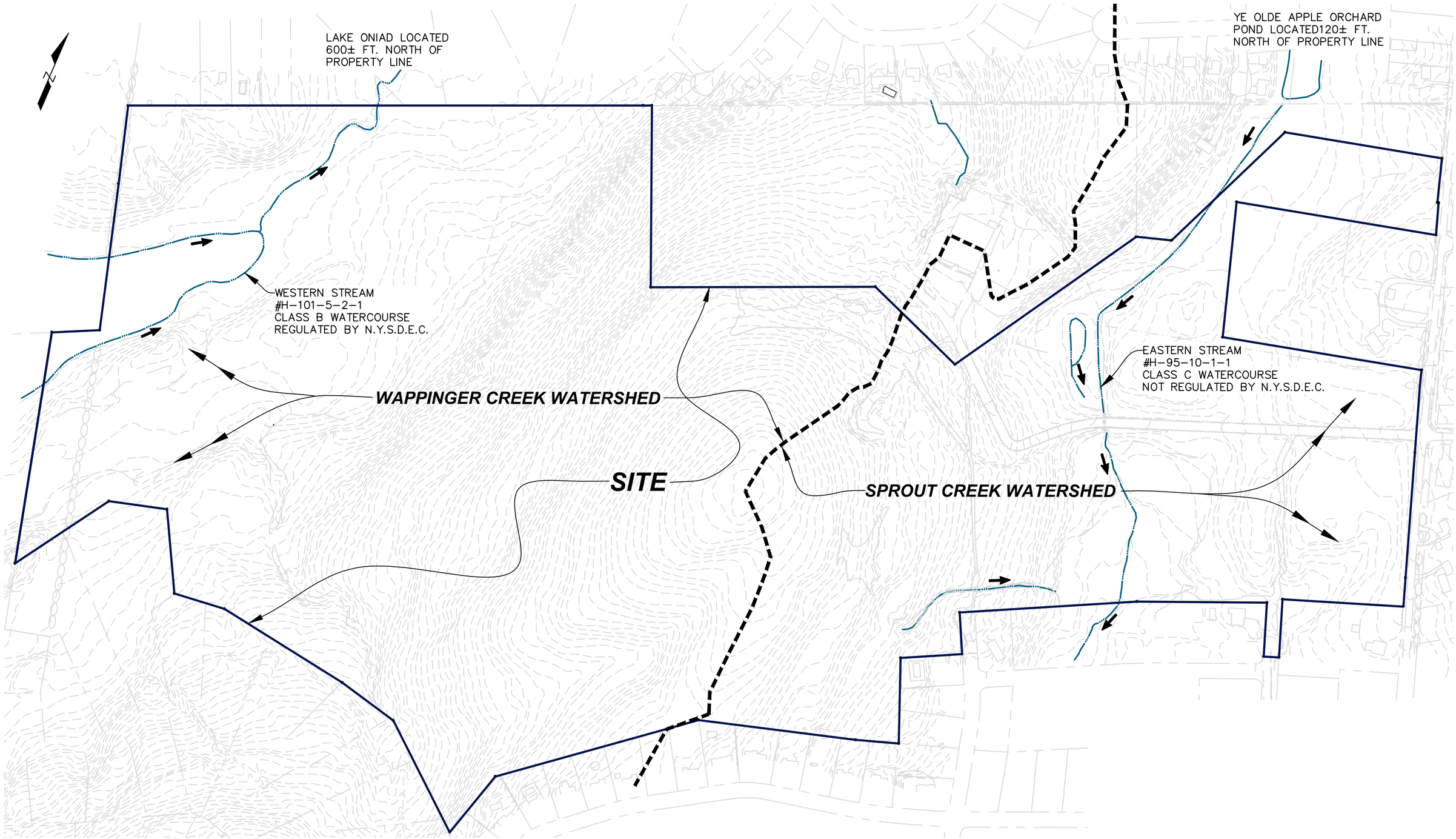
- Design Point 1: Entrance to culvert beneath Tor Road.
  Onsite and offsite stormwater runoff flows to the onsite stream, which continues offsite to a culvert beneath Tor Road.

- Design Point 2: Stream entrance to eastern part of Lake Oniad.
  Onsite and offsite stormwater runoff flows to a stream that discharges to Lake Oniad.

- Design Point 3: Stream entrance to southern part Lake Oniad.
  Onsite and offsite stormwater runoff flows to a stream that discharges to Lake Oniad.

The pre-development watersheds and design points are shown in *Figure 3.E-3* through *Figure 3.E-5*.

[38] FIRM Panel 4 of 7, Community Panel Number 361387 0004 B, Map revised date September 22, 1999.
[39] Ibid.
[40] Ibid.



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LEGEND

- WATERSHED BOUNDARY
- EXISTING STREAM
- FLOW ARROWS

HILLTOP VILLAGE AT WAPPINGER

ON-SITE STREAM RESOURCES

FIGURE 3.E-1
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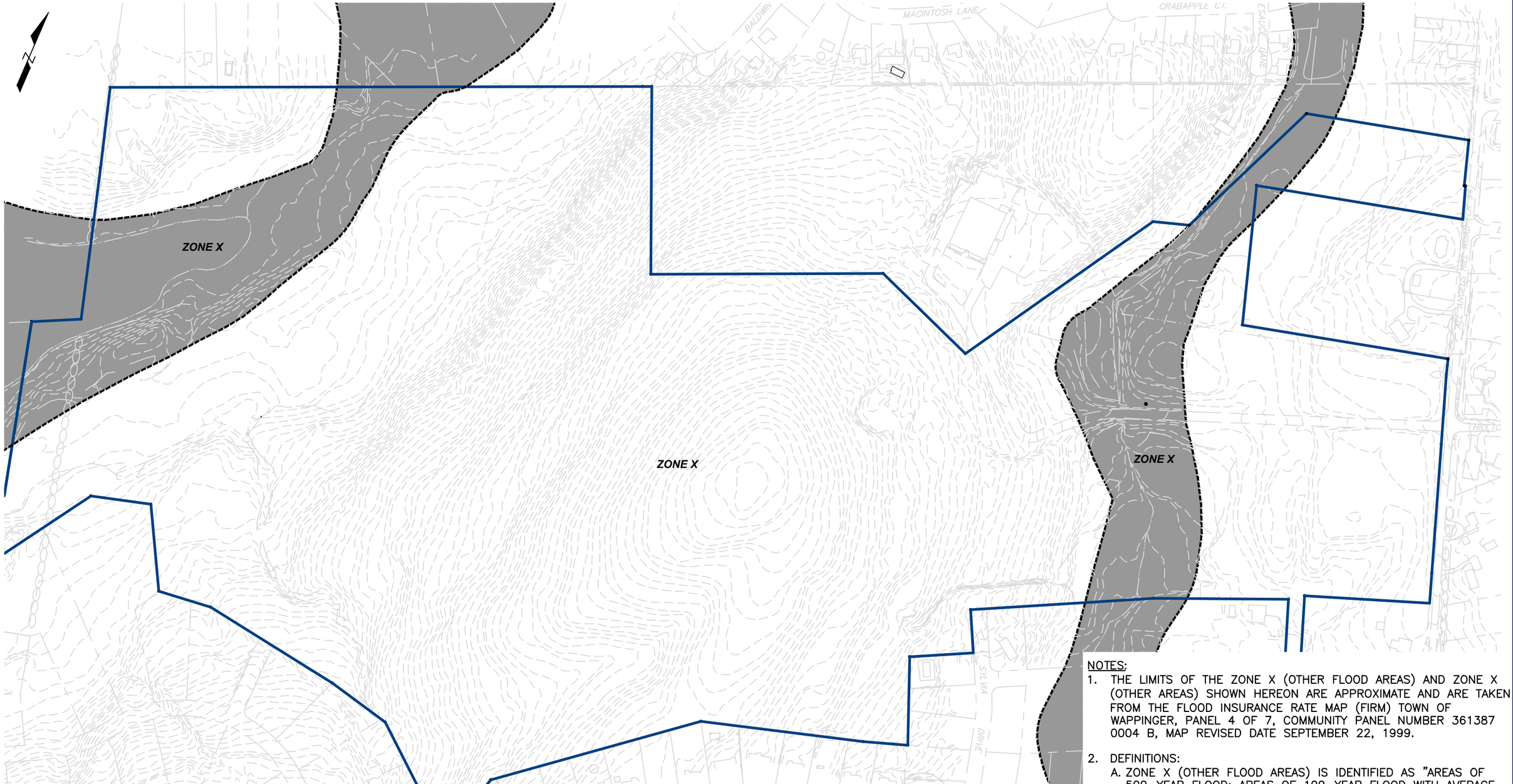
SCALE: 1"=300



NOTES:

1. THE LIMITS OF THE ZONE X (OTHER FLOOD AREAS) AND ZONE X (OTHER AREAS) SHOWN HEREON ARE APPROXIMATE AND ARE TAKEN FROM THE FLOOD INSURANCE RATE MAP (FIRM) TOWN OF WAPPINGER, PANEL 4 OF 7, COMMUNITY PANEL NUMBER 361387 0004 B, MAP REVISED DATE SEPTEMBER 22, 1999.

2. DEFINITIONS:
   A. ZONE X (OTHER FLOOD AREAS) IS IDENTIFIED AS "AREAS OF 500–YEAR FLOOD; AREAS OF 100–YEAR FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREA LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 100–YEAR FLOOD".

   B. ZONE X (OTHER AREAS) IS IDENTIFIED AS "AREAS DETERMINED TO BE OUTSIDE 500–YEAR FLOODPLAIN".

LEGEND

- ZONE X (OTHER FLOOD AREAS)
- ZONE X (OTHER AREAS)
- FLOODPLAIN LMITS

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HILLTOP VILLAGE AT WAPPINGER

FLOODPLAIN MAP

FIGURE 3.E-2

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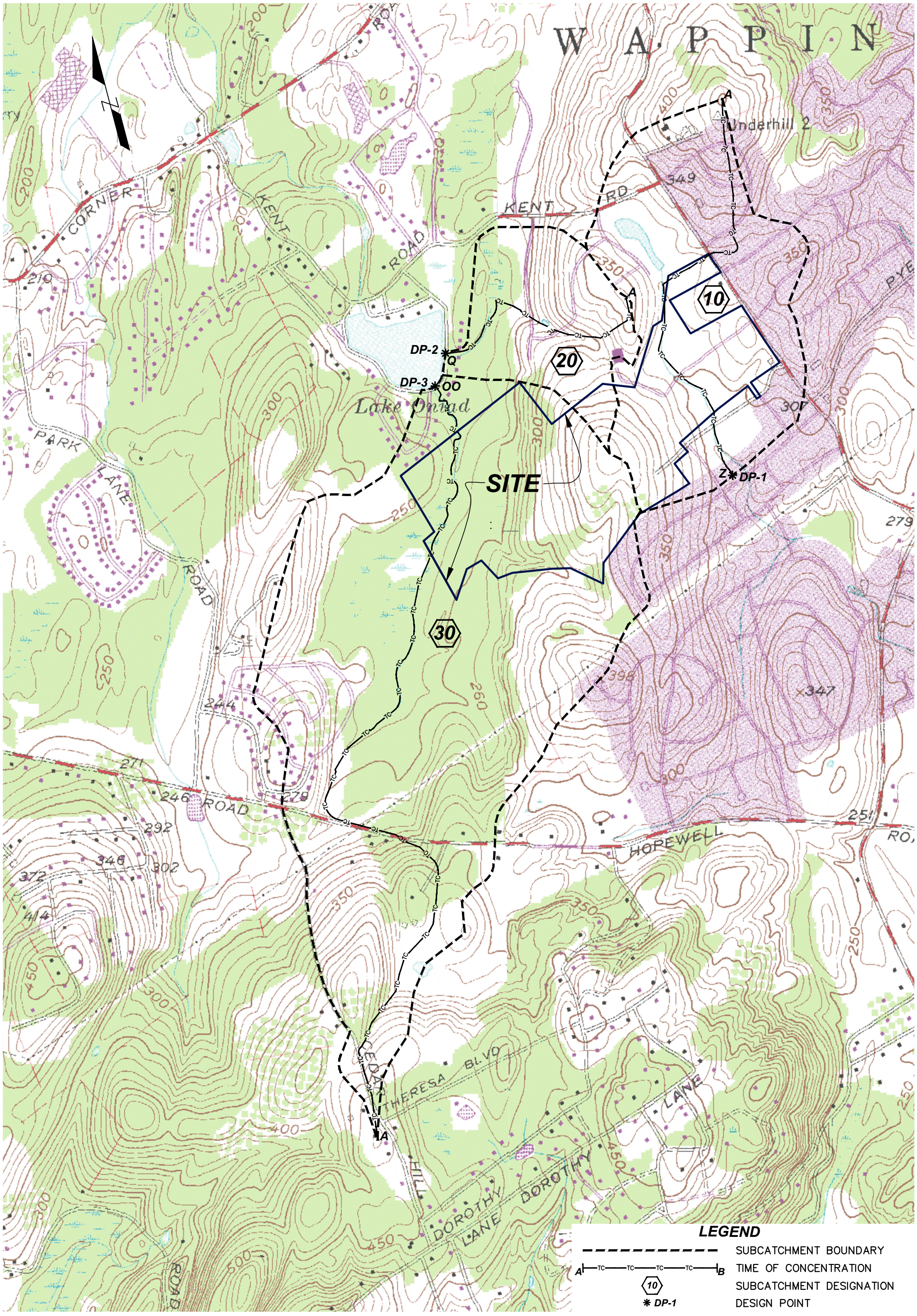
SCALE: 1"=300'



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HILLTOP VILLAGE AT WAPPINGER

PRE-DEVELOPMENT WATERSHED DELINEATION MAP I

FIGURE 3.E-3
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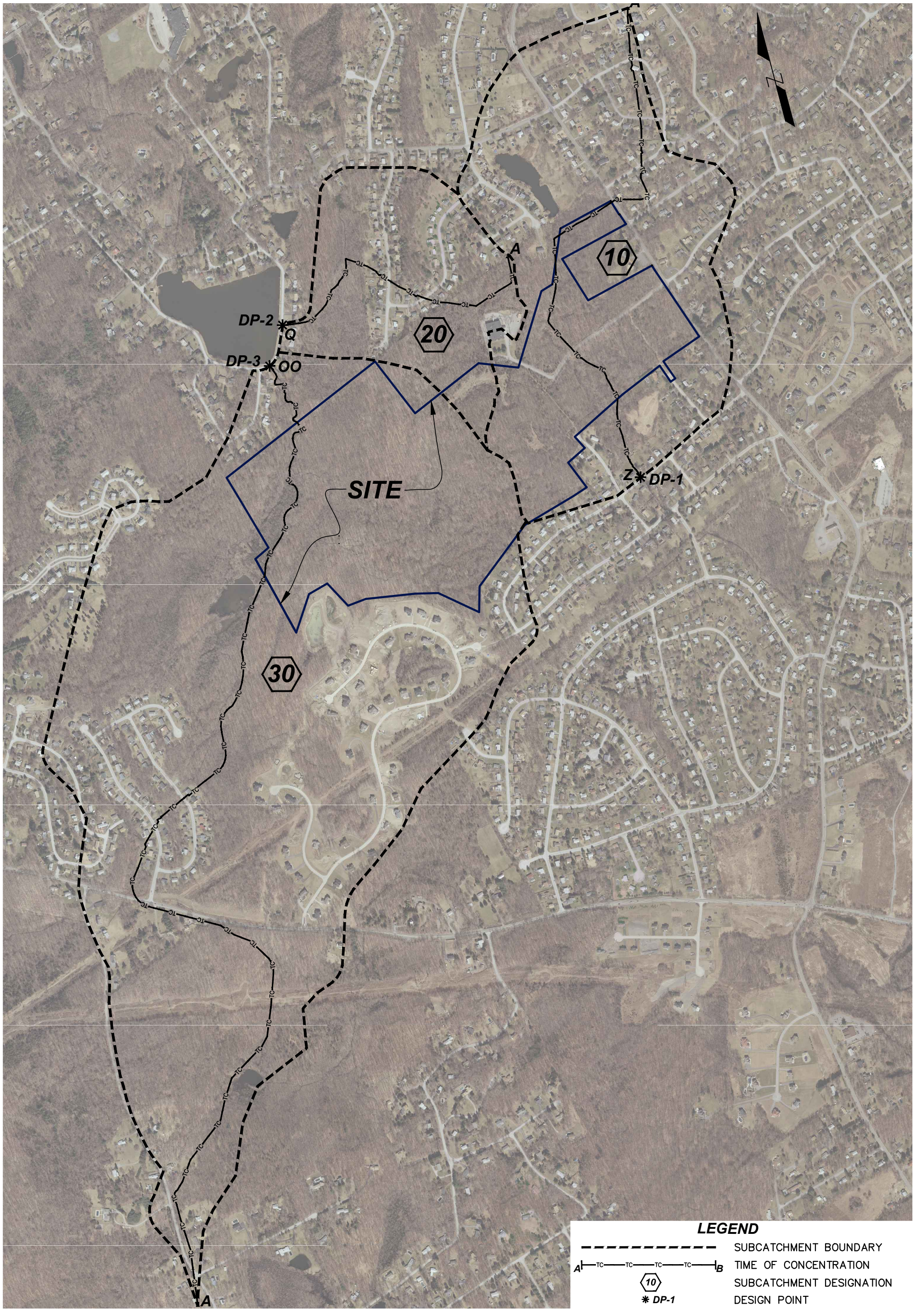
SCALE: 1"=1,000'



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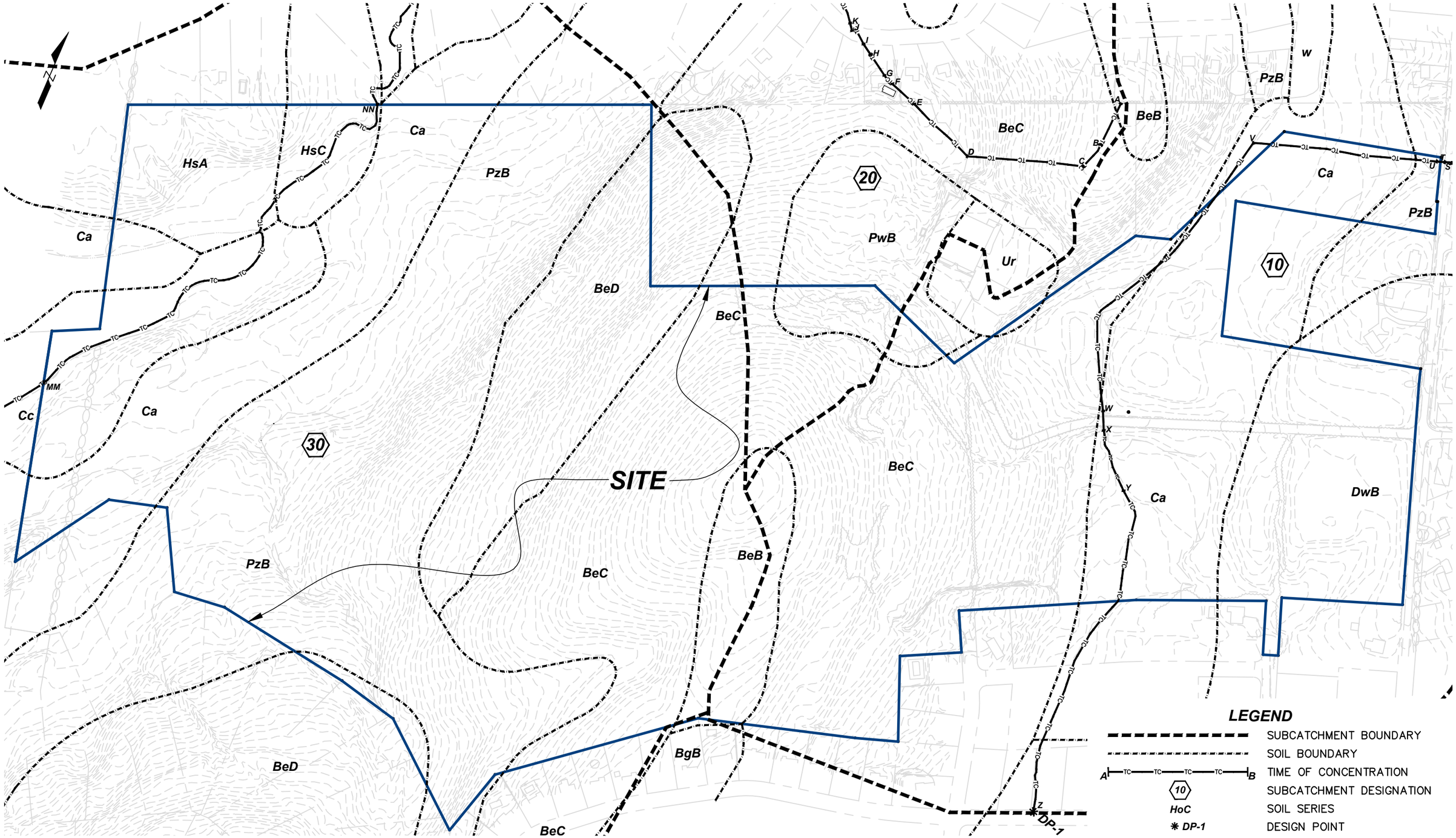
HILLTOP VILLAGE AT WAPPINGER

PRE-DEVELOPMENT WATERSHED DELINEATION MAP II

FIGURE 3.E-4
DATE: 02/2012
PAGE 212
SCALE: 1"=800'



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HILLTOP VILLAGE AT WAPPINGER

PRE-DEVELOPMENT WATERSHED DELINEATION MAP III

FIGURE 3.E-5

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SCALE: 1"=300

3.E.1.5 Pre-Development Peak Discharge Rates

The pre-development peak discharge rates are summarized in *Table 3.E-2* below.

Table 3.E-2: Pre-Development Peak Discharge Rates

DP	1-year Event (cfs)	10-year Event (cfs)	25-year Event (cfs)	100-year Event (cfs)
1	63.93	203.40	274.14	421.13
2	27.49	84.33	113.07	172.35
3	54.38	208.74	292.90	473.88

Refer to Appendix G of the SWPPP provided in *Appendix C.3* for the complete pre-development analysis.

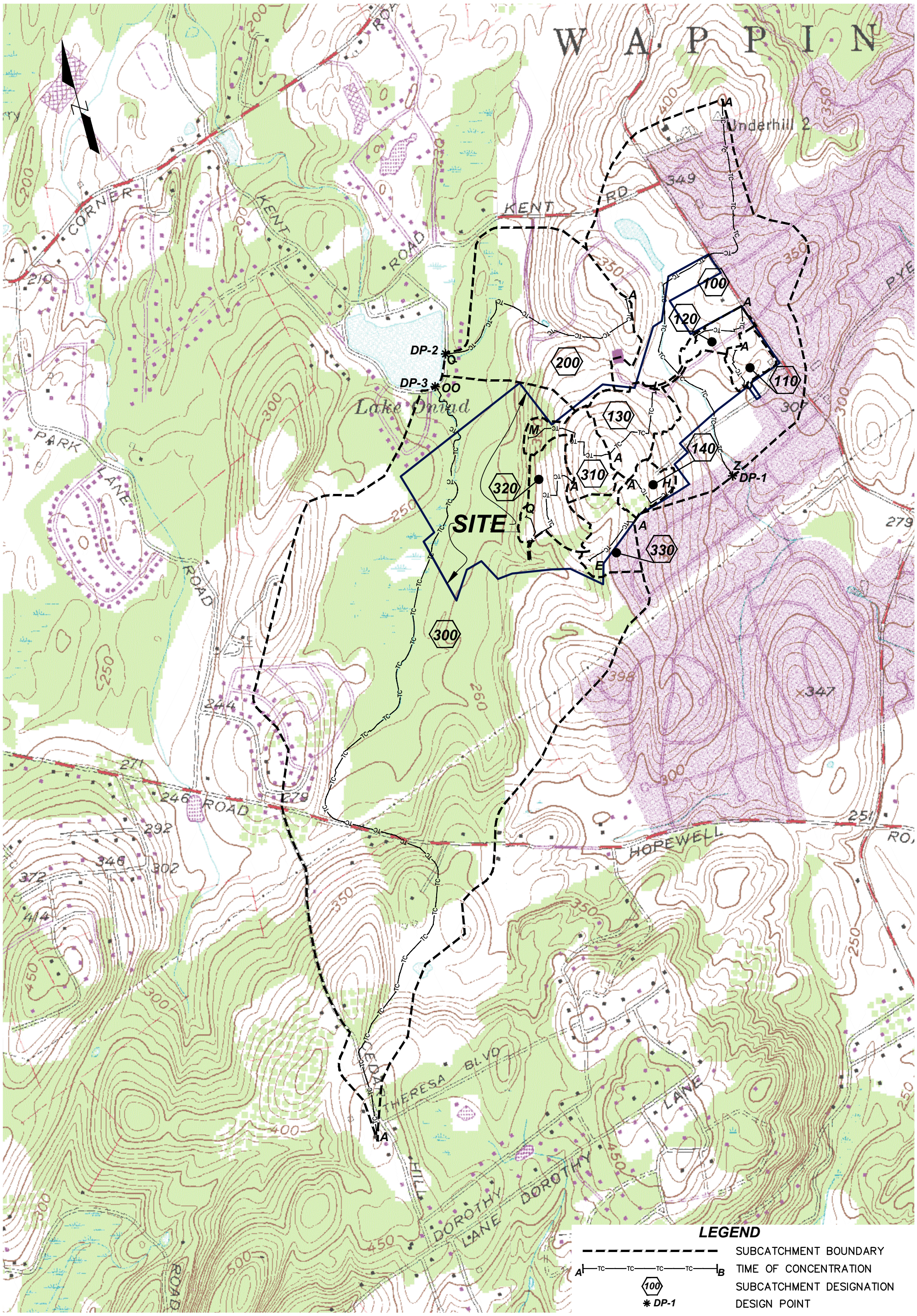
3.E.2 Potential Impacts

Impacts to water resources often involve both direct and indirect impacts. Direct impacts as a result of the Proposed Action could include building in a floodplain; and changing the hydrologic and hydraulic characteristics of a watershed. Indirect impacts as a result of the Proposed Action could consist of the degradation of water quality from stormwater runoff; an increase in runoff volume and/or a reduction in aquifer recharge due to increased impervious surface area; sediment deposition; nutrient enrichment of and pollutant accumulation in wetlands; or increased stream flow due to an increase in stormwater runoff volume.

3.E.2.1 Post-Development Conditions

As a result of the Proposed Action, approximately 89.81 acres, or 60 percent of the property will be within the Wappinger Creek watershed and approximately 59.53 acres, or 40 percent of the property will be within the Sprout Creek watershed. Even though there is a change in the amount of area located within the two watersheds, the post-development peak rate of runoff leaving the site will not adversely impact to the two watersheds and creeks are anticipated as a result of the development.

Stormwater runoff outside the residential development will continue to flow overland in the same direction as in the pre-development conditions. The proposed topography of the residential development will generally convey stormwater runoff via sheet flow to onsite catch basins within the paved roads and parking areas or to grass swales. Localized low and high points have been created to aid in the collection of stormwater runoff. The collected stormwater will be conveyed via a closed pipe network or via grass swales to stormwater management facilities for treatment. The treated stormwater will be released in a controlled manner to the onsite wetlands prior to entering the northwestern and eastern streams. Stormwater runoff will be released from the site at a rate equal to or less than that which existed prior to development of the property. The post-development watersheds and design points are shown in *Figure 3.E-6* through *Figure 3.E-8*.



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HILLTOP VILLAGE AT WAPPINGER

POST-DEVELOPMENT WATERSHED DELINEATION MAP I

FIGURE 3.E-6
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SCALE: 1"=1,000'

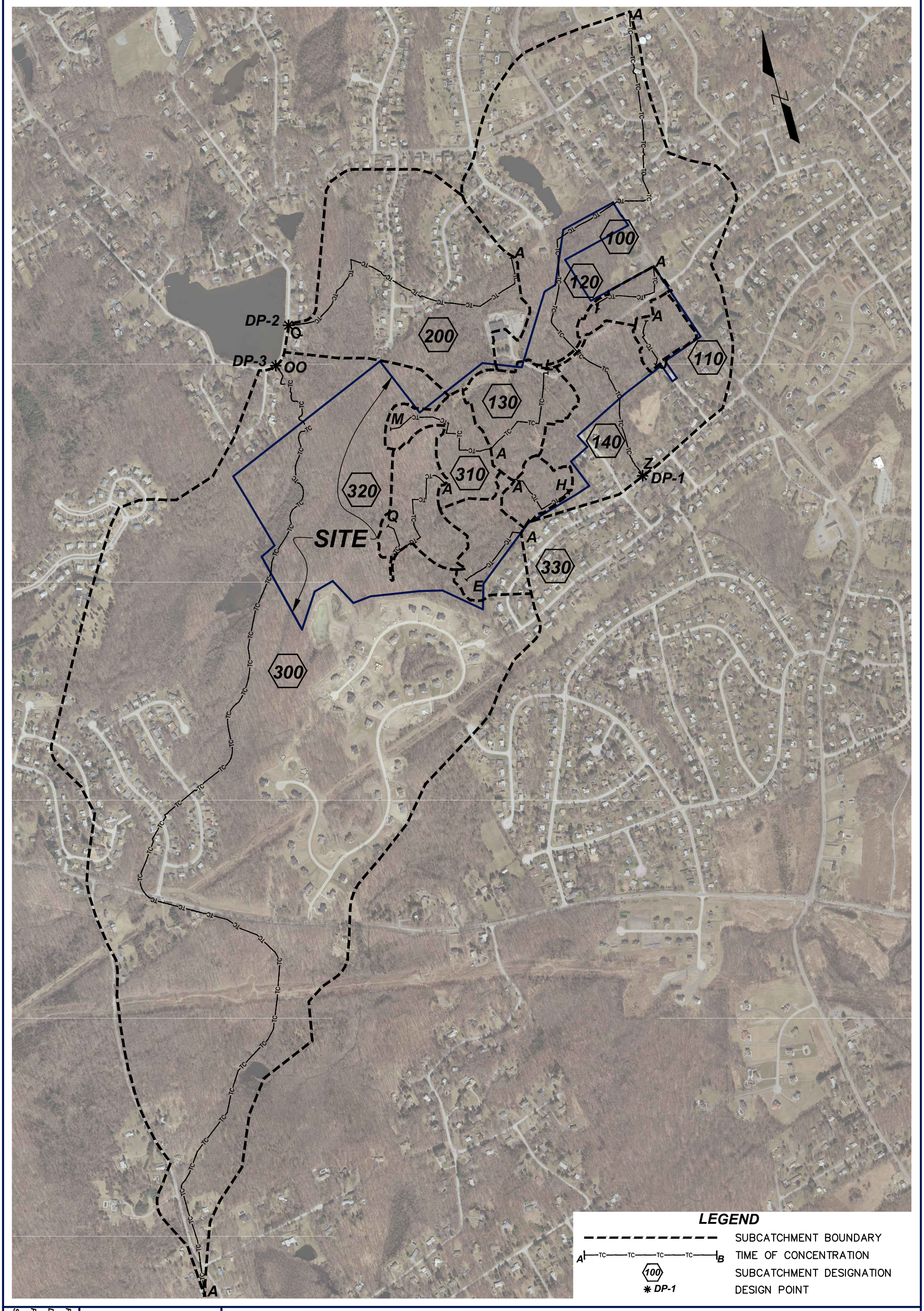

FIGURE 3.E-7
DATE: 02/2012
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SCALE: 1"=800'

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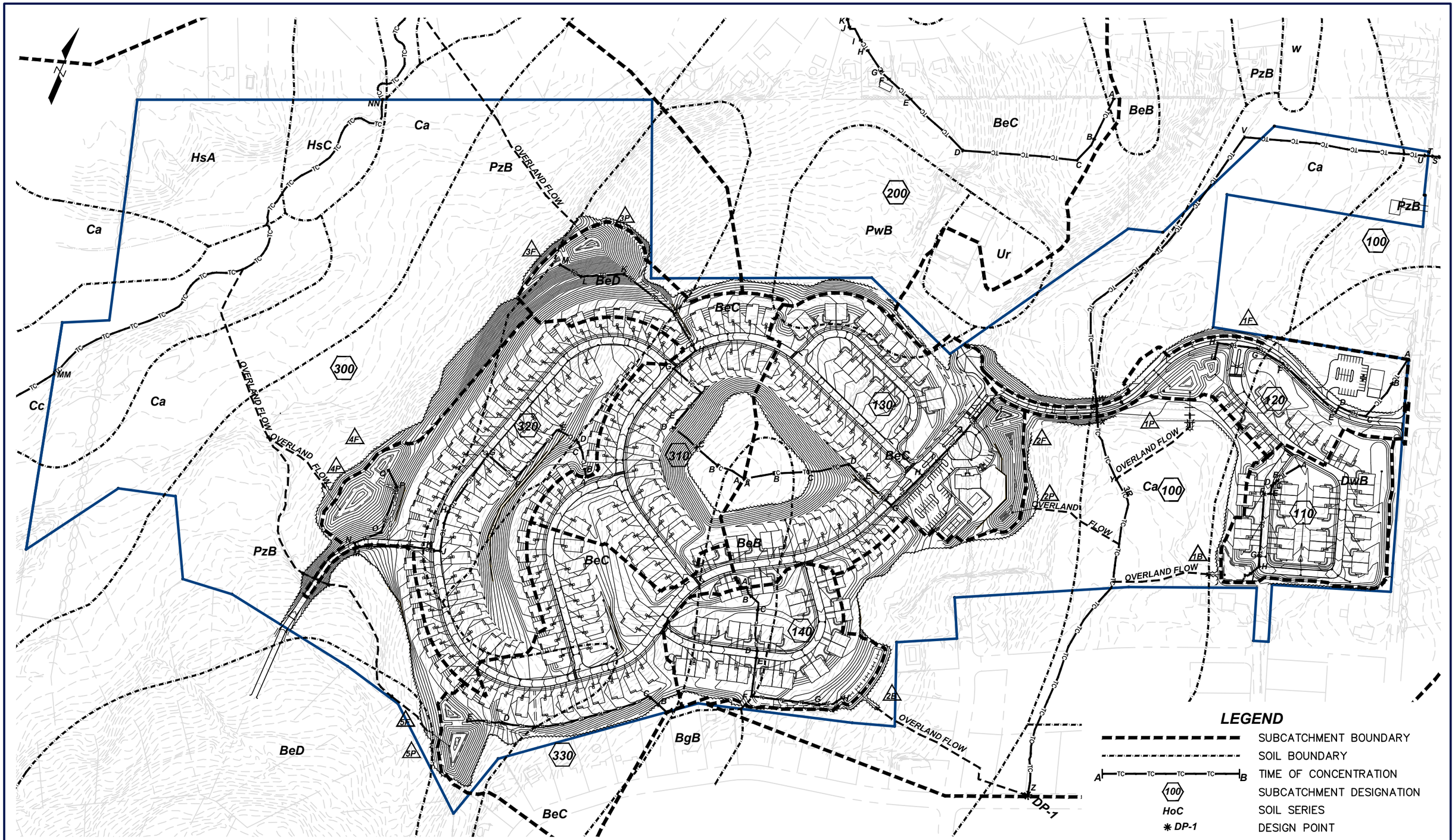
HILLTOP VILLAGE AT WAPPINGER

POST-DEVELOPMENT WATERSHED DELINEATION MAP II



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HILLTOP VILLAGE AT WAPPINGER

POST-DEVELOPMENT WATERSHED DELINEATION MAP III

FIGURE 3.E-8

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SCALE: 1"=300'

3.E.2.2 Permitting

The required Federal, State, and/or Local permits related to stormwater, wetlands, and surface waters for this project include:

- NYSDEC, SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-10-001).
- NYSDEC, Section 401 "Water Quality Certification" of the Federal Clean Water Act.
- USACE, Section 404 Clean Water Act.
- USACE, Nation Wide 29 Residential Development (NW29).
- Town of Wappinger, "Wetland Permit".

3.E.2.3 Water Pollution Sources

Stormwater runoff from developed land is recognized as a significant contributor of pollution that can adversely affect the quality of the receiving waters. Development of the site will create impervious areas, which can alter the hydrologic characteristics of a watershed and could have impacts on water resources, since pollutants and sediment carried by stormwater runoff can degrade the water quality of receiving waters.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment can also destroy aquatic habitats.

- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.

- Debris, such as plastic bags, six-pack rings, bottles, and cigarette butts, washed into water bodies can choke, suffocate, or disable aquatic life.

- Household hazardous wastes, such as insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids, can poison aquatic life. Land animals and people can become sick from eating diseased fish and shellfish or ingesting polluted water.

- Polluted stormwater can often affect drinking water sources, which can affect human health and increase drinking water treatment costs.

The potential pollutant sources during construction of the Proposed Action include sediment, vehicle fuels and lubricants, chemicals associated with building construction, and building materials. The potential pollution sources after construction include sediment, fertilizers, debris, litter, and potential auto fluids from roadways. The Proposed Action will implement Best Management Practices (BMPs), which will minimize the water quality impacts to receiving waters. Therefore, no adverse impacts to any onsite watercourses or offsite downstream watercourses and/or water bodies are anticipated.

3.E.2.4 Onsite and Offsite Watercourse Hydrology Analysis

Temporary erosion and sediment control measures will be implemented during construction to minimize soil erosion and control sediment transport offsite. Permanent erosion and sediment control measures will be implemented after construction to control the quality and quantity of stormwater runoff from the developed site. The proposed stormwater management facilities will treat the stormwater runoff generated from the proposed development prior to discharging in a controlled manner to the two onsite streams located within the onsite wetlands. Therefore, no adverse impacts to any onsite watercourses or offsite downstream watercourses and/or water bodies are anticipated.

3.E.2.5 Future Development Parcel

Figure 2.C-40 shows an example use of the parcel, which has a total impervious area of 19,197 square feet (0.44 acres). Three different scenarios were developed in order to fully evaluate any potential impacts associated with the Future Development parcel. The scenarios are as follows:

1. The final project plans for this parcel have a total impervious area of 19,197 square feet (0.44 acres).

2. The final project plans for this parcel have a total impervious area less than 19,197 square feet (0.44 acres).

3. The final project plans for this parcel have a total impervious area greater than 19,197 square feet (0.44 acres).

The potential impacts are discussed below.

Scenario 1 - Stormwater management pond 1P has been designed to treat the stormwater runoff generated from 19,197 square feet (0.44 acres) of impervious area. There are no anticipated impacts as long as the stormwater management facilities are properly constructed and maintained in accordance with the SWPPP and project plans.

Scenario 2 - The amount of stormwater runoff will be less than the amount generated in Scenario 1. As a result, stormwater management pond 1P will be unaffected. There are no anticipated impacts as long as the stormwater management facilities are properly constructed and maintained in accordance with the SWPPP and project plans.

Scenario 3 - There will be an increase in the amount of stormwater runoff generated as compared to Scenario 1. Stormwater management pond 1P will have to be evaluated to determine if there is adequate capacity to treat and detain the additional stormwater runoff volume associated with the amount of impervious area over 19,197 square feet. If there is adequate capacity, then there are no anticipated impacts as long as the stormwater management facilities are properly constructed and maintained in accordance with the SWPPP and project plans. If there is inadequate capacity, additional stormwater management measures will have to be incorporated on the parcel to treat the additional generated stormwater runoff.

3.E.3 Mitigation Measures

3.E.3.1 Avoidance, Minimization, and Mitigation of Impacts

To avoid, minimize, or mitigate direct and indirect impacts to watercourses and surface waters the following were incorporated:

- Erosion and Sediment Control measures were designed in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control*, latest revision, to minimize sedimentation impacts on the water quality of streams and wetlands, and to protect wetland functions and values.

- Standard stormwater Best Management Practices (BMPs) were designed in accordance with the *New York State Stormwater Management Design Manual*, latest revision, to minimize stormwater runoff to streams and wetlands to protect aquatic functions and values.

- Stormwater management facilities were designed to provide the level of treatment necessary to ensure that stormwater discharges will not result in degradation of the physical, chemical or biological integrity of the receiving waters.

- Pollution prevention controls (a.k.a. good housekeeping practices) were designed to maintain a clean and orderly work environment as well as control the possible exposure of harmful substances and materials to stormwater runoff.

- Application of green infrastructure practices, which incorporates non-structural and natural approaches to reduce the effects on watersheds by conserving natural areas, reducing impervious cover, and better integrating stormwater treatment.

- Establishment of a 100 foot buffer around the regulated wetlands in accordance with NYSDEC Chapter X Part 664 "Freshwater Wetlands Maps and Classification" and Town of Wappinger Town Code Chapter 137 "Freshwater Wetland, Waterbody and Watercourse Protection".

3.E.3.2 Mitigation of Water Pollution Sources

Potential water pollution sources will be mitigated by the proposed stormwater management facilities. Stormwater runoff from the proposed development will be collected and conveyed to the proposed stormwater management ponds (i.e., micropool extended detention pond) and bioretention areas via the closed pipe network system or grass swales. All of the proposed catch basins have sumps that will capture sediment, debris, and associated pollutants prior to conveying the stormwater runoff to the proposed stormwater management facilities. Sediment basins have been provided, which will allow sediment to further settle from the incoming stormwater runoff prior to entering the stormwater management facilities. The proposed stormwater management facilities have been designed in accordance with the *NYS Stormwater Management Design Manual*, latest revision. The proposed stormwater management facilities are discussed below.

Stormwater Management Ponds - The proposed stormwater management ponds are all wet ponds. The principle behind the wet pond is that incoming storm runoff displaces old water, which flows out of the pond, and the new runoff is stored in a permanent pool in the pond until the next storm. This creates long detention times, high pollutant removal rates, and provides flood protection. The primary pollutant removal mechanism is sedimentation. Significant loads of suspended pollutants, such as metals, nutrients, sediment, and organics, can be removed by sedimentation. Dissolved contaminants are removed by a combination of processes: physical adsorption to bottom sediments and suspended fine sediments, natural chemical flocculation, bacterial decomposition, and uptake by aquatic plants and algae. Wet ponds have a moderate to high capacity for removing most urban pollutants, depending on how large the volume of the permanent pool is in relation to the runoff from the surrounding watershed; the larger the pond, the greater the removal rate. A unique feature of wet ponds is the presence of aquatic plants and algae that can remove significant amounts of soluble nutrients from stormwater, effectively reducing downstream algal growth. Since wet ponds have the capability of removing soluble nutrients, they are suitable for sites where nutrient loadings are expected to be high.

Bioretention Areas - Bioretention is practice that uses the chemical, biological and physical properties of plants, microbes and soils for removal of pollutants from stormwater runoff. Unlike various other practices that control only peak discharge, bioretention can be designed to mimic the pre-existing hydrologic conditions by treating the associated runoff volumes. Bioretention facilities provide opportunities for runoff infiltration, filtration, storage, and for water uptake by vegetation. Bioretention facilities can be distributed across a development which can help in controlling runoff close to the source where it is generated.

Stormwater Management Facility Inspection & Maintenance - Inspection and maintenance of stormwater management facilities are important. Proper inspection and maintenance will ensure the stormwater management facilities are kept in proper working order to maintain their intended design function and prevent any potential damages that may result from poorly maintained stormwater management facilities. Post-construction inspection and maintenance procedures have been prepared for various site components and stormwater management facilities. Properly maintained stormwater management facilities will not adversely impact adjacent or downstream properties or receiving water bodies, watercourses or wetlands.

3.E.3.3 Green Infrastructure Planning Practices

Green infrastructure planning includes measures for preservation of natural features of the site. Green infrastructure techniques utilize the natural features of the site and promote runoff reduction. These techniques were incorporated into the planning, design and layout of the Proposed Action which include conservation of natural areas; preservation of naturally vegetated buffers; reduction in the amount of clearing and grading; provision of open space and its design; tree conservation and new tree plantings; rooftop and overland flow disconnection; vegetated open channels; and volume reduction through alternative practices.

Conservation of Natural Areas - Important natural areas and features were identified. These areas and features include the wetlands, streams, wetland buffer areas, areas containing steep slopes, and portions of the forested areas. The majority of these areas will remain undisturbed, which will preserve the pre-development hydrology, aid in reducing stormwater runoff and pollutant load, and promote soil stabilization.

Preservation of Naturally Vegetated Buffers - A 100 foot buffer has been established around the NYSDEC, USACE Federal, and Town regulated wetlands in accordance with the NYSDEC and Town regulations. The buffers cover approximately 26.53 acres of the site. The majority of the buffer area will remain undisturbed, which will improve water quality, lower the velocity of discharged stormwater, promote soil stabilization, provide filtration and infiltration of stormwater runoff into the underlying soils, and provide thermal reductions.

Reduction in the Amount of Clearing and Grading - Clearing and grading activities will be kept to the minimum amount needed for construction of the development. The site will be constructed in phases. By phasing construction, the amount of land disturbance occurring at a single time will be limited, allow for one phase to be stabilized prior to moving onto the next, and avoid mass grading of the site. Undisturbed vegetated areas will aid in reducing stormwater runoff and pollutant load and promote soil stabilization.

Provision of Open Space and its Design - A minimum of 50 percent of the gross site areas is required by the Town of Wappinger Code to be preserved as open space. As previously discussed, important natural areas and features were identified. These areas and features include the wetlands, streams, wetland buffer areas, areas containing steep slopes, and portion of the forested areas. The proposed layout is designed to reduce the overall amount of impervious coverage, clearing, and grading thus preserving more open space. Undisturbed open space will preserve the pre-development hydrology, aid in reducing stormwater runoff and pollutant load, and promote soil stabilization. The total proposed open space area is approximately 73.72 acres, or 51 percent of the site.

3.E.3.4 Runoff Reduction Techniques

Runoff reduction is best achieved through the reduction of the effective impervious surface area of the subcatchment and minimizing the amount of disturbed area. Green infrastructure techniques allow for reductions in the calculated runoff from contributing areas and the required water quality volume by using the natural features of the site and practices that promote runoff reduction.

Tree Conservation and New Tree Plantings - As previously discussed, portions of the forested areas will be preserved. Additional trees and landscaping are incorporated throughout the development. The stormwater management ponds are landscaped with a variety of plantings, including emergents and woody shrubs, to maximize the biological uptake of pollutants. Preserving the existing trees and adding additional ones will aid in reducing stormwater runoff, promote evapotranspiration, increase nutrient uptake, and provide shading and thermal reductions.

Rooftop and Overland Flow Disconnection - Roof top runoff will be directed to vegetated areas (i.e., grassed or landscaped areas) prior to flowing into the stormwater drainage system. Grass swales will also be used to convey stormwater runoff. Vegetated areas will improve water quality, lower the velocity of discharged stormwater, provide filtration and infiltration of stormwater runoff into the underlying soils, and provide thermal reductions.

Vegetated Open Channels - Grass swales are incorporated into the stormwater management design in order to convey stormwater runoff to either the closed pipe network or to the proposed stormwater management facilities. Grass swales will improve water quality, lower the velocity of

discharged stormwater, provide filtration and infiltration of stormwater runoff into the underlying soils, and provide thermal reductions.

Volume Reduction through Alternative Practices - Alternative practices, such as rain gardens, green roofs, stormwater planters, cisterns, and permeable paving, were evaluated to determine the feasibility of incorporation into the stormwater management design. The Proposed Action is a cluster development and the homes are clustered closer together in order to preserve more of the property as open space. As a result, there is less opportunity to use these alternative practices. Therefore, standard stormwater management practices were used and these alternative practices were not incorporated.

3.E.3.5 Post-Development Peak Discharge Rates

The post-development peak discharge rates are summarized in *Table 3.E-3* below.

Table 3.E-3: Post-Development Peak Discharge Rates

DP	1-year Event (cfs)	10-year Event (cfs)	25-year Event (cfs)	100-year Event (cfs)
1	63.22	203.28	275.55	428.72
2	26.02	79.81	107.01	163.12
3	51.73	200.41	281.74	455.01

Refer to Appendix H of the SWPPP in *Appendix C.3* for the complete post-development analysis.

3.E.3.6 Operation and Maintenance Plan

Post-construction inspections and maintenance will be performed by the HOA. In accordance with the Town of Wappinger Town Code, a formal maintenance agreement for the stormwater management facilities shall be executed and binding on all subsequent land owners. The formal maintenance agreement shall be recorded in the office of the Dutchess County Clerk as a deed restriction on the property.

Inspections and maintenance for the various site components and stormwater management facilities shall be performed in accordance with the accompanying project plans and the Stormwater Pollution Prevention Plan. A summary of the general site inspection and maintenance parameters is provided in *Table 3.E-4* below. A summary of the stormwater management practice inspection and maintenance parameters are provided in *Table 3.E-5* and *Table 3.E-6* below.

Table 3.E-4: General Site Post-Construction Inspection and Maintenance Table

Maintenance Item	Frequency	Description of Inspection Parameters	Description of Remedy Procedures
Site Structures	Annual & After Major Storms	-Accumulated sediment in catch basin sumps -Accumulated debris and litter -Damage or fatigue of storm structures or associated components -Accumulation of pollutants, including oils or grease, in catch basin sumps	-Remove -Remove -Replace and/or repair, as necessary -Remove pollutants from catch basins. Replace and/or repair pollutant source.
Pavement	Biannual/ Annual	-Accumulated sediment in paved areas -Accumulated debris and litter	-Remove (sweep min. 2 times/year) -Remove
Embankments	Annual	-Differential settlement of embankments -Embankment erosion -Animal burrows -Cracking, bulging, or sliding of embankment	-Stabilize and restore to original specs - Stabilize and restore to original specs -Remove - Stabilize and restore to original specs
Grass and Landscaped areas	Annual	-Vegetation: 80% coverage + less than 15% invasive plant species -Unauthorized plantings -Undesirable vegetative growth -Accumulated debris and litter	-Restore original specs -Remove -Mow a min. of 3 times/year. May increase for aesthetic reasons. -Remove
Winter Maintenance	Monthly	-Accumulation of snow and ice on catch basins, inlet and outlet structures, and end sections -Stock piled snow near inlets and outlets -Remaining deicing materials	-Remove -Remove -Remove in early spring by sweeping
Swales	Monthly	-Erosion of side slopes -Formation of rills or gullies -Excess grass growth -Undesirable vegetative growth -Accumulated debris, litter, or sediment -Residual deicing materials (sand)	- Stabilize and restore to original specs -Repair and restore to original specs -Mow -Remove -Remove -Remove & replace any damaged vegetation

Table 3.E-5: Stormwater Pond Post-Construction Inspection and Maintenance Table

Maintenance Item	Frequency	Description of Inspection Parameters	Description of Remedy Procedures
Pond Embankment	Annual	-Vegetation: 80% coverage + less than 15% invasive plant species -Embankment erosion -Animal burrows -Unauthorized plantings -Cracking, bulging, or sliding of embankment -Function of pond drain -Seeps and leaks of downstream face -Rip-rap failure -Vertical alignment of top of embankment "as-built" -Spillway weir erosion and debris	- Restore original specs -Stabilize & restore to original specs -Remove -Remove -Stabilize & restore to original specs -Clean as necessary -Stabilize & repair any breach -Restore rip-rap cover as necessary -Add/remove material & stabilize to original specs -Clean debris and add rip-rap as necessary
Outlet Structures	Annual & After Major Storm Events	-Trees and shrubs around inlets, outlets, and end sections -Rip-rap failure -Accumulated debris and sediment	-Remove -Restore rip-rap cover as necessary -Remove
Permanent Pool	Monthly	-Undesirable vegetative growth -Floating or floatable debris -Visible pollution -Shoreline problem	-Remove -Remove -Remove -Stabilize and restore to original specs
Sediment Forebay	Monthly	-Accumulated sediment -Accumulated debris and trash	-Remove every 5 to 6 years or when 50% of total forebay capacity is lost -Remove

Table 3.E-5: Stormwater Pond Post-Construction Inspection and Maintenance Table (continued)

Maintenance Item	Frequency	Description of Inspection Parameters	Description of Remedy Procedures
Other Pond Areas	Monthly	-Vegetation: 80% coverage + less than 15% invasive plant species -Undesirable vegetative growth -Undesirable woody vegetation -Standing water/wet spots -Sediment and/or trash accumulation	-Restore to original specs -Remove -Remove -Add/remove fill as necessary to restore pond base elevations -Remove
Wetland Plantings	Monthly	-Survival of desired wetland plants -Plants: 80% coverage + less than 15% invasive plant species after 2nd growing season -Distribution of plants per landscaping plan -Any evidence of undesirable invasive species -Maintenance of aquatic water depths plant species -Choking of plants due to excessive sediment depths -Eutrophication level of the pond/ wetland area	-Re-plant wetland species as necessary -Restore as necessary -Re-distribute as necessary -Remove -Clean outlets to restore appropriate water levels -Remove pond sediment as necessary -Restore eutrophication level as necessary
Miscellaneous	Monthly	-Any encroachment into the pond area -Complaints from residents -Pond aesthetics (graffiti, lack of grass cover, etc.) -Signs of hydrocarbon build-up -Any possible public hazards	-Remove/remedy as needed -Note complaint and discuss with owner and engineer as necessary -Remove any graffiti and scarify, seed and mulch as necessary -Remove -Notify Town and discuss with owner and Town as necessary

Table 3.E-6: Bioretention Post-Construction Inspection and Maintenance Table

Maintenance Item	Frequency	Description of Inspection Parameters	Description of Remedy Procedures
Bioretention Areas	Monthly	-Embankment erosion -Accumulated debris and litter -Dumped yard wastes -Standing water	-Stabilize and restore to original specs -Remove -Remove - Remove and replace filter media meeting original specifications
Filter Bed	Annual	-Filter bed blocked or filled in	-Remove and replace filter media meeting original specifications
Outlet Structures	Annual & After Major Storm Events	-Catch basins and associated components in poor condition -Embankment erosion -Accumulated debris and sediment -Rip-rap failure	-Repair and/or replace -Stabilize and restore to original specs -Remove - Replace rip-rap as necessary
Vegetation	Monthly	-Vegetation: 80% coverage + 15% invasive species -Undesirable vegetation growth -Unauthorized plantings	-Restore to original specs as per planting plan -Remove -Remove

3.E.3.7 Future Development Parcel

Mitigation measures for the three scenarios presented in *Section 3.E.2.5* are provided below.

Scenario 1 - Stormwater management pond 1P has been designed to treat the stormwater runoff generated from 19,197 square feet (0.44 acres) of impervious area.. Therefore, there are no anticipated impacts and no additional mitigation measures will be necessary.

Scenario 2 - Stormwater management pond 1P will be unaffected. Therefore, there are no anticipated impacts and no additional mitigation measures would be necessary.

Scenario 3 - Stormwater management pond 1P will have to be evaluated to determine if there is adequate capacity. If there is adequate capacity, then there are no anticipated impacts and no additional mitigation measures would be necessary.

If there is inadequate capacity, additional stormwater management measures will have to be incorporated on the parcel. The stormwater management facility will only have to be designed to treat the water quality volume associated with the amount of impervious area over the 19,197 square feet. After a stormwater management facility has been incorporated, then no additional mitigation measures would be necessary.

3.F Community Services and Facilities

This section discusses the existing police, fire, and emergency medical services, schools, and community facilities. This section also discusses the capacity of these resources to provide assistance to the Proposed Action. The potential impacts are identified and mitigation measures, if any, are provided to ensure the health and safety of the project residents, visitors, and personnel, as well as the surrounding community. The community services and facilities surrounding the Proposed Action are shown in *Figure 3.F-1*.

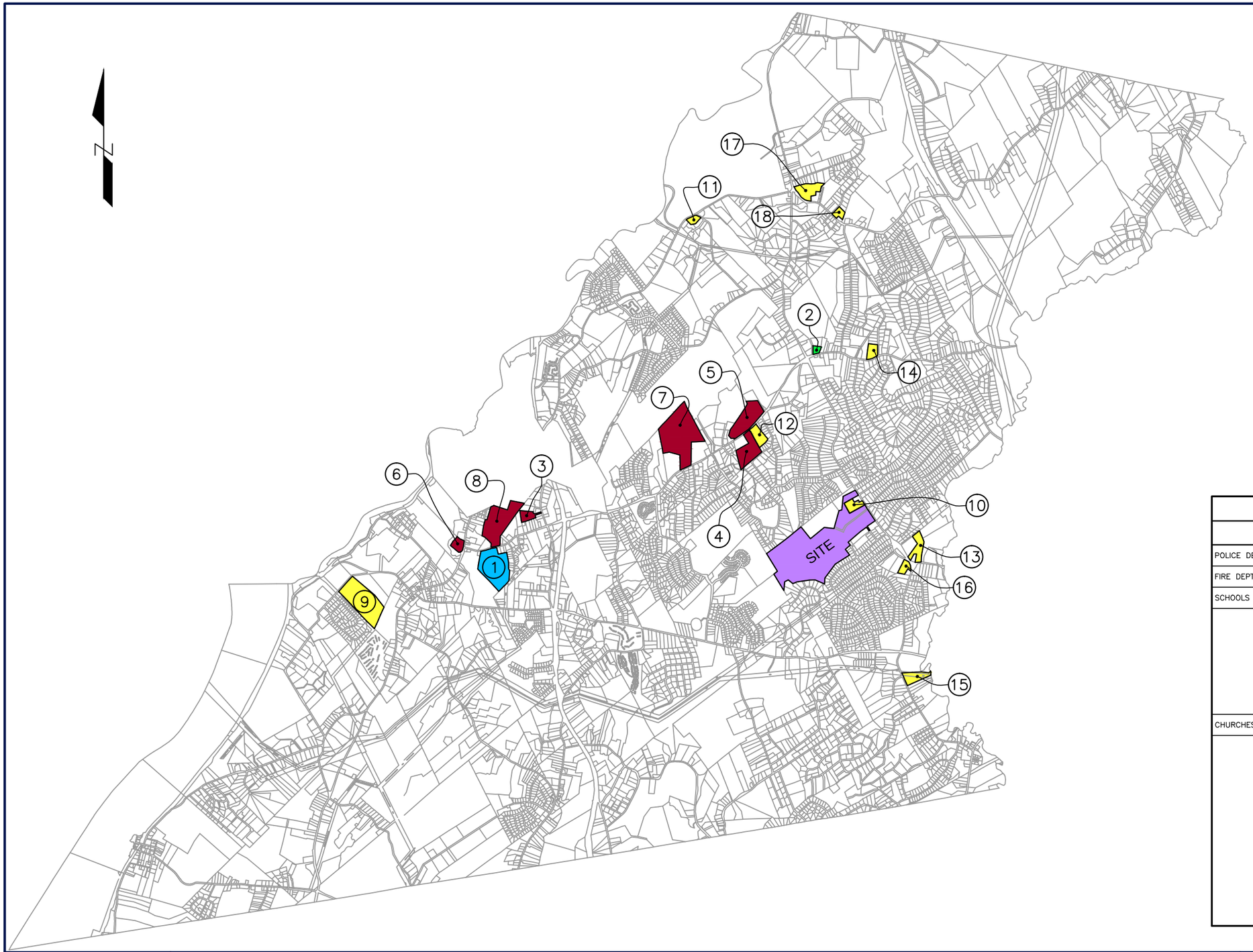
3.F.1 Police Protection, Fire Protection and Emergency Medical Services

3.F.1.1 Police Protection

Police Departments

According to the *Town of Wappinger Comprehensive Plan*, there is no town police department; coverage is provided by the County Sheriff's Department and the State Police.[41] The Dutchess County Sheriff's Department has jurisdiction over all of Dutchess County. Their headquarters is located at 150 North Hamilton Street in the City of Poughkeepsie, New York. Coverage for the Proposed Action and the surrounding area is provided by a Town of Wappinger substation. The substation provides minimal office space and is not staffed on a full-time basis. All calls to the substation are answered by the communications staff in the Poughkeepsie headquarters, who then dispatch personnel working at the substation.

[41] *Town of Wappinger Comprehensive Plan,* Dutchess County Department of Planning.



TOWN OF WAPPINGER COMMUNITY SERVICES & FACILITIES			
SERVICE	No.	FACILITY	LOCATION
POLICE DEPT.	1	POLICE STATION & TOWN HALL	20 MIDDLEBUSH ROAD
FIRE DEPT.	2	NEW HACKENSACK FIRE DEPARTMENT	217 MYERS CORNERS ROAD
SCHOOLS	3	JAMES S EVANS ELEMENTARY SCHOOL	747 OLD ROUTE 9
	4	MYERS CORNERS ELEMENTARY SCHOOL	156 MYERS CORNERS ROAD
	5	ORCHARD VIEW ALTERNATIVE HIGH SCHOOL	167 MYERS CORNERS ROAD
	6	RANDOLPH SCHOOL	2467 ROUTE 9D
	7	ROY C KETCHAM HIGH SCHOOL	99 MYERS CORNERS ROAD
	8	WAPPINGERS JUNIOR HIGH SCHOOL	30 MAJOR MACDONALD WAY
CHURCHES	9	CHAPEL OF SACRED MIRRORS	46–70 DEER HILL ROAD
	10	COMMUNITY BAPTIST CHURCH	226 ALL ANGELS HILL ROAD
	11	CONNECTIONS CHURCH OF NEW YORK	2 SAINT NICHOLAS ROAD
	12	GRACE BIBLE CHURCH	158–160 MYERS CORNERS ROAD
	13	HINDU TEMPLE & INDIAN COMMUNITY CENTER	3 BROWN ROAD
	14	IMMANUAL CHRISTIAN REFORMED CHURCH	253–255 MYERS CORNERS ROAD
	15	JEHOVAH'S WITNESSES	383 ALL ANGELS HILL ROAD
	16	MID–HUDSON CHINESE CHRISTIAN CHURCH	306 ALL ANGELS HILL ROAD
	17	NEW HACKENSACK REFORMED CHURCH	1580 ROUTE 376
	18	ST. GREGORY'S ORTHODOX CHURCH	1500 ROUTE 376

PREPARED BY:

POVALL ENGINEERING, PLLC

HILLTOP VILLAGE AT WAPPINGER

TOWN OF WAPPINGER COMMUNITY SERVICES & FACILITIES

FIGURE *3.F-1*

DATE: *02/2012*

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SCALE: *1"=4,000'*

According to Sergeant Robert Monaco, one Deputy is assigned to this portion of the Town of Wappinger during each 24 hour period. The service ratio is approximately 207 persons for each Deputy. The Deputies perform continuous patrolling during a 24 hour period. The Dutchess County Sheriff's Department patrols the project area. Because their patrol route is not defined, they may drive by the project area any number of times throughout the patrol period. Information request letters were sent out (see A*ppendix B.4*); however, no written correspondence has been received to date.

An information request letter was sent to Lt. Glenn Miner of the New York State Police Public Information Office and a subsequent visit on August 15, 2011 was made to the Zone 2 Station. Based upon discussions with the Lt. Miner, the Zone 2 Station of Troop K is located at 18 Middlebush Road in the Town of Wappinger, New York. Staffing at this particular station ranges from 22 to 26 officers and includes three Sergeants and five Investigators. The service ratio is approximately 1,007 persons for each Trooper stationed at the Town of Wappinger facility. The New York State Police method of patrol for this area varies. According to Sergeant Gallo at Troop K Headquarters, problem areas are patrolled more frequently. Generally a patrol car drives through this area twice during each 24 hour period, since this area is not considered a problem area. Information request letters were sent out (see A*ppendix B.4*); however, no written correspondence has been received to date.

Site Access

Access to the Proposed Action will be from All Angels Hill Road using the existing shared driveway which is currently to access Flavormatic. Both State and County Police are aware of the existing access road and currently this road poses no impediment to access by these Agencies. All roads within the Proposed Action have been designed in accordance with the Town Highway Specifications and to accommodate all traffic, including emergency vehicles. Additionally, all driveways will be paved and a consistent lot numbering system will be implemented to aide emergency services personnel in responding to fire or other emergencies.

Fiscal Impact Analysis

In 2010 the County Tax revenue generated by the undeveloped site was $6,443.04, or 2.83 percent of the total tax levy from the property based on a Total Assessed Value of $2,273,800. Upon completion, the total assessed value of the property will increase thereby increasing the amount of tax revenue generated. A detailed fiscal impact analysis could not be performed, since budget information for the New York State Police and Office of the Dutchess County Sheriff was not available. However, the increase in tax revenue generated by the Proposed Action can cover or assist in covering any potential cost increases.

Potential Impacts

The Proposed Action will be adding 225 residential units to the Town of Wappinger, resulting in an increased in demand for police protection, as with all development. Full build out of the Proposed Action represents a small percentage (2.7%) of the conservatively estimated total of 8,466 residential housing units from the 2000 Census[42] in the Town of Wappinger. As a result of the increased

[42] *Town of Wappinger Comprehensive Plan*

demand, there is potential for an increase in the costs to provide these services. The service ratios of the New York State Police Department will be increased by approximately 20 people per trooper and Dutchess County Sheriff's Department will be increased by approximately 18 people per deputy.

Mitigation Measures

Based upon a discussion with the New York State Police Department and the Dutchess County Sheriff's Department, it is not anticipated that either of the stations will have any difficulties providing police protection for the Proposed Action. The increase in the service ratios are minimal and will pose no significant impact on the dedication of manpower. In addition, the increase in tax revenue generated by the Proposed Action assist in providing for any potential increase in expected police protection coverage. Therefore, no significant impacts to the ability of the New York State Police Department or the Dutchess County Sheriff's Department to protect the proposed residents are anticipated.

Future Development Parcel

It is the Applicant's opinion that build-out of the Future Development Area will add minimal impact to the demand for police protection services. The future development of this parcel will not impact town services, since any proposed development will most likely add to the Town's existing community services.

3.F.1.2 Fire Protection

Fire Department

According to the *Town of Wappinger Comprehensive Plan*, "Fire protection services are provided through locally-orientated service areas; in Wappinger, these service areas are fire districts. Fire districts are political subdivisions of the state. Each district is administered by a Board of Fire Commissioners, which has the responsibility to operate, equip and maintain fire companies within the district."

Fire protection is provided to Town residents through volunteer fire personnel in three fire districts: the New Hackensack Fire District, the Hughsonville Fire District, and the Chelsea Fire District. The Proposed Action is located in the New Hackensack Fire District. According to Chief Rick Anderson of this facility, the Fire Station is located at the corner of Meyers Corners Road and All Angels Hill Road. The following represents the staffing of the Station obtained from the New Hackensack Fire District website:[43]

- One District Chief - Volunteer Position
- Two Assistant Chiefs - Volunteer Position
- Two Captains - Volunteer Position
- Two First Lieutenants - Volunteer Position
- Two Second Lieutenants - Volunteer Position
- One Career Firefighter - Paid Position
- One Fire Police Captain - Volunteer Position

[43] http://www.nkfd.org

- Sixty-Two Active Members - Volunteer Position

Information request letters were sent to the New Hackensack Fire District (*Appendix B.4*) and a follow-up phone call was made. According to Chief Anderson, one Career Firefighter is permitted to staff the Fire Station on a regular basis. The Career Firefighter hours are from 7 am to 5 pm Monday through Friday. New Hackensack Fire District owns the following pieces of Fire Apparatus:

- Three Class A Pumpers which all have 1,500 gallons per minute (gpm) pumps and 1,000 gallons water tanks.
- One Water Tankers with 2,000 gallons of water and 350 gpm pumps on each.
- One Heavy Duty Rescue Truck.
- Two Utility Trucks with a 150 gallon water tank and a 150 pounds per square inch (psi) pump.
- Three four-wheel drive trucks.

According to the New Hackensack Fire District's 2009 Annual Report, the New Hackensack Fire Department responded to 871 alarms in 2009. These include responses in the district as well as mutual aid to neighboring departments. This amounted to a total of 3,069.46 manpower hours of emergency service. The average response time varied from 5 minutes during the 12am to 7am time period; 8 minutes from the 7 am to 5 pm time period; and 12 minutes from the 5pm to 12am time period.

The expected average response time to the proposed development is approximately 3 minutes (*Appendix B.4*). On what the District considers a First Alarm Assignment to a structure fire, the Fire Station can have 3,000 gallons of water to the Proposed Action in approximately 4 - 6 minutes. If on average the homes were 40 feet by 66 feet with two floors, and the house were fully consumed with fire, the Fire Fighters would need 540 gpm of water to control the fire. On the Second Alarm Assignment, the Fire Department could have an additional 4,000 gallons of water with unlimited resources around the District. Further, there is an area along the Sprout Creek within 1/4 mile of the project area, for drafting after which the District apparatus can supply water at the rate of approximately 1,000 gpm if necessary.

Water Source

The Proposed Action is located in the United Wappinger Water District (UWWD) and will require water service for fire protection purposes, which will be provided via the UWWD water system. The water distribution system will include hydrants located throughout the Proposed Action to provide water for firefighting purposes. Fire ponds are not proposed.

The needed fire flow range for the single family homes is 750 to 1,000 gpm and for the townhomes is 750 to 1,500 gpm. For design purposes, the needed fire flow for:

Single Family Homes = **1,000 gpm**.
Townhomes = **1,500 gpm**.

The needed fire flow for the club house was determined by using the ISO needed fire flow formula. The needed fire flow for the club house was determined to be **1,000 gpm**. As part of the site plan

approval process, an analysis of the existing water system will be performed to determine if there is adequate capacity to provide fire suppression in addition to the water demand and if any infrastructure upgrades will be necessary.

The 8-inch water main will bring water service onto the site and will service the hydrants, which will be spaced between 350 and 600-feet along the internal roadway. This will provide adequate service for emergency services. All hydrants will have standard hydrant flags to aide in their identification during snow cover; and the tops and nozzle caps will be properly painted to reflect the corresponding capacity. A Siamese connection will be provided at the club house and placed in a location that will be easily accessible by the fire department. This location will be shown on the project plans once the water layout has been developed and designed.

Site Access

Access to the Proposed Action will be from All Angels Hill Road using the existing shared driveway which is currently used to access Flavormatic. All roads within the Proposed Action have been designed in accordance with the Town Highway Specifications and to accommodate all traffic, including emergency vehicles. The turning radius for a fire apparatus is not available; however, the vehicle with the largest turning radius has a wheel base of 224 inches, cramp angle of 48° left and 44° right (*Appendix B.4*). The roads have been designed to accommodate their largest truck. Therefore, if the largest fire truck can maneuver uninhibited throughout the Proposed Action, then all of the other emergency vehicles can maneuver uninhibited as well. A truck turning planning will be prepared as part of the final site plans. Additionally, all driveways will be paved and a consistent lot numbering system will be implemented to aide emergency services personnel in responding to fire or other emergencies.

Fiscal Impact Analysis

In 2010, the New Hackensack Fire District Tax revenue generated by the undeveloped site was $1,160.62, or 0.51 percent of the total tax levy from the property based on a Total Assessed Value of $2,273,800. The fiscal impact analysis was expanded to determine the fiscal impacts of the Proposed Action on the Fire District (A*ppendix C.7*). The fiscal impact of the Proposed Action is detailed in *Table 3.F-1*.

Table 3.F-1: Fire District Fiscal Impact Analysis

Current Tax Rate		0.54
Residential Cost	$	788,386
Cost per Resident	$	29
Additional Costs from Proposed Action	$	9,794
Estimated Tax Revenue from Proposed Action	$	38,752
Surplus	**$**	**28,958**

Detailed assessment of New Hackensack Fire District costs and revenues, and calculations of estimated costs and revenues associated with the Proposed Action shows that **an Active Adult residential use on this site would be financially beneficial to the fire district**. Residents of the Proposed Action would pay a surplus of funds to the fire district.

Potential Impacts

The Proposed Action will be adding 225 residential units to the Town of Wappinger, resulting in an increased in demand for fire protection services, as with all development. As a result of the increased demand, there is potential for an increase in the costs to provide these services. In addition, there will be an increase in the water demand, since the property does not currently require water service, which is further analyzed and discussed in *Section 3.M*.

Mitigation Measures

Based upon a discussion with Chief Anderson, the New Hackensack Fire District would have no difficulty providing fire protection to the Proposed Action. In addition, the surplus tax revenue generated by the Proposed Action can cover or assist in covering any potential cost increases. Therefore, no significant impacts to the New Hackensack Fire Department's ability to protect the Proposed Action from fires are anticipated.

Future Development Parcel

It is the Applicant's opinion that build-out of the Future Development Area will add minimal impact to the demand for fire protection services. The future development of this parcel will not impact town services, since any proposed development will most likely add to the Town's existing community services.

3.F.1.3 Emergency Medical Services

Ambulance Service

The Town of Wappinger exclusively utilizes the services of TRANSCARE Ambulance Service[44] for emergency medical situations affecting Town residents. TRANSCARE consistently provides response times faster than the area average, which translates into increasing the likelihood of protection in an emergency with both Basic and Advanced Life Support personnel. The Town of Wappinger Town Board has provided for a Town-wide Ambulance District that covers the cost of the ambulance over that of available insurance.

TRANSCARE is directly linked to Dutchess County's Enhanced 911 service and is conveniently located at 16 Middlebush Road attached to the State Police Barracks and adjacent to the Wappinger Town Hall and is located approximately 4 miles from the Proposed Action. The Property currently has direct access from All Angels Hill Road that will be further improved as a result of the Proposed Action and will have emergency access from Shamrock Hills Road. An increase in demand for TRANSCARE services is expected upon occupation of the Proposed Action by residents.

In addition to TRANSCARE, in 2009 the New Hackensack Fire Department responded to 871 alarms in 2009. These include responses in the district as well as mutual aid to neighboring departments. This amounted to a total of 3,069.46 manpower hours of emergency service. The largest category of alarms continues to be Emergency Medical Service calls. New Hackensack responds to any medical emergencies classified as "Priority 1" or "life-threatening" to supplement the response of Town of Wappinger Ambulance, which is the Town's paid provider of Advanced

[44] According to http://transcare.com/Home-ServiceAreaMapNY.html.

Life Support services or ALS. Motor Vehicle Accidents was the second largest category for response, followed by Automatic Fire Alarms.

A letter was sent to TRANSCARE requesting additional information on July 7, 2011 (*Appendix B.4*). A follow-up letter was also sent on November 22, 2011 (*Appendix B.4*). However, no written correspondence has been received to date.

Fiscal Impact Analysis

In 2010 the Town Wide Ambulance Tax revenue generated from the undeveloped site was $446.71, or 0.20 percent of the total tax levy from the property based on a Total Assessed Value of $2,273,800. The fiscal impact analysis was expanded to determine the fiscal impacts of the Proposed Action on the ambulance district (*Appendix C.7*). The fiscal impact of the Proposed Action is detailed in *Table 3.F-2*.

Table 3.F-2: Ambulance District Fiscal Impact Analysis

Current Tax Rate		0.13
Residential Cost	$	316,194
Cost per Resident	$	12
Additional Costs from Proposed Action	$	3,928
Estimated Tax Revenue from Proposed Action	$	9,329
Surplus	**$**	**5,401**

Detailed assessment of Ambulance District costs and revenues, and calculations of estimated costs and revenues associated with the Proposed Action shows that **an Active Adult residential use on this site would be financially beneficial to the ambulance district**. Residents of the Proposed Action would pay a surplus of funds to the ambulance district.

Hospitals/Medical Centers

Hospitals/medical centers near the Proposed Action include:

- VASSAR BROTHERS MEDICAL CENTER (Acute Care Hospitals, Voluntary non-profit - Other, provides emergency services, about 11.6 miles away; POUGHKEEPSIE, NY).
- SAINT FRANCIS HOSPITAL (Acute Care Hospitals, Voluntary non-profit - Private, provides emergency services, about 13.2 miles away; POUGHKEEPSIE, NY).
- ST LUKE'S CORNWALL HOSPITAL (Acute Care Hospitals, Voluntary non-profit - Other, about 16.9 miles away; NEWBURGH, NY).

Vassar Brothers Medical Center

Vassar Brothers Medical Center is located approximately 11.6 miles in Poughkeepsie from the Proposed Action. Vassar Brothers is a 365 bed facility and has established centers of excellence in cardiac services, cancer care and women and children's health services. They house the area's first and only cardiothoracic surgery center between Westchester and Albany. Vassar Brothers has a

state-of-the-art birthing center and delivers more babies than any other hospital between Manhattan and Montreal, with more than 2,500 births each year.[45]

Vassar Brothers has the only Level 3 Neonatal Intensive Care Unit in the Mid-Hudson Valley and dedicated Pediatric Unit. The Dyson Center for Cancer Care is designed to accommodate patients and their families while providing infusion therapy, radiation therapy, stereotactic radiosurgery and a wide variety of support groups. The Medical Center houses the Center for Advanced Surgery, one of the most sophisticated operating rooms in the world and one of only a handful in the United States. The Vassar Brothers Wound Care Center, intended for the treatment of chronic, non-healing wounds, has one of the highest healing rates in the country.[46]

To its south is the Vassar Brothers Medical Mall, located at the intersection of Interstate 84 and Route 9. The facility houses the Fishkill Ambulatory Surgery Center, the Vassar Brothers Imaging Center, which offers CAT scans, bone densitometry and mammography, Radiation Oncology and the Vassar Brothers Center for Sleep Medicine. Vassar Brothers is an affiliate of the Health Quest hospital system, which also includes Northern Dutchess Hospital in Rhinebeck and Putnam Hospital Center in Carmel.[47]

Vassar Brothers offers expertise and exceptional care in many disciplines, which includes: Advanced Care Planning; Case Management Services; Bloodless Care; Pre-Operation and Diagnostic Testing; Neurodiagnostic Testing; Medical Services; Surgical Services; Continuing Medical Education Services; Nursing Education Services; Spiritual Care; Stroke Care; and Wound Care.[48]

An information request letter was sent on November 22, 2011 (*Appendix B.4*); however, no response has been received to date.

Saint Francis Hospital

Saint Francis Hospital is located approximately 13.2 miles in Poughkeepsie from the Proposed Action. Saint Francis Hospital is 333 bed acute care facility (*Appendix B.4*) and is home to the area's only Level II Trauma Center. The hospital's facilities include a heliport and two trauma bays, with full time board-certified trauma surgeons on staff and a talented team of orthopedic and reconstructive/aesthetic surgeons and neurologists. Over 9,000 trauma victims are cared for annually, making George T. Whalen Family Trauma Center the busiest Level II Trauma Center in New York State.[49]

Emergency medical services are provided by a team of highly skilled physicians, nurses, and clinicians in the James J. McCann Emergency Care Center. According to Jason Barlow, Vice President of Support Services for Saint Francis Hospital, the emergency department has treated over 33,000 patients last year (*Appendix B.4*). Each year, thousands of children, teenagers, adults, and seniors who are in need of urgent care for illnesses such as clinical depression, bipolar disorder, anxiety disorder, schizophrenia, and substance abuse are treated. The Father Brinn Center for Psychiatric Care within the Emergency Care Center is a first-class facility designed to meet the needs

[45] Vassar Brothers Medical Center http://www.health-quest.org/home_vb.cfm?id=11
[46] Ibid.
[47] Vassar Brothers Medical Center http://www.health-quest.org/home_vb.cfm?id=11..
[48] Ibid.
[49] Saint Francis Hospital http://sfhospital.org/trauma-emergency-services

of patients in crisis. Saint Francis Hospital also works with local school districts, providing essential guidance in times of crisis or emergency situations.[50]

Saint Francis Hospital elects to focus on critical areas, such as their Cancer and Trauma Centers; they do offer expertise and exceptional care in other disciplines as well. These include: Aesthetic, Reconstructive, and Hand Surgery; Bloodless Medicine; Communication Disorders; Diabetes; Imaging and Radiology; Laboratory Services; Medical Services; Rehabilitation; Sleep Center; Special Needs Preschool; Surgical Services; and Wound Care.[51]

An information request letter was sent on November 22, 2011 (*Appendix B.4*). According to Jason Barlow, Saint Francis Hospital has no reason to believe that the Proposed Action would impose any volume hardship on the hospital (*Appendix B.4*).

Saint Luke's Cornwall Hospital

Saint Luke's Cornwall Hospital (SLCH) is located approximately 16.9 miles in Newburgh from the Proposed Action. Saint Luke's Cornwall Hospital has two campuses, one located in Newburgh and the other located in Cornwall. The Newburgh campus is a 242 bed facility and a regional center for neonatology that offers pediatric subspecialties. In addition, the Newburgh campus also provides cardiac rehabilitation, pain management/palliative care, a speech and swallowing center, and a cardiac catheterization lab. The Cornwall campus is an outpatient-focuses center with an active Emergency Department which treats more than 16,000 patients each year. In addition, they offer a variety of services, including Radiation Oncology Services, Littman Cancer Center, Wound Care, Kreisberg Pain Management, Eastern Orange Ambulatory Surgery Center, and Physical Therapy.[52]

SLCH cares for more than 270,000 patients from around the Hudson Valley. They have nearly 300 physicians on staff, representing dozens of medical specialties. Additionally, more than 1,500 clinical and support personnel work at the hospital, making it one of the largest employers in Orange County. SLCH is also an affiliate of The Mount Sinai Hospital and New York Presbyterian Hospital.[53]

SLCH recently renovated and expanded their Level Two Trauma Center Emergency Departments. The Kaplan Family Center for Emergency Medicine on the Newburgh campus and the Littman Center for Emergency Medicine on the Cornwall campus treats 60,000 patients a year. SLCH does offer expertise and exceptional care in many disciplines, which includes: Neonatal Intensive Care; Cardiac Care; Cardiac Catheterization; Joint Replacement; Physical Therapy; da Vinci® Robotic Surgery; Imaging and Radiology; Laboratory Services; Medical Services; Surgical Services; Radiation Oncology Services; Pain Management; Stroke Care; Psychological Care; and Wound Care.[54]

An information request letter was sent on November 22, 2011 (*Appendix B.4*); however, no response has been received to date.

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[50] Saint Francis Hospital http://sfhospital.org/trauma-emergency-services.
[51] Ibid.
[52] Saint Luke's Cornwall Hospital http://www.stlukescornwallhospital.org/
[53] Ibid.
[54] Ibid.

Site Access

Access to the Proposed Action will be from All Angels Hill Road using the existing shared driveway which is currently used to access Flavormatic. All roads within the Proposed Action have been designed in accordance with the Town Highway Specifications and to accommodate all traffic, including emergency vehicles. The roads have been designed to accommodate the fire department's largest truck. Therefore, if the largest fire truck can maneuver uninhibited throughout the Proposed Action, then all of the other emergency vehicles can maneuver uninhibited as well. A truck turning planning will be prepared as part of the final site plans. Additionally, all driveways will be paved and a consistent lot numbering system will be implemented to aide emergency services personnel in responding to fire or other emergencies.

Potential Impacts

The Proposed Action will be adding 225 residential units to the Town of Wappinger, resulting in an increased demand for emergency medical services, as with all development. As a result of the increased demand, there is potential for an increase in the costs to provide these services.

Mitigation Measures

It is the Applicant's opinion that the Proposed Action will add minimal impact to the emergency medical services. In addition, the surplus tax revenue generated by the Proposed Action can cover or assist in covering any potential cost increases. Therefore, no significant impacts to the emergency medical services as a result of the Proposed Action are anticipated.

According to Jason Barlow, Saint Francis Hospital has no reason to believe that the Proposed Action would impose any volume hardship on the hospital. Based upon this information, it is the Applicant's opinion that the Proposed Action will not impose any volume hardships on the other hospitals. Therefore, no mitigation measures are proposed.

Future Development Parcel

It is the Applicant's opinion that build-out of the Future Development Area will add a minimal impact to the demand for emergency medical services. The future development of this parcel will not impact town services, since any proposed development will most likely add to the Town's existing community services.

3.F.2 Schools

The Proposed Action is located in the Wappinger Central School District. According to the *Town of Wappinger Comprehensive Plan,*

- Most of the Town falls within the Wappingers Central School District; parts of the town, however, are within the Arlington Central School District and the Beacon City School District. Each of these districts provides a full range of elementary and secondary education.

- The Wappingers Central School District was organized in 1940 as a merger of a number

> of smaller school districts. The district covers an area of over 100 square miles in parts of four towns as well as a small area of Putnam County.[55] The Wappingers Central School District has ten elementary schools... two junior high schools... and two high schools.

School age children in the area attend Brinkerhoff Elementary School (K-5), Van Wyck Junior High School (6-8), and John Jay High School (9-12). Bus Transportation would be provided by the Wappinger Central School District. Currently three school buses service this area. The Proposed Action is an age-restricted development; therefore, no school aged children will reside in the development.

According to the Fiscal Impact Analysis (*Appendix C.7)*, the proposed project will generate more than $738,000 of annual property tax revenue to the Wappingers Central School District. This is enough to pay for the cost of educating 49 additional school children (at $14,853 per student), without adding to the school population.

The Future Development Parcel will not generate any school aged children, since the parcel is being offered to the Town for recreational purposes. Should the Town not accept the offer of dedication, the parcel will become permanent open space maintained by the HOA. As such, the Future Development Parcel will still not generate any school aged children since the Proposed Action is an active adult community with an age restriction. Therefore, no mitigation measures under either circumstance are necessary, since there will be no impacts to the Wappingers Central School District.

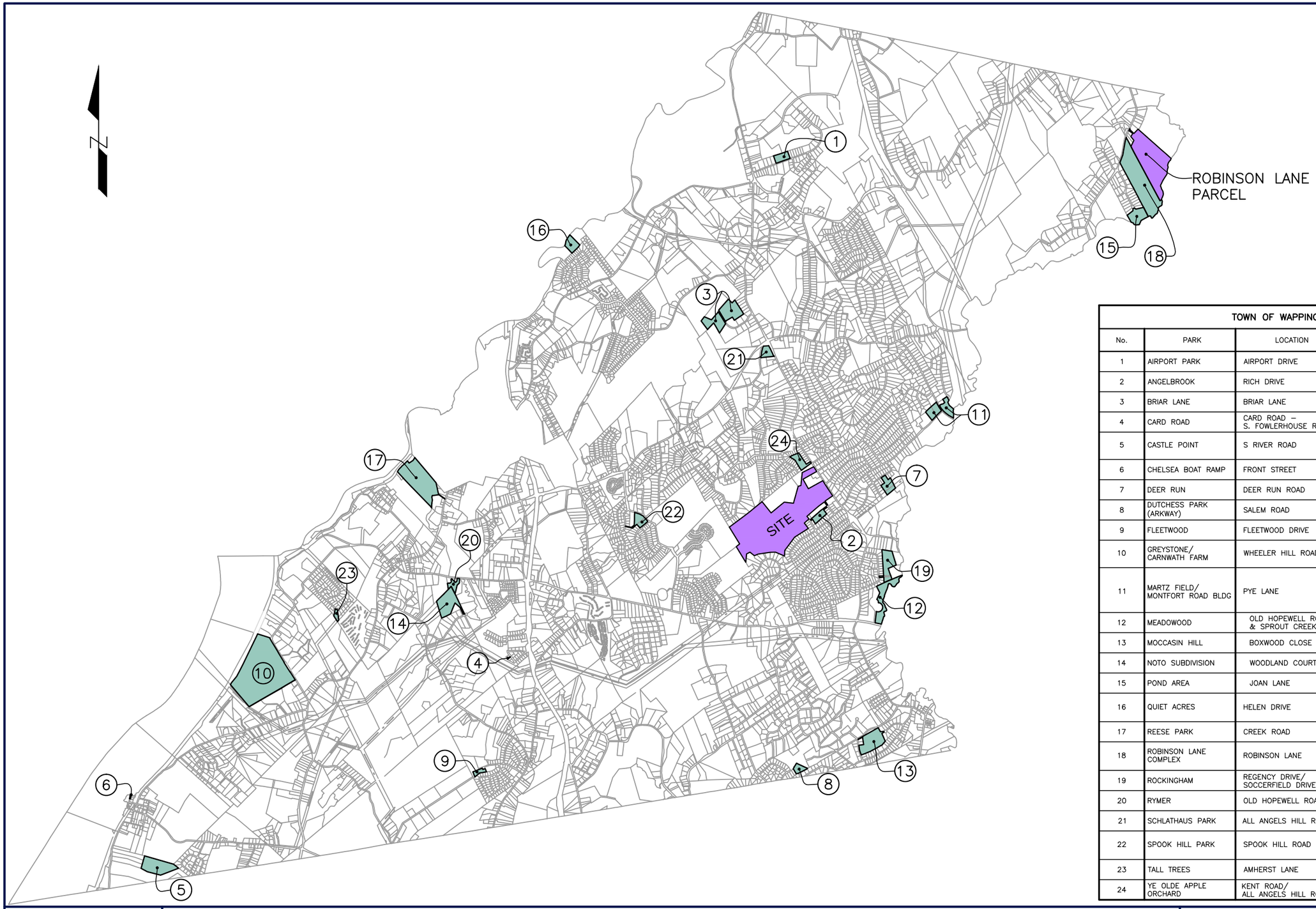
3.F.3 Parks, Recreation, and Library Facilities

According to the *Town of Wappinger Comprehensive Plan,* community facilities and services are important factors in the quality of life in a community. As a community grows, existing facilities and services need to expand to maintain this quality of life. It is the Applicant's opinion that the Proposed Action will conservatively generate approximately 450 residents or two residents per dwelling unit since the Proposed Action is age-restricted and no school aged children will occupy any of the units. It is expected that several of the residents will be from within the Town of Wappinger and already use the existing recreational and library facilities.

3.F.3.1 Existing Town Recreational Facilities

According to the *Town of Wappinger Comprehensive Plan,* recreation facilities are areas set aside for ball fields, picnicking and similar pursuits and open space areas are undeveloped lands set aside for limited activities such as hiking. The Town owns and maintains 24 parks on approximately 372 acres, including 11 parks with facilities for active recreation. As shown in *Table 3.F-3*, the Town of Wappinger provides the following recreational facilities throughout the municipality. The locations of these facilities in relation to the Proposed Action are shown in *Figure 3.F-2*.

[55]According to the Dutchess County Real Property and Tax Department, the Town of Wappinger Central School District, the District covers five towns including Wappinger, Poughkeepsie, LaGrange, East Fishkill, and Fishkill.



TOWN OF WAPPINGER RECREATIONAL FACILITIES				
No.	PARK	LOCATION	FACILITIES / FEATURES	SIZE (AC)
1	AIRPORT PARK	AIRPORT DRIVE	SOCCER FIELDS	10.00
2	ANGELBROOK	RICH DRIVE	OPEN FIELD	4.00
3	BRIAR LANE	BRIAR LANE	UNDEVELOPED	21.77
4	CARD ROAD	CARD ROAD – S. FOWLERHOUSE ROAD	½ BASKETBALL COURT	0.29
5	CASTLE POINT	S RIVER ROAD	BALLFIELDS (2), PLAYGROUND EQUIPMENT, PICNIC AREA, SHELTER, SUMMER PROGRAM, RESTROOMS	40.00
6	CHELSEA BOAT RAMP	FRONT STREET	BOAT RAMP	--
7	DEER RUN	DEER RUN ROAD	UNDEVELOPED	6.20
8	DUTCHESS PARK (ARKWAY)	SALEM ROAD	UNDEVELOPED	3.20
9	FLEETWOOD	FLEETWOOD DRIVE	SWINGS, BASKETBALL	2.00
10	GREYSTONE/ CARNWATH FARM	WHEELER HILL ROAD	HISTORIC ESTATE HOUSE AND GARDENS, BALLFIELD AND PANORAMIC HUDSON RIVER VIEWS	98.6
11	MARTZ FIELD/ MONTFORT ROAD BLDG	PYE LANE	BALLFIELD, 2 TENNIS COURTS, VOLLEYBALL COURTS, PICNIC AREA, BASKETBALL COURT, SWINGS, SLIDE, FIELDHOUSE, MAINTENANCE BARN, SUMMER PROGRAM	11.30
12	MEADOWOOD	OLD HOPEWELL ROAD & SPROUT CREEK	UNDEVELOPED	11.80
13	MOCCASIN HILL	BOXWOOD CLOSE	UNDEVELOPED	13.40
14	NOTO SUBDIVISION	WOODLAND COURT	UNDEVELOPED	15.70
15	POND AREA	JOAN LANE	UNDEVELOPED	8.50
16	QUIET ACRES	HELEN DRIVE	BALLFIELD, SWINGS, SLIDE, BASKETBALL COURT, SUMMER PLAYGROUND, PAVILION, STORAGE	12.20
17	REESE PARK	CREEK ROAD	TRAILS, RESTROOMS	40.00
18	ROBINSON LANE COMPLEX	ROBINSON LANE	BALLFIELDS (10), SWINGS, FIELD HOUSE, PAVILION, SUMMER PROGRAM, PICNIC AREA, RESTROOMS	40.00
19	ROCKINGHAM	REGENCY DRIVE/ SOCCERFIELD DRIVE	SOCCER FIELDS, SWINGS, POND	11.49
20	RYMER	OLD HOPEWELL ROAD	UNDEVELOPED	3.33
21	SCHLATHAUS PARK	ALL ANGELS HILL ROAD	BANDSTAND, HOUSE, STORAGE, GARAGE	5.00
22	SPOOK HILL PARK	SPOOK HILL ROAD	FIELDHOUSE, PAVILION, SWINGS, SLIDE, HANDBALL COURT, SUMMER PLAYGROUND, MODULAR PLAY AREA	5.30
23	TALL TREES	AMHERST LANE	UNDEVELOPED	1.60
24	YE OLDE APPLE ORCHARD	KENT ROAD/ ALL ANGELS HILL ROAD	POND	5.40

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HILLTOP VILLAGE AT WAPPINGER

TOWN OF WAPPINGER RECREATIONAL FACILITIES

FIGURE 3.F-2

DATE: 02/2012

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SCALE: 1"=4,000'

Table 3.F-3: Town of Wappinger Recreational Facilities

No.	Park	Location	Facilities	Size (ac)
1	Airport Park	Airport Drive	Soccer Fields	10.00
2	Angelbrook	Rich Drive	Open Field	4.00
3	Briar Lane	Briar Lane	Undeveloped	21.77
4	Card Road	Card Road – S. Fowlerhouse Road	½ Basketball Court	0.29
5	Castle Point	S. River Road	Two Ball fields, Playground Equip., Picnic Area, Shelter, Summer Program, Restrooms	40.00
6	Chelsea Boat Ramp	Front Street	Boat Ramp	--
7	Deer Run	Deer Run Road	Undeveloped	6.20
8	Dutchess Park (Arkway)	Salem Road	Undeveloped	3.20
9	Fleetwood	Fleetwood Drive	Swings, Basketball	2.00
10	Greystone / Carnwath Farm	Wheeler Hill Road	Historic Estate House and Gardens, Ballfield and Panoramic Hudson River Views	98.6
11	Martz Field / Montfort Road Bldg.	Pye Lane	Ball field, 2 Tennis Courts, Volleyball Courts, Picnic Area, Basketball Courts, Swings, Slide, Field House, Maintenance Barn, Summer Program	11.30
12	Meadowood	Old Hopewell Road & Sprout Creek	Undeveloped	11.80
13	Moccasin Hill	Boxwood Close	Undeveloped	13.40
14	Noto Subd.	Woodland Court	Undeveloped	15.17
15	Pond Area	Joan Lane	Undeveloped	8.50
16	Quiet Acres	Helen Drive	Ballfield, Swings, Slide, Basketball Court, Summer Playground, Pavilion, Storage	12.20
17	Reese Park	Creek Road	Trails, Restrooms	40.00
18	Robinson Lane Complex	Robinson Lane	Ball fields (10), Swings, Field House, Pavilion, Summer Program, Picnic Area, Restrooms	40.00
19	Rockingham	Regency Drive/ Soccerfield Drive	Soccer Fields, Swings, Pond	11.49
20	Rymer	Old Hopewell Road	Undeveloped	3.33
21	Schlathaus Park	All Angels Hill Road	Bandstand, House, Storage, Garage	5.00
22	Spook Hill Park	Spook Hill Road	Fieldhouse, Pavilion, Swings, Slide, Handball Court, Summer Playground, Modular Play Area	5.30
23	Tall Trees	Amherst Lane	Undeveloped	1.60
24	Ye Olde Apple Orchard	Kent Road / All Angels Hill Road	Pond	5.40

According to the *Town of Wappinger Comprehensive Plan,* the Grinnell Library serves the needs of the residents of the Town of Wappinger and the Village. The Library is located in an historic building on East Main Street in the Village. The building has approximately 4,000 square feet of space and in

excess of 27,000 volumes. The Grinnell Library is a member of the Mid-Hudson Libraries; this affiliation provides residents with additional services and a larger resource base.

Grinnell Library will serve the residents of the Proposed Action and is located at 2642 East Main Street, Wappingers Falls, NY 12590. It is the Applicant's opinion that the Proposed Action will conservatively generate approximately 450 residents, or two residents per dwelling unit, since the Proposed Action is age-restricted and no school aged children will occupy any of the units. It is expected that several of the residents will be from within the Town of Wappinger and already use the existing recreational and library facilities. The mission of the Grinnell Library is to provide free access to a variety of informational materials, library services, and programs using its resources and those of the Mid-Hudson Library System, to meet the educational, cultural, and recreational needs.

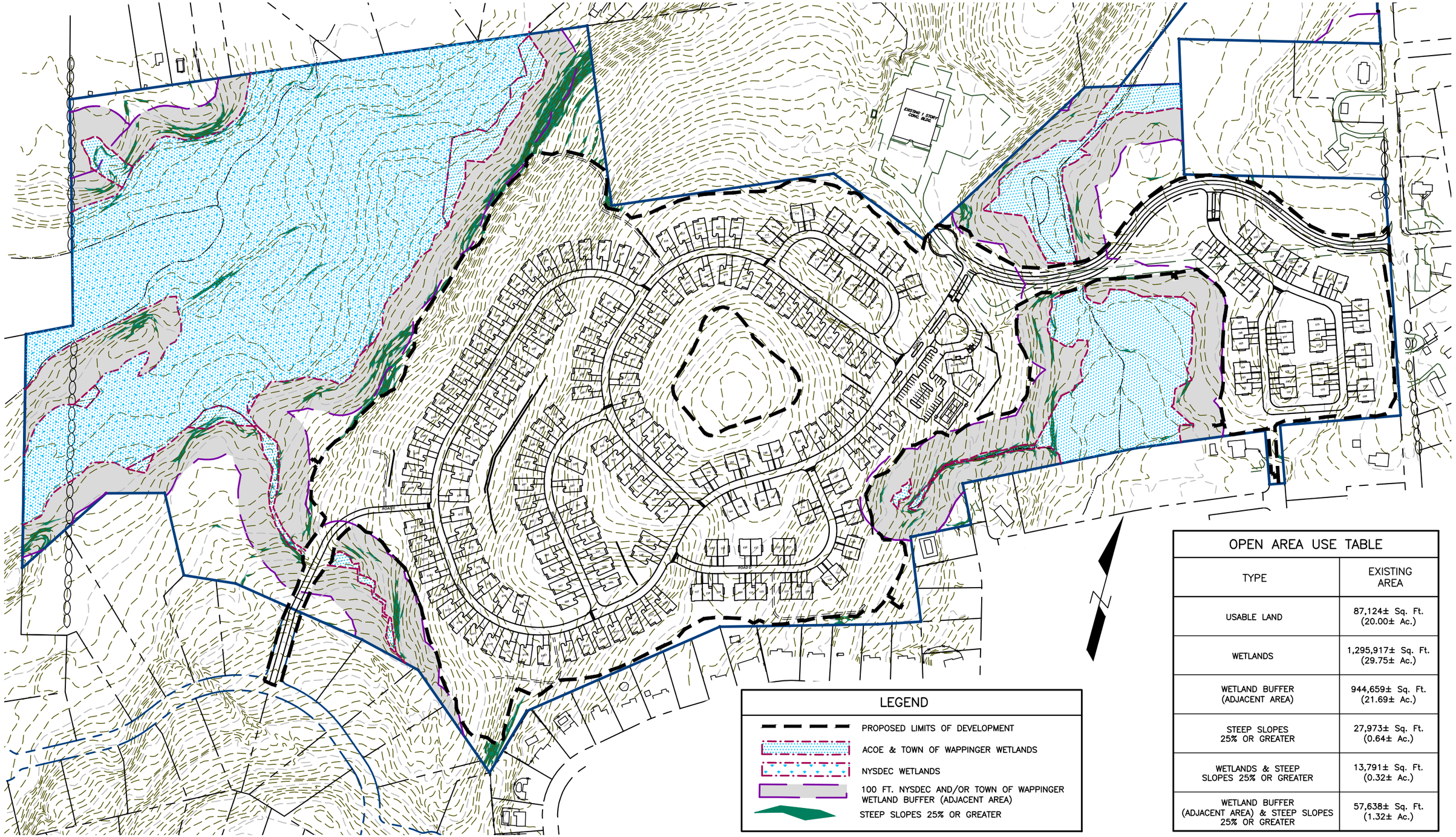
3.F.3.2 Proposed Action Recreational Resources

The Town of Wappinger Zoning Law requires 50% of the lot area be set aside as open space. In addition, the Town's Master Plan recommends planning projects such that open spaces will be interconnected thereby providing "boundless opportunities for low-cost recreation". As such, the Applicant is proposing to provide approximately 73.72 acres of open space, or 51 percent of the property. The open space area on the property is generally characterized as deciduous forest and forested wetland. As such, these areas are ideal for passive recreation, including walking, hiking, and nature study. The proposed open space resources in the area outside the proposed limit of disturbance are shown in *Figure 3.F-4*. The amount of unusable open space is quantified in *Table 3.F-2* below.

Table 3.F-4: Unusable Open Space Resources

Constraints	Area (ac)
Wetlands	29.75
Buffer/Adjacent Areas	21.69
Steep Slopes	0.64
Wetlands & Steep Slopes	0.32
Buffer/Adjacent Area & Steep Slopes	1.32
Total	**53.72**

The total unusable open space area is 53.72 acres. Therefore, the remaining area 20 acres is usable open space area that can be used by the residents of the development (*Figure 3.F.3*).



OPEN AREA USE TABLE

TYPE	EXISTING AREA
USABLE LAND	87,124± Sq. Ft. (20.00± Ac.)
WETLANDS	1,295,917± Sq. Ft. (29.75± Ac.)
WETLAND BUFFER (ADJACENT AREA)	944,659± Sq. Ft. (21.69± Ac.)
STEEP SLOPES 25% OR GREATER	27,973± Sq. Ft. (0.64± Ac.)
WETLANDS & STEEP SLOPES 25% OR GREATER	13,791± Sq. Ft. (0.32± Ac.)
WETLAND BUFFER (ADJACENT AREA) & STEEP SLOPES 25% OR GREATER	57,638± Sq. Ft. (1.32± Ac.)

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HILLTOP VILLAGE AT WAPPINGER

PROPOSED OPEN SPACE RESOURCES

FIGURE 3.F-3

DATE: 02/2012

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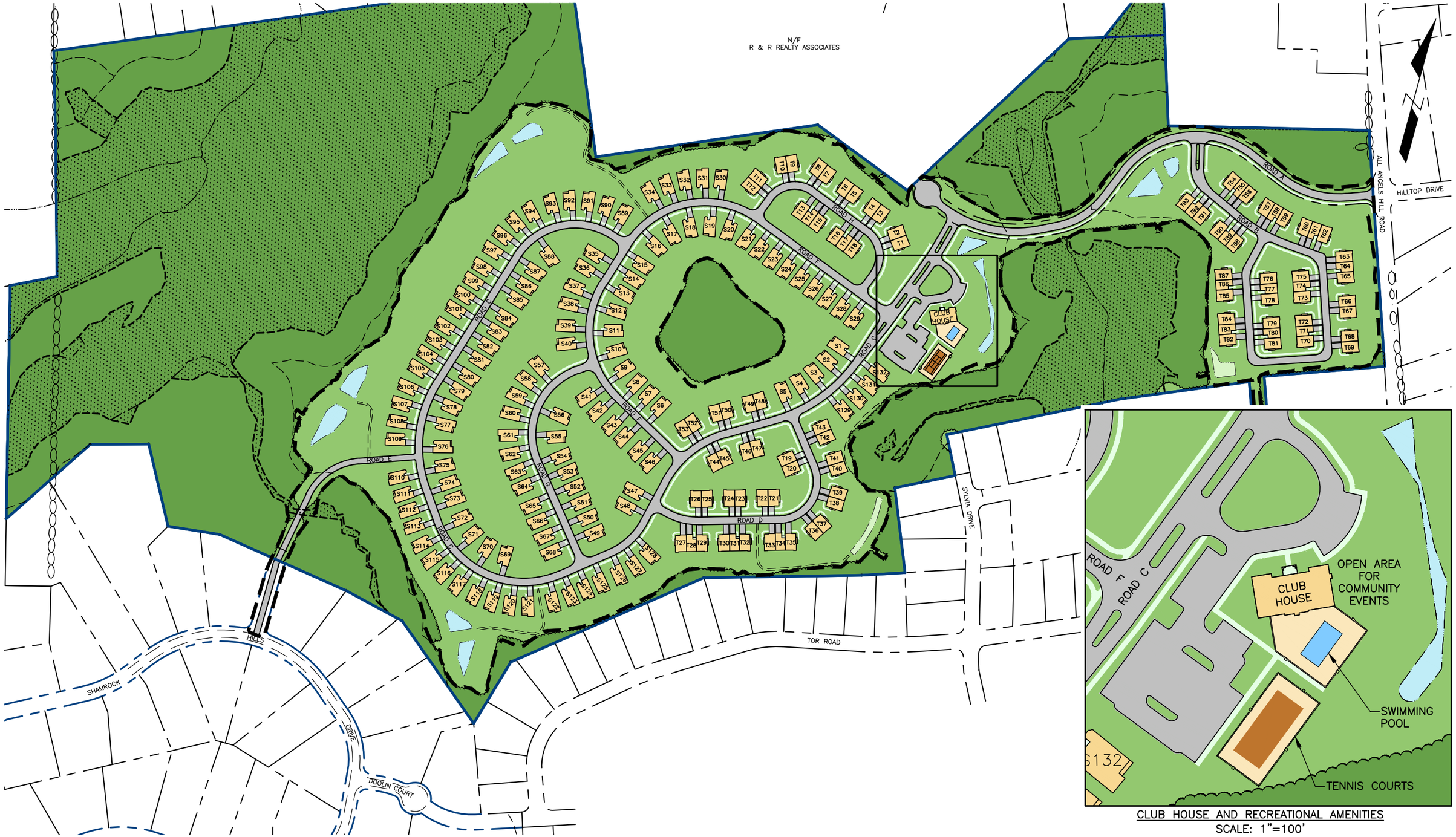
SCALE: 1"=300'



CLUB HOUSE AND RECREATIONAL AMENITIES
SCALE: 1"=100'

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HILLTOP VILLAGE AT WAPPINGER

RECREATIONAL RESOURCES

FIGURE 3.F-4
DATE: 02/2012
PAGE 244
SCALE: 1"=300'

3.F.3.3 Proposed Recreational Resources Offered to the Town

Future Development Parcel

According to the *Town of Wappinger Comprehensive Plan*, a survey was conducted in 2004 and one of the most requested amenities was for a new larger senior center.[56] A 1.48 acre parcel along the proposed Road "A" is being offered for dedication to the Town of Wappinger for recreational purposes. An example use of the property is shown in *Figure 3.F-5*, which depicts a Town Senior Center that would be open to the general public. The Proposed Action will generate a surplus of more than $57,000 to the Town of Wappinger each year, which could be used to cover any potential cost increases. Therefore, no mitigation measures are proposed.

This area is not included within the 73.72 acres of permanent open space. Should the Town not accept the offer of dedication, then the Future Development Parcel will be retained and will be maintained by the HOA. As such, no mitigation measures will be necessary if the offer of dedication to the Town is declined.

Robinson Lane Recreation Parcel

According to the *Town of Wappinger Comprehensive Plan*, the Town is looking at lands around Robinson Lane Park for potential acquisition for recreational purposes.[57] The Owner currently owns a 51.7 acre parcel on Robinson Lane adjacent to the existing Town Recreation Center on Robinson Lane and is currently offering this parcel in dedication to the Town of Wappinger for recreational purposes. The parcel contains old field areas as well as wetlands and regulated buffer area; however, there is approximately 28.08 acres of useable space. One example use (*Figure 3.F-6*) was developed to show that this parcel is suitable for passive and active recreation including expansion of existing athletic fields and supporting infrastructure. The Proposed Action will generate a surplus of more than $57,000 to the Town of Wappinger each year, which could be used to cover any potential cost increases. Therefore, no mitigation measures are proposed.

This area is not included within the 73.72 acres of permanent open space. Should the Town not accept the offer of dedication, then the parcel will remained by the Owner. As such, no mitigation measures will be necessary if the offer of dedication to the Town is declined.

3.F.3.4 Library District Fiscal Impact Analysis

Grinnell Library has an operating income of $439,624 and has 41,230 books, 2,655 audio materials, 3,383 video materials, 14 state licensed databases, 8 other licensed databases, and 91 print serial subscriptions. In 2010 the Grinnell Library Tax revenue generated from the undeveloped site was $545.11, or 0.24 percent of the total tax levy from the property based on a Total Assessed Value of $2,273,800. The fiscal impact analysis was expanded to determine the fiscal impacts of the Proposed Action on the library district (*Appendix C.7*). The fiscal impact of the Proposed Action is detailed in *Table 3.F-5*.

[56] *Town of Wappinger Comprehensive Plan*, September 27, 2010, pg. 81-82.
[57] *Town of Wappinger Comprehensive Plan*, September 27, 2010, pg. 80.

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HILLTOP VILLAGE AT WAPPINGER

FUTURE DEVELOPMENT PARCEL
EXAMPLE USE

FIGURE 3.F-5

DATE: 02/2012

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SCALE: 1"=40'

LAND AREA CALCULATIONS	
	AREA
TOWN OF WAPPINGER WETLANDS	2.12 Ac.
N.Y.S.D.E.C. WETLANDS	14.88 Ac.
N.Y.S.D.E.C. 100' ADJACENT AREA	6.64 Ac.
USABLE LAND	28.08 Ac.

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HILLTOP VILLAGE AT WAPPINGER

ROBINSON LANE PARCEL EXAMPLE USE

FIGURE 3.F-6

DATE: 02/2012

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SCALE: 1"=250'

Table 3.F-5: Library District Fiscal Impact Analysis

Current Tax Rate		0.16
Residential Cost	$	434,299
Cost per Resident	$	16
Additional Costs from Proposed Action	$	5,395
Estimated Tax Revenue from Proposed Action	$	11,482
Surplus	**$**	**6,087**

Detailed assessment of Library District costs and revenues, and calculations of estimated costs and revenues associated with the Proposed Action shows that **an Active Adult residential use on this site would be financially beneficial to the library district**. Residents of the Proposed Action would pay a surplus of funds to the library district.

3.F.3.5 Mitigation Measures

Proposed Action

Recreational facilities proposed on the property include a club house, swimming pool, tennis court, and open space area for community events. These facilities are located within the gated community; therefore, they will only be open to the residents of the Hilltop Village at Wappinger community. It is anticipated that majority of the residents will utilize the recreational facilities provided on the property. The HOA will be responsible for maintenance of all open space and recreational facilities. Therefore, no additional mitigation measures are proposed.

The Proposed Action will generate more than $57,000 in surplus income to the Town each year, which can be used to provide for any potential increase in recreational facility use. In addition, the surplus tax revenue generated by the Proposed Action can cover or assist in covering any potential cost increases. Therefore, no additional mitigation measures are proposed.

Future Development Parcel

Should the Town accept the offer of dedication, the Town can use the surplus income generated by the Proposed Action to support the future use of this parcel. In addition, the recreational fees generated by the Proposed Action can be used to support any recreational use of this parcel.

Should the Town not accept the offer of dedication, then the Future Development Parcel will be retained and will be maintained by the HOA. As such, no mitigation measures will be necessary if the offer of dedication to the Town is declined.

3.G Community Character, Land Use, and Zoning

This section describes the existing community character, land uses, and zoning of the project site and in the surrounding area. The Proposed Action's compatibility with the community character and surrounding land uses and zoning is evaluated. The potential impacts, if any, are identified and the appropriate mitigation measures, if any, are provided.

3.G.1 Existing Conditions

3.G.1.1 Community Character

A community is shaped by the topography and natural character of the land; the number of people and the housing built upon the land; the economy that shapes the lives of the people; and the function and appearance of the transportation system that links destinations. A community's character is also influenced by collective values and their influence on the landscape and the built environment[58].

The Proposed Action is located in the Town of Wappinger, an attractive community in southwestern Dutchess County with a strong connection to both nature and history. The area has experienced rapid population growth over the last four decades.[59] This growth has been possible because the regional economy shifted from agriculture and small mills to an integrated metropolitan economy with industries and large employers located throughout the suburban periphery, where land costs were lower and transportation more convenient.[60]

The Town of Wappinger has a unique combination of assets that makes it an attractive place to live, work, and play.[61] Key features are:

- Water resources, such as the Hudson River, Wappinger Creek, and Sprout Creek.
- Mix of commerce, including corporate offices, manufacturing, and retail.
- A good location within the region for jobs, transportation, recreation, and tourism.
- An excellent school system.
- Scenic views from hilltops and ridgelines.

Project Site

The project site is located on All Angels Hill Road (CR 94), approximately 3 miles south of Dutchess County Airport. The site is currently undeveloped with the exception of a paved driveway, which provides access to the commercial business Flavormatic. The ground cover consists of a paved driveway, woods, brush, and grass. There are two streams and wetlands present on the property. The two streams are located in the eastern and northwestern parts of the property, and the wetlands are located in the eastern and western parts of the property.

The project site is almost entirely surrounded by single family residential properties, with the exception of a commercial property and religious property to the north. There are two water bodies, Lake Oniad and Ye Olde Apple Orchard Pond, to the north of the property. Lake Oniad is located approximately 600 feet and Ye Olde Apple Orchard Pond is located approximately 120 feet from the northern property line.

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[58] *Town of Wappinger Comprehensive Plan*, September 27, 2010, pg. 48.
[59] *Town of Wappinger Comprehensive Plan*, September 27, 2010, pg. 2.
[60] Ibid.
[61] *Town of Wappinger Comprehensive Plan*, September 27, 2010, pg. 49.

Surrounding Area

Figure 3.G-1 provides an aerial view of the surrounding area within a ½-mile radius of the Proposed Action. A description of the surrounding area is provided below.

All Angels Hill Road (CR 94) – To the east of the project site and on either side of All Angels Hill Road (CR 94), the area consists primarily of residential properties with a commercial business. The area is fairly densely settled with single family homes of various styles and ranging from one- to two-stories. The home styles include ranch, split level, raised ranch, colonial, and contemporary. The commercial business is in a building that resembles a single family home.

Dutchess Heights and Rockingham Farms Neighborhoods – To the south of the project site, the area consists entirely of residential properties. The area is fairly densely settled with single family homes of various styles and ranging from one- to two-stories. The home styles include ranch, raised ranch, and colonial.

Kendell Farms, Shamrock Hills and Fieldstone Farm Neighborhoods – To the west of the project site, the area consists entirely of residential properties with large wooded areas. The area is sparsely settled with single family homes of various styles and ranging from one- to two-stories. The home styles include ranch, raised ranch, colonial, and duplex. There are large wooded areas

Ye Olde Apple Orchard and Lake Oniad Neighborhoods – To the north of the project site, the area consists primarily of residential properties with a commercial business, a church and a few wooded areas. The area is fairly settled with single family homes of various styles and ranging from one- to two-stories. The home styles include ranch, split level, raised ranch, and colonial. The commercial business is a one-story concrete building pushed back from All Angels Hill Road (CR 94). The church is a one-story Community Baptist Church.

3.G.1.2 Land Use

Real Property Class Data was obtained from the Dutchess County Real Property Tax Service. The parcel has a land use classification of residential vacant land. *Figure 3.G-2* illustrates the land uses within a ½-mile radius of the project site. To the north of the site, the land uses consist of single-family residences, multi-family residences, industrial, and vacant land. To the east of the site, the land uses consist of single-family residences, multi-family residences, commercial, religious, public services (e.g., utilities), and vacant land. To the south of the site, the land uses consist of single-family residences, multi-family residences, commercial, religious, public services (e.g., utilities), agriculture, and vacant land. To the west of the site, the land uses consist of single-family residences, open space, and vacant land.

3.G.1.3 Zoning

The property is currently zoned 1-Family Residence (R-40) District and Conservation Office Park (COP) District. *Figure 3.G-3* illustrates the zoning within a ½-mile radius of the project site. To the north of the site, the properties are zoned R-40, COP, and 1-Family Residence (R-20). To the east of the site, the properties are zoned R-20 and R-40. To the south of the site, the properties are zoned R-20 and R-40. To the west of the site, the properties are zoned R-40 and 1-Family Residence (R-15).

FIGURE 3.G-1
DATE: 02/2012
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SCALE: 1"=1000'

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HILLTOP VILLAGE AT WAPPINGER

AERIAL VIEW

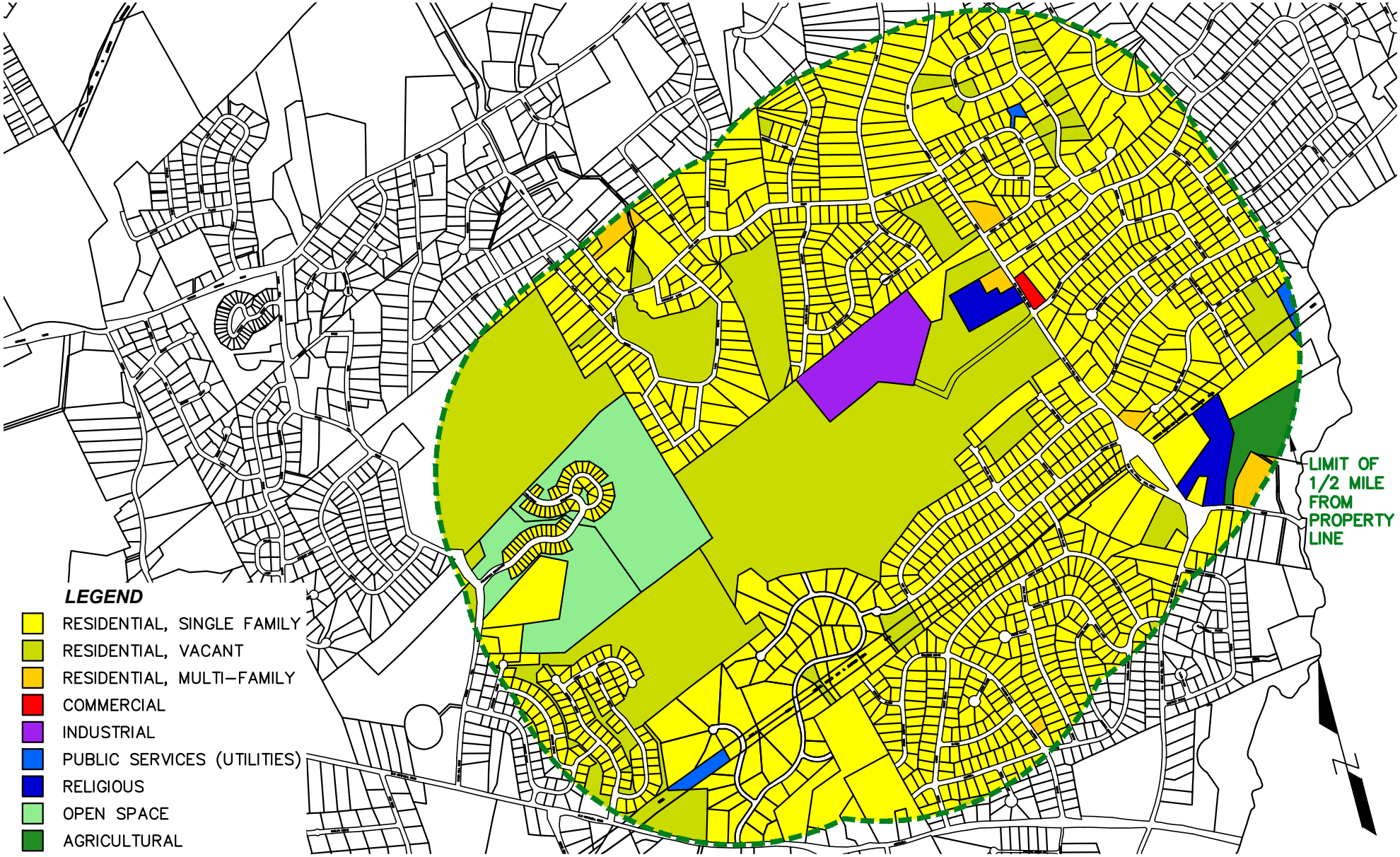

FIGURE 3.G-2
DATE: 02/2012
PAGE 252
SCALE: 1"=1,500'

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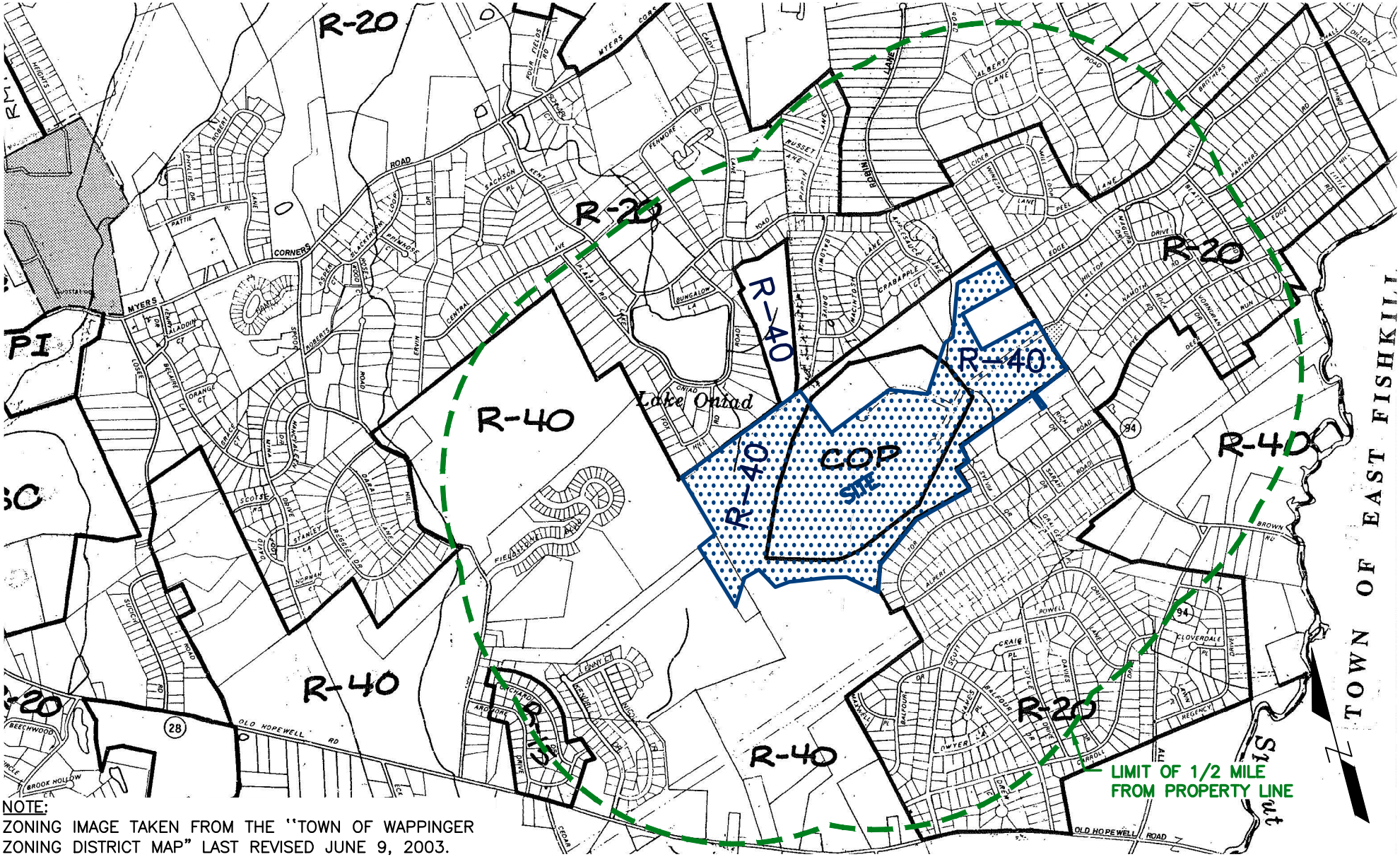
HILLTOP VILLAGE AT WAPPINGER

EXISTING LAND USE



NOTE:
ZONING IMAGE TAKEN FROM THE "TOWN OF WAPPINGER ZONING DISTRICT MAP" LAST REVISED JUNE 9, 2003.

FIGURE 3.G-3
DATE: 02/2012
PAGE 253
SCALE: 1"=1,500'

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HILLTOP VILLAGE AT WAPPINGER

EXISTING ZONING

3.G.1.4 Easement and Restrictions

A title search was performed on the property. Several easements and restrictions were revealed. The existing easements that provided locations and widths are shown in *Figure 3.G-4*. The existing easements are summarized in below:

- 10 foot wide Central Hudson Gas and Electric easement (L.1298 P.211) for the existing gas line, which runs parallel to the existing driveway and provides gas service to the R&R Realty Associates property.

- 20 foot wide Central Hudson Gas and Electric easement (L.1298 P.236) for the existing overhead power line, which runs parallel to the northern property line abutting the Community Baptist Church parcel and provides electrical service to the R&R Realty Associates property.

- 20 foot wide New York Telephone Company easement (L.1298 P.908) for communication lines, which runs parallel to the northern property line.

- 17 foot by 17 foot New York Telephone Company concrete pad easement (L.1943 P.536) for telephone equipment, which is adjacent to the existing driveway and All Angels Hill Road.

- 60 foot easement/ROW (L.1947 P.227 and FM#9905, 11070, and 11070A) for the existing driveway, which provides access to the R&R Realty Associates property.

- 20 foot wide sanitary sewer easement (FM#7410) for the exiting sanitary sewer line, which runs parallel to All Angels Hill Road.

- 30 foot utility easement agreement (FM#11070A) on the R&R Realty Associates property to allow the Proposed Action to connect to utilities on Baldwin Drive.

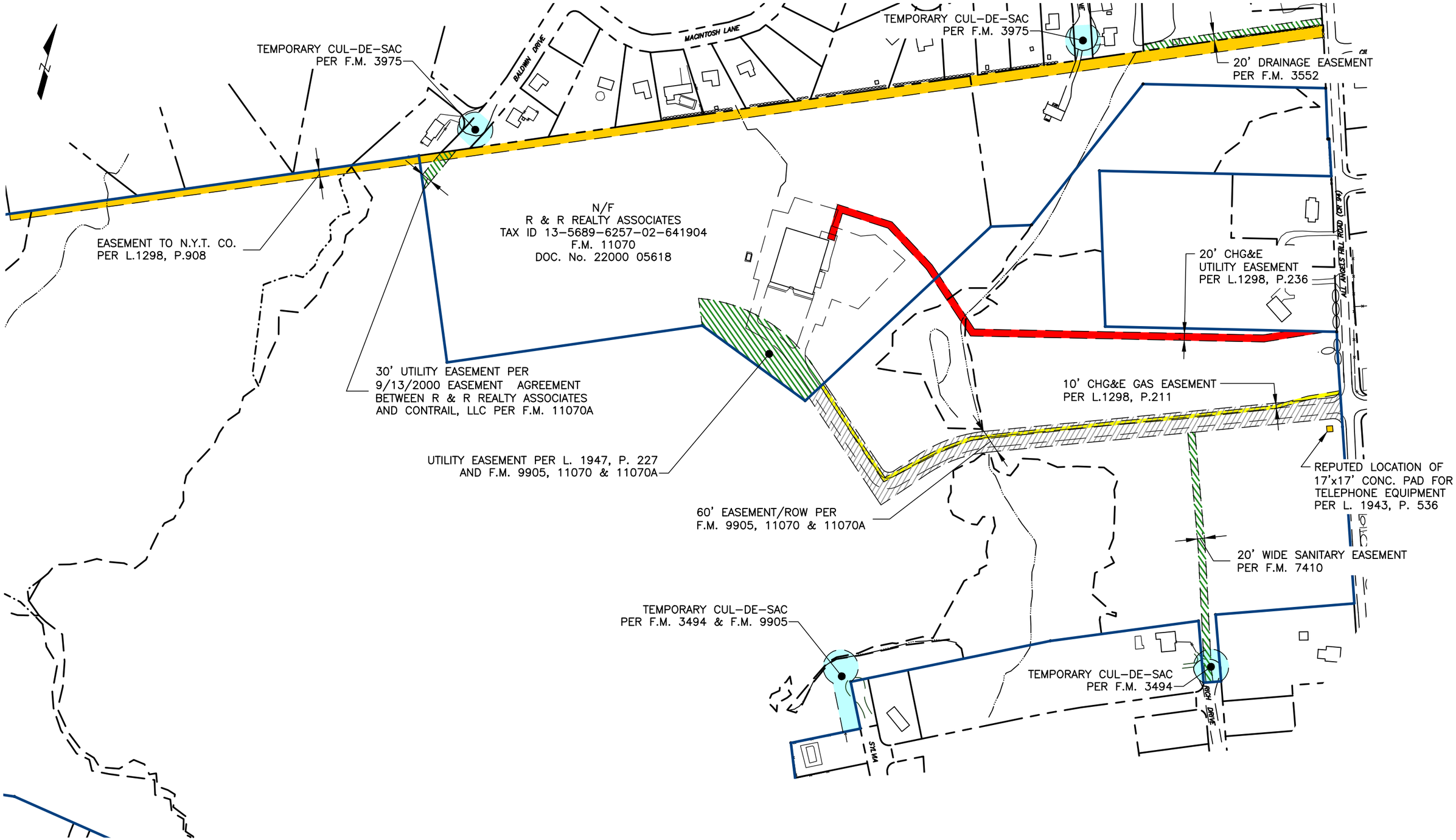
- A temporary 50 foot cul-de-sac (FM#3494) to allow Rich Drive to dead end, until future connection to the Contrail, LLC property.

- A temporary 50 foot cul-de-sac (FM#3494 and 9905) to allow Sylvia Drive to dead end, until future connection to the Contrail, LLC property.

Additional easements and restrictions that did not provide locations and/or widths that were not shown in *Figure 3.G-4* is summarized below:

- Contract guaranteeing a minimum income with Wappingers Electric Corporation for line extension (L.452 P.160).

- Granted to Wappingers Electric Company the right, privilege, and authority to construct, reconstruct, relocate, operate, repair, maintain, and removal of its electric lines (L.445 P.393).



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LEGEND

CHG & E GAS EASEMENT	UTILITY EASEMENT	COMMUNICATION EASEMENT & UTILITY EASEMENT CROSSING
COMMUNICATION EASEMENT	RIGHT OF WAY EASEMENT	GAS EASEMENT & RIGHT OF WAY EASEMENT CROSSING
CHG & E UTILITY EASEMENT	TEMPORARY CUL-DE-SAC EASEMENT	TEMPORARY CUL-DE-SAC EASEMENT & UTILITY EASEMENT CROSSING

HILLTOP VILLAGE AT WAPPINGER

EXISTING EASEMENTS

FIGURE 3.G-4
DATE: 02/2012
PAGE 255
SCALE: N.T.S.

- 150 foot wide Central Hudson Gas and Electric easement (L.650 P.188) for the existing gas line, which is now located within the Shamrock Hills Subdivision.

- Granted to U.S. Cablevision Corp. an easement (L.1317 P.24) to construct, maintain, and repair CATV facilities. Location and width of easement not provided.

Some of the exiting easements will have to be amended and/or dissolved. Amending and/or dissolving the existing easements will be coordinated with their corresponding utility companies. Utility easements will be established, where necessary. The proposed amended and/or dissolved existing easements and the locations of any proposed easements will be shown on the final site plans as part of the FEIS.

3.G.2 Planning Documents

There are four planning documents that have relevance for the Proposed Action: The *Town of Wappinger Comprehensive Plan*; *Greenway Connections;* Directions: *The Plan for Dutchess County*; and the *Town of Wappinger Recommended Model Development Principles*.

3.G.2.1 Town of Wappinger Comprehensive Plan

The *Town of Wappinger Comprehensive Plan* (*Comprehensive Plan*) "is a document that reflects the hopes and expectations of the people of Wappinger, with specific objectives and recommendations about how to guide growth so as to preserve important environmental resources and improve the quality of life of the residents, workers, and visitors in the community."[62] The *Comprehensive Plan* establishes several goals and objectives, which are described below.[63]

1. **Environmental Resources** – Encourage the preservation of environmentally significant features.

    A. Establish, preserve and/or restore open space corridors including riparian buffers along Wappinger Creek, Sprout Creek and the Hudson River, and improve access to these resources.

    B. Regulate the development of floodplains, wetlands, stream corridors, steep slopes and ridge lines to ensure minimal disruption of their environmental functions and scenic qualities.

    C. Preserve the quality and quantity of the Town's surface and groundwater resources through land use regulation, monitoring, testing and promotion of water-saving systems.

    D. Protect surface water quality through regulation of stormwater runoff, particularly during new construction, and through rigorous enforcement.

    E. Develop a system of central utilities that will protect water resources by reducing the number of failing septic systems.

[62] *Town of Wappinger Comprehensive Plan*, September 27, 2010, pg. 1.
[63] *Town of Wappinger Comprehensive Plan*, September 27, 2010, pg. 8-12.

F. Protect the Town's biodiversity through protection of endangered species and threatened plant and animal populations, as well as through control of invasive species.

G. Educate stakeholders, contractors, public works employees, and the public about local environmental issues and best practices.

H. Cooperate with adjoining and area municipalities to address regional environmental issues, such as the Wappinger Watershed Intermunicipal Council.

2. **Population and Housing** – Improve housing choice in the Town by encouraging a balance of housing types and sizes that meet the needs of existing and future Wappinger residents and employees.

   A. Affordable/Workforce housing. Encourage a sufficient supply of homes within economic reach of Town residents.

   B. Accessory apartments. Continue to allow the development of accessory apartments in appropriate conditions on single-family lots.

   C. Variety of housing types. Require that certain percentages of large, new developments be comprised of a variety of housing types (such as attached single-family homes, duplexes and apartments).

   D. Development in existing centers. Encourage new higher density residential development in existing centers that can be most economically served by existing roads, utilities and community facilities. Any new higher density residential development should occur in relation to existing centers.

   E. Variety of architectural styles. Encourage a variety of architectural styles (such as Colonial, Arts and Crafts, Modern/Contemporary, etc.) in new single-family housing developments.

3. **Economic Base** – Encourage a balanced economy with diversified employment opportunities.

   A. Promote regional cooperation in economic development planning.

   B. Improve business opportunities within the framework of improved community character and appearance.

   C. Promote well-designed office research parks and similar uses that offer good jobs and wages in appropriate locations.

4. **Community Appearance and Character** – Encourage development with high aesthetic standards to provide a visual and natural environment that will promote economic stability, enhance community character, and will be compatible with surrounding land uses.

   A. Improve the appearance of the Route 9 corridor.

B. Develop the Hughsonville, Chelsea, New Hackensack, Swartoutville and Myers Corners Hamlets, and the Old Route 9 District as vibrant, traditional town/village centers.

C. Protect important landscapes through open space and farmland conservation.

D. Protect historic buildings and sites.

E. Regulate signage to promote appealing streetscapes and to protect important landscapes.

5. **Transportation** – Encourage the development of a transportation system consistent with Town land use patterns and objectives, including public transportation, pedestrian and bicycle systems.

A. Improve traffic conditions on Route 9 and Route 9D.

B. Use transportation improvements as a positive factor in shaping growth.

C. Require service roads, internal connections and combined parking lots, where appropriate.

D. Minimize the number of access points on major and collector roads.

E. Develop a sidewalk network and bikeway system connecting community facilities, centers and schools.

F. Improve street connectivity between neighborhoods as new areas are developed.

6. **Water Supply and Sewage Treatment** – Continue the development of a system of central utilities to address the needs of existing developed areas with water supply and sewage treatment problems, and to achieve land use goals and objectives.

A. Extend utilities at the lowest cost feasible by serving the highest number of users per linear distance of utilities.

B. Encourage public involvement in planning decisions associated with municipal sewer and water service.

7. **Recreation and Community Facilities**

Develop recreational and cultural facilities and programs that are adequate to serve the Town's current and future populations.

A. Anticipate future needs and provide appropriate locations for facilities, services and programs. Locate recreational facilities in such a way that they are compatible with Town development patterns.

B. Maximize community use of existing facilities.

C. Develop Greenways along the Hudson River, Wappinger Creek and Sprout Creek for public recreation.

D. Develop additional trails throughout the Town to meet public demand for nature and walking trails in cooperation with the Wappinger Greenway Trail Committee, which is an intermunicipal group comprised of the Towns of Wappinger and Poughkeepsie and the Village of Wappinger Falls.

8. **Recreation and Community Facilities** – Maintain and enhance the Town-wide comprehensive recycling program.

   A. Encourage increased rates of recycling.

   B. Encourage proper disposal of hazardous wastes.

   C. Monitor recycling rates, solid waste disposal rates, and hazardous waste disposal rates through objective measurements.

9. **Land Use** – Guide the development of the Town in a way that preserves environmentally significant features, improves housing choice, and encourages a balanced economy.

   A. Designate areas of the Town intended for low-density residential development, farmland protection, and open space.

   B. Designate areas of the Town that are well situated for medium- and high-density residential development.

   C. Designate areas of the Town that, due to transportation links, the intensity of proximate land uses and other features, are appropriate for current and future use as Town centers.

   D. Designate areas of the Town where only commercial, industrial, or institutional land uses are appropriate.

3.G.2.2 Greenway Connections and Greenway Guides

<u>Greenway Connections</u>

The 1991 Hudson River Valley Greenway Act created a process for voluntary regional cooperation among 242 communities within the 13 counties that border the Hudson River (known as Greenway Communities). The intent of the Greenway Act is to promote the goal of the preservation, enhancement and development of the resources of the Hudson River Valley while continuing to emphasize economic development activities.

To assist Greenway Communities in Dutchess County, the Dutchess County Department of Planning and Development created *Greenway Connections*, a sourcebook of ideas and solutions that highlight community projects and provide principles to build on or improve landscape patterns in Dutchess County. The principles are as follows:[64]

A. **Natural Patterns**

[64] Greenway Connections, p.22 and 24-26.

1. Highlands – encompass mountainous areas, ridgelines, and hillsides, providing large block of land for wildlife habitat, important plant species, and scenic woodlands. Key principles include: avoid disturbing steep slopes; keep any buildings in trees and below the ridgeline; and build ridgeline trails with occasional open vistas.

2. Lowlands – include the waterways, wetlands, and floodplain systems of the valley floors. Key principles include: protect wetlands and adjacent buffers with a goal of no net loss; avoid building in floodplains and maintain vegetation along water's edge; and provide trails along waterways with regular public access points.

B. **Settlement Patterns**

1. Centers – are the traditional central places of community life. Key principles include: focus development within walking distance of a central core or neighborhood center to encourage alternatives to the car and efficient use of land; encourage a mixture of uses with prominent central locations for civic structures, such as post offices and municipal buildings; and identify priority growth areas, both infill redevelopment sites and growth areas that will strengthen existing centers or establish new centers.

2. Countryside – include the rural areas, farmlands, and forests outside centers and sill beyond the reach of suburban development. Key principles include: protect farmlands and farm soils through conservation development techniques and coordinated efforts to support agricultural operations; maintain the open, rural character of the landscape, protecting critical environmental areas and preventing strip commercial or residential development lining the roadways; and scatter new buildings in tree lines or group in hamlet-forms, retaining more than half of the land as part of interconnected open space systems.

3. Suburbs – are existing spread-out, single-use areas, such as outlying single-family residential or highway business districts. Key principles include: gradually connect separated subdivision into neighborhoods through interconnecting streets and pathways; create focal point for community interaction (small retail cluster, public building, park or playground) within a 5 to 10 minute walk of most houses to act as a neighborhood center; and encourage commercial strips to become mixed use centers over time by limiting the length of the district and promoting infill to the rear and along the fronts for large parking lots.

Greenway Guides

Greenway Connections provides a list of Greenway Guides with specific policies to be implemented for achieving the desired plan of development for Dutchess County. The Greenway Guides are organized by project type and location in relation to the county's primary landscape patterns:[65]

A. **Protecting the Countryside** – How to comfortably fit low density development into the rural landscape without destroying its open space and agricultural characteristics.

1. Fitting into the landscape – Rural development should fit into its natural surroundings,

[65] Greenway Guides.

rather than be superimposed as a dominant element in the countryside.

2. Preventing Strip Subdivisions – Building new housing in the countryside off side roads or shared drives, screened from the public view, rather than lining rural roads with house lots or commercial uses.

3. Site Sensitive Utilities – Conserve special site features and rural qualities through a creative combination of on-site and shared utility systems.

4. Saving Farmland with Development – Create farm conservation and development plans that allow future home site to co-exist with active farmland, conserve the best agricultural soils, and discourage roadside sprawl.

B. **Strengthening Centers** – Ways to reinforce traditional settlement centers, including hamlets, villages, cities, and their immediately surrounding growth areas, or build new town centers.

1. Priority Growth Areas – Focus development in community-identified growth areas, both infill redevelopment sites and land in and immediately around existing or proposed centers, rather than encouraging most new construction on outlying greenfields or farmland.

2. Walkable Communities – Plan for pedestrians as a top priority in all cities, villages, and town centers, creating a safe and attractive network of sidewalks and crossings within a 5 to 10 minute walk of the center.

3. Building in Context – Insist on new construction that is compatible with the existing community context and nearby distinctive or historic buildings, while still adding interest and variety to the streetscape.

C. **Improving Suburbs** – Methods to improve outlying single-use suburban districts, including highway commercial strips and separate tracts of single-family housing.

1. Commercial Strip Development – Stop the spread of strip commercial zones lining our roadways and begin to reclaim the strip into more contained sub-centers with shared driveways and parking, higher quality landscaping and architecture, and a mix of adjacent uses.

2. From Congestion to Circulation – Tame traffic congestion with a three-prong approach: strictly limit access driveways along major roads, disperse vehicles on interconnected secondary street systems, and mix land uses closer together to encourage alternatives to the automobile.

D. **Greenway Connections** – Strategies to create natural corridors and green linkages between settlement centers and countryside, such as transportation networks, trails and open space systems.

1. Connected Habitats – Identify and preserve significant wildlife habitats and connected vegetative corridors, as large and continuous as possible, in the development process.

2. Stream Corridor Protection – Retain and incorporate natural vegetation as buffers between developed or farmed areas and rivers, streams, and creeks.

3. Highways into Greenways – Treat roads and streets as our most important public open space system and the most visible opportunity to create a network of scenic Greenways.

4. Wellhead and Aquifer Protection – Designate wellhead protection areas and adopt measures against potential sources of aquifer contamination to ensure long-term sources of clean drinking water.

E. **Site Specifics** – Site plan details, such as sign guidelines, landscaping and lighting details, or parking recommendations.

1. Landscaping – Make the landscaping on every site plan part of the larger open space system, incorporating natural features of the site, using native plants whenever possible, and connecting to the greenery patterns on adjacent parcels.

2. Signs – Integrate signs into their site by using building signs as accessory elements within high quality architecture and embedding any freestanding signs into the overall landscaping.

3. Parking Lots – Treat parking strictly as an accessory use, with parking lots to the side and rear of buildings and featuring quality landscaping and architecture along the frontage, not views of asphalt.

4. Lighting – Make street and commercial lighting distinctive and human-scale in central places, while preventing excessive glare or wasted light into the night sky.

5. Street Trees – Plant continuous rows of street trees between the roadway and sidewalk in developed areas, as well as trees along rural roads to create green corridors through the countryside.

The Greenway Guides are intended to help create better communities, and they provide direction about the kinds of development a community welcomes, yet still allow for flexibility in the local planning review process.[66]

3.G.2.3 Directions: The Plan for Dutchess County

Directions: The Plan for Dutchess County, which was published in 1985, is the comprehensive planning document for Dutchess County. On its Land Use Map, *Directions* classified the general vicinity of the project site as an area for rural uses. Rural land uses in the County Plan included residential development with one-acre lots. *Directions* also established several planning goals and priorities for Dutchess County to advocate, many of which have relevance for the Proposed Action. The applicable goals are described below:

- The preservation and maintenance of the quantity and quality of the county's surface and groundwater resources.

[66] *Greenway Connections.*

- The protection of the County's soils, prime and important agricultural lands, steep slopes, and significant natural areas.

- An adequate long-term supply of clean, reasonably-priced water and environmentally sound disposal of wastes.

- The promotion of a land use pattern that strengthens existing centers, protects important natural resources, maintains an efficient transportation network, provides for economical services and facilities, fosters an orderly pattern of development, and helps each community protect its community values and distinct identity.

- High quality site planning in order to promote beauty, order and harmony, to ensure compatibility with surrounding land uses, and to provide a visual and natural environment that will encourage economic stability and growth.

3.G.2.4 Recommended Model Development Principles

The *Town of Wappinger Recommended Model Development Principles* presents specific recommendations on how to foster more environmentally sensitive local site design within the Town of Wappinger. The recommendations were crafted in conjunction with community residents representing a wide variety of local interests, both public and private, that participated in the Site Planning Roundtable initiated by the Wappinger Creek Watershed Intermunicipal Council (WIC)[67].

The recommended model development principles are as follows:

1. **Street Width** – Design residential streets for the minimum required pavement width needed to support travel lanes; on-street parking; and emergency, maintenance and service vehicle access. These widths should be based on traffic volume.

2. **Street Length** – Reduce total length of residential streets and driveways by examining alternative street layouts and reducing driveway lengths to determine the best option for increasing the number of homes per unit of roadway length.

3. **Right-of-Way Width** – Wherever possible, residential street right-of-way widths should reflect the minimum required to accommodate the travel-way, sidewalk, and vegetated open channels. Utilities and storm drains should be located in the right-of-way wherever feasible.

4. **Cul-de-sacs** – Minimize the number of residential street cul-de-sacs and incorporate landscaped areas to reduce impervious cover. The radius of cul-de-sacs should be the minimum required to accommodate emergency and maintenance vehicles. Alternative turnarounds should be considered. Demonstrate that there is no alternative to a cul-de-sac and that the cul-de-sac or turnaround has been designed to minimize the amount of impervious surface and incorporate center islands.

[67] *Town of Wappinger Recommended Model Development Principles*, June 2006.

5. **Vegetated Open Channels** – Where density, topography, soils and slope permit, vegetated open channels should be used in the street right-of-way to convey and treat stormwater runoff.

6. **Parking Ratios** – The required parking ratio governing a particular land use or activity should be enforced as both a maximum and a minimum in order to curb excess parking space construction. Existing parking ratios should be reviewed for conformance taking into account local and national experience to see if lower ratios are warranted and feasible.

7. **Parking Codes** – Parking codes should be revised to lower parking requirements where mass transit is available or enforceable shared parking arrangements are made. Where opportunities exist, shared parking arrangements should be promoted during the initial plan review. Developers should show that a shared parking arrangement can accommodate parking for the proposed use.

8. **Parking Lot Size** – Reduce the overall imperviousness associated with parking lots by minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in spillover parking areas.

9. **Structured Parking** – Provide meaningful incentives to encourage structured and shared parking to make it more economically viable.

10. **Parking Lot Runoff** – Wherever possible, provide stormwater treatment for parking lot runoff using bioretention areas, filter strips, and/or other practices that can be integrated into required landscaping areas and traffic islands.

11. **Open Space Design** – Advocate open space development that minimizes total impervious area, reduces total construction costs, conserves natural areas, provides community recreational space, and promotes watershed protection.

12. **Setbacks and Frontages** – Relax side yard setbacks and allow narrower frontages to reduce total road length in the community and overall site imperviousness. Relax front setback requirements to minimize driveway lengths and reduce overall lot imperviousness.

13. **Sidewalks** – Promote more flexible design standards for residential subdivision sidewalks. Where practical, consider locating sidewalks on only one side of the street and providing common walkways linking pedestrian areas.

14. **Driveways** – Reduce overall lot imperviousness by promoting alternative driveway surfaces and shared driveways that connect two or more homes together.

15. **Open Space Management** – Clearly specify how community open space will be managed and designate a sustainable legal entity responsible for managing both natural and recreational open space.

16. **Rooftop Runoff** – Direct rooftop runoff to pervious areas such as yards, open channels or vegetated areas and avoid routing rooftop runoff to the roadway and the stormwater

17. **Buffer Systems** – Create a naturally vegetated buffer system along all water resources that also encompasses critical environmental features and supports the Town's commitment as a Greenway Community (Greenway Guide D2). The buffer system should be designed to protect the Town of Wappinger's water quality and quantity.

18. **Buffer Management** – The riparian stream buffer should be preserved or restored with native vegetation. The buffer system should be maintained through the plan review, delineation, construction, and post-development stages.

19. **Clearing and Grading** – Clearing and grading of forests and native vegetation at a site should be limited to the minimum amount needed to build lots, allow access, and provide fire protection. A fixed portion of any community open space should be managed as protected green space in a consolidated manner.

20. **Tree Conservation** – Conserve trees and other vegetation at each development site by planting additional vegetation, clustering tree areas, minimizing native vegetation disturbance, and by promoting the use of native plants. Wherever practical, manage community open space, street right-of-way, parking lot islands, and other landscaped areas in a manner that conserves native trees and vegetation.

21. **Conservation Incentives** – Incentives and flexibility in the form of density compensation, property tax reduction, stormwater credits, and by-right open space development should be encouraged to promote conservation of stream buffers, forests, meadows, and other areas of environmental value. In addition, offsite mitigation consistent with locally adopted watershed plans should be encouraged.

22. **Stormwater Outfalls** – New stormwater outfalls should not discharge unmanaged stormwater into wetlands regulated by federal, state or local government, sole-source aquifers, or other water bodies. Both the quantity and quality of stormwater should be controlled to prevent impacts from stormwater pollution and flooding.

3.G.3 Compatibility of the Proposed Action

3.G.3.1 Existing Community Character, Zoning, and Land Use

Community Character

The Proposed Action will introduce single-family homes and townhomes onto the project site. Residential development in this part of the Town generally consists of single-family homes (*Figure 3.G-5*). The Proposed Action clusters the majority of the residences and club house toward the interior of the property utilizing the existing topography and landscape. Additional landscaping was added along the property lines reducing the project's visual impact from the adjacent properties and surrounding road network. Therefore, the residences and club house will not be highly visible to where they would seem out of character with other existing homes in the immediate surrounding area (*Figure 3.G-6* through *Figure 3.G-12*).

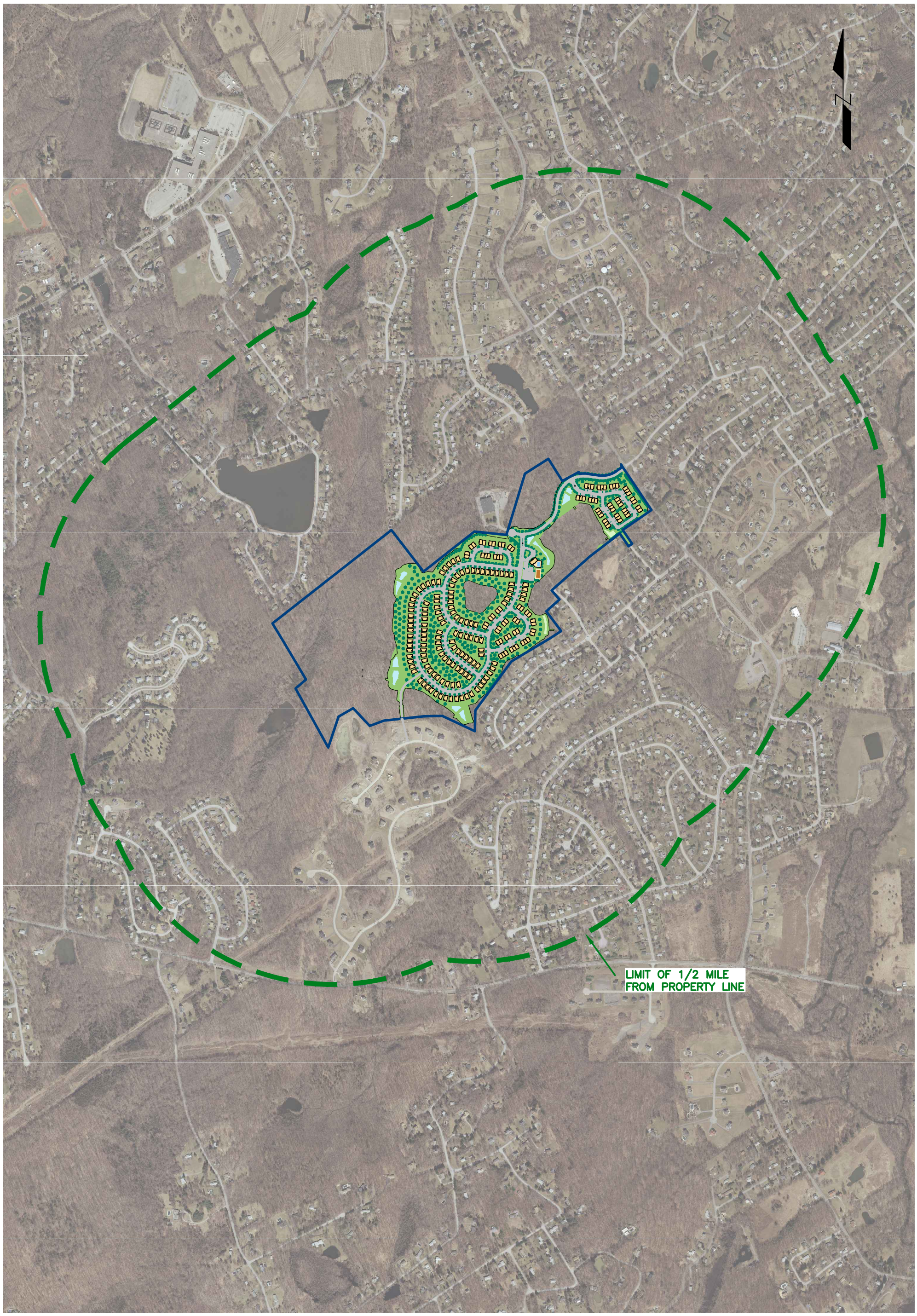

FIGURE 3.G-5
DATE: 02/2012
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SCALE: 1"=1,000'

PREPARED BY:
POVALL ENGINEERING, PLLC

HILLTOP VILLAGE AT WAPPINGER

AERIAL VIEW WITH PROPOSED ACTION

Figure 3.G-6 Existing Homes on Baldwin Drive

Figure 3.G-7 Existing Homes on Macintosh Lane

Figure 3.G-8 Existing Homes on Crabapple Court

Figure 3.G-9 Existing Homes on Applesauce Lane