Appendix A

Correspondence Received on the DEIS

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Capital District Office
Phone: (518) 235-8050

21 Fox Street, Poughkeepsie, New York 12601
Phone: (845) 454-3980 Fax: (845) 454-4026

North Country Office
Phone: (518) 812-0513

Orange County Office
Phone: (845) 567-1133

Web: www.chazencompanies.com

August 31, 2006

Mr. Billy L. Crowder, Chairman
and Members of the Planning Board
Town of Putnam Valley Planning Board
265 Oscawana Lake Road
Putnam Valley, New York 10579

Re: Emerald Ridge Environmental Impact Statement, 5th Review
Tax ID: 84.-1-5/10.1/10.2/10.3
Job Number: 10424.05

Dear Chairman Crowder and Members of the Planning Board:

As you know, the Planning Board held a public hearing on the Draft Environmental Impact Statement (DEIS) and the Preliminary Subdivision Plat on July 31, 2006; the public hearing on the DEIS has been closed. It is recommended that the applicant address the following comments in the Final Environmental Impact Statement (FEIS).

2-1

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3. Throughout the document, the applicant provides information regarding the Brookfalls Cottages parcel. The applicant should identify the current status of the subdivision plan, site development plans, and easements associated with the Brookfalls Cottage's parcels and how said documents and approvals will need to be altered as a result of the proposed emergency access road. Is the applicant going to make this application or is Brookfalls Cottages, Inc? It is recommended that the plans and easement documents that will need to be amended be provided in an appendix.

2-2 4. An existing conditions survey of the entire Brookfalls Cottages parcel should be provided as should existing easement documentation.

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2-5 7. Now that an emergency access road is proposed and amendments will be required to the site development plans recently approved by the Planning Board for Brookfalls Cottages, should the project area include Brookfalls Cottages, Inc. in its entirety?

2-6 8. If an easement is proposed for the emergency access road, will the easement be wider than 25 feet? If so, the net lot area calculation will need to be adjusted.

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3.13-1 11. The applicant should identify the cumulative impacts of the emergency access road on the Brookfalls Cottages parcel. Will the proposed road facilitate additional lots on the Brookfalls parcel? Will the lots of Brookfalls Cottages still conform to the net lot area requirements? Will stormwater run-off affect the homes downhill?

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3.1-1 14. The applicant should identify if temporary grading easements will be required for grading taking place over proposed internal property lines.

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3.6-2 18. Although the DEIS provides a brief overview of the landscaping associated with the stormwater basin and a general list of plantings is provided on Sheet UD-5.3, a detailed landscaping plan should be provided for each basin. Specific locations and species types should be provided and should be aesthetically pleasing and provide screening, as well as offer proper stormwater management.

3.4-2 19. The stormwater section needs to be revised to include the emergency access road and identify impacts (if any) to the Brookfalls Cottages parcel. The Stormwater Pollution prevention Plan (SWPPP) and Erosion and Sediment Control Plan should be revised.

3.4-3 20. The proposed basin on lot 22 is 10 feet deep and spans 180 feet from berm to berm. The applicant should attempt to reduce the size of the basin on lot 22 and determine if this basin can be relocated in a less visible area; if relocation is not feasible, extensive landscaping should be required. The stormwater section should describe the aesthetics of all proposed basins and how each basin will be properly screened. As previously mentioned, detailed landscaping plans, including cross-sections, should be provide and described in text.

3.4-4

2-10 21. It is recommended that the conservation easements be permanently delineated in the field by use of split-rail fence or large boulders or a combination of both.

2-10 Split-rail fence may be more appropriate in areas in close proximity to proposed dwellings and lawn space.

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3.1-3 23. A blasting mitigation plan is provided and described in text. This plan and the text describing it should be revised to include the emergency access road.

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3.1-6 27. The applicant estimates the amount of truck trips required to remove the excess material from the site. How will this number differ with the emergency access road now proposed?

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3.6-3 30. As much of the biodiversity studies were incomplete when the DEIS was accepted, it is anticipated that the entire Vegetation and Wildlife Section and associated reports will be revised and resubmitted in the FEIS. The vegetation and Wildlife Section should include all materials required per the adopted scope and any additional studies or analysis required and discussed with the Wetlands Inspector. The applicant should determine if the ecological assessment report evaluates the land area in proximity to the proposed emergency access road. This report may need to be expanded upon to include this additional area.

3.6-4

3.6-5 31. The discussion and table pertaining to the number and size of trees to be removed should be updated to take the emergency access road into account. An updated tree survey should be provided.

3.7-1 32. The proposed emergency access road should be discussed in the Traffic and Transportation Section. The applicant should specifically mention that the proposed emergency access road will not be used during construction as a point of entry for construction vehicles.

3.7-2 33. It is recommended that the applicant contact the adjoining owners to discuss the possibilities of providing a pedestrian access easement from the proposed road to the trails located off-site. The easement should be located so that access to the off-site trails is feasible.

3.9-1 34. The Police, Fire, and Emergency Medical Services Section should be revised to include the proposed emergency access road and specifically detail how this feature will benefit these services. The emergency access road should be specifically described in the mitigation section. The applicant should identify if apparatus responding from Station 2 would utilize the emergency access road on any call to the proposed development. The emergency access road may be a safer route into the development, as the turning radius onto Marsh Hill Road when traveling south on Peekskill Hollow Road has been identified as a problem.

3.10-1 35. The applicant has prepared a Phase 1 Cultural Resource Survey. The applicant should determine if this study evaluated the land area in proximity to the proposed emergency access road. This report may need to be expanded upon to include this additional area.

3.12-1 36. The applicant should determine if new school and town budgets and associated tax rates; would substantially alter the fiscal analysis provided in the DEIS.

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2-13

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This completes my comments at this time. Additional review will take place upon the submission of the FEIS.

Sincerely,

Jan K. Johannessen
Town Planner

cc: William A. Zutt, Esq. (via fax 845-528-2566)
Irv Sevelowitz, Code Enforcement Officer (via fax 526-8806)
Todd Atkinson (via fax 914-232-6827)
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Josh Moreinis, AICP, PP (via fax 265-4418)
Keith Staudohar (via fax 914-736-3693)
David S. Steinmetz, Esq. (via fax 914-683-5490)

04010
JM

THE *Chazen* COMPANIES

Facsimile Transmission

COPY

To: Laura Lussier

Company: Putnam Valley Planning Board

cc:

William A. Zutt, Esq. (via fax 845-528-2566)
Irv Sévelowitz (via fax 526-8806)
Todd Atkinson (via fax 914-232-6827)
Bruce Barber (via fax 914-962-0330)
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Keith Staudohar (via fax 914-736-3693)
David S. Steinmetz, Esq. (via fax 914-683-5490)

Date: August 31, 2006

Fax No: 526-3740

Regarding: Comments for Emerald Ridge FEIS

Comments: Please find the attached comments for inclusion in the FEIS.

From: Jan K. Johannessen

Company: The Chazen Companies – Dutchess County Office

Phone No: (845) 454-3980 Fax No: (845) 454-4026

Number of Pages (Including this page): 7

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Dutchess County Office:
21 Fox Street
Poughkeepsie, NY 12601
Phone: (845) 454-3980 Fax: (845) 454-4026
Web: www.chazencompanies.com

Orange County Office:
Phone: (845) 567-1133 Fax: (845) 567-1925

Capital District Office:
Phone: (518) 273-0055 Fax: (518) 273-8391

North Country Office:
Phone: (518) 812-0513 Fax: (518) 812-2205

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Town of Putnam Valley Planning Board
265 Oscawana Lake Road
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David S. Steinmetz, Esq. (via fax 914-683-5490)

10424.05

RECEIVED
AUG 14 2006
PLANNING BOARD

Hudson Highlands Land Trust
Protecting the Highlands

P.O. Box 226
1180 Route 9D
Garrison, NY 10524

PHONE: 845.424.3358
FAX: 845.424.3483

info@hhlt.org
www.hhlt.org

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Andrew Chmar
Executive Director

Marlo Kovacs

August 11, 2006

Honorable Billy Lee Crowder, Chairman
and Members of the Planning Board
Town of Putnam Valley
265 Oscawana Lake Road
Putnam Valley, NY 10579

Re: **Emerald Ridge Subdivision**

Dear Chairman Crowder:

The Planning Board is currently accepting comment from the public related to the DEIS for the Emerald Ridge Subdivision, and the Hudson Highlands Land Trust respectfully submits this letter identifying our questions and concerns as part of the public review process.

The Highlands Conservation Act, signed by President Bush in 2004, recognizes the importance of the natural and cultural resources in the Highlands region and distinguishes our home as a landscape of national significance. In 1987, the NYS Legislature recognized the Hudson River Estuary and its tributaries are of "statewide and national importance".

Putnam Valley lies in the Hudson Highlands, a region considered by some as the heart of the Highlands. In addition, approximately 80% of the landscape across Town (including 100% of the proposed project site) drains to the Hudson River, contributing to a habitat of national significance.

To maintain the integrity of our landscape and protect our home from the effects of "short sited" development, a careful eye is required to recognize the impacts to the entire community and beyond. Development should effectively strike a balance between a demand for housing and natural resource protection but ultimately be sustainable for the community.

We have reviewed the DEIS with this balance in mind and as proposed, the project falls short of maintaining the natural and cultural resources of Putnam Valley. The proposed development of 24 "contemporary style" houses is not an appropriate land development project for the site. The amount of disturbance related to the proposed project can potentially destroy on site resources, ecological transportation corridors and the scenic view enjoyed by more than 1000 residents in Putnam Valley and Cortlandt.

Our specific concerns and questions related to the Emerald Ridge Subdivision are outlined below. We look forward to having our comments addressed in the FEIS for the proposed project.

3.1-17

1.2.1 The total area of grading or site disturbance is estimated to be 26.6 acres.
Town Code specifies disturbance should be kept at a practical minimum. Over 1/3 of the parcel will be disturbed, including steeply sloped area, important transportation corridors and regulated wetland buffers. How is a "practical minimum" defined?

3.2-31

1-5 All four wetlands will be included within conservation easements, as will the 100 foot buffers and additional areas outside of the buffers.
Conservation Easements are an effective land preservation tool only if terms of the easement are enforced. Who is the Grantee of these conservation easements? How often will the conservation easements be monitored? Who will enforce the terms of the conservation easement if there is a violation? Who will pay the legal fees is a violation is found?

3.2-32

Figure 2.4 & Figure 3.2-3
The proposed conservation easement areas depicted on Figure 2.4 include Wetland B, C, and D, their associated 100 foot regulated buffer and a small area of steeply sloped forested area. The primary function of Wetland A, C and D "are stormwater storage and the potential as vernal pool habitat for amphibian species", (3.4-4). These areas are not fed by groundwater, rather precipitation and stormwater runoff supply these areas with water, making the integrity of the drainage basin a vital feature of these wetland systems. Significant development is proposed within these drainage basins, removing over 50% of the natural landscape and replacing naturally filtering vegetation with rooftops, roads, landscaped lawns, etc (note, the proposed conservation easement area for wetland A and basin area were not identified in the DEIS). Blasting is also proposed in these critical basin areas. How will the integrity of these wetland systems be protected from the adverse impact of the proposed development? The proposed conservation easement will inadequately protect the wetland systems from the impacts of development (increased impervious surface, road salt, etc). How do the proposed conservation easements further protect the natural resources on the site beyond what is currently protected under Town of Putnam Valley Code? What are the conservation values of the proposed easements?

3.1-18

3.1-8 As shown in the figure, potential blasting may occur for portion of the infrastructure such as roadway and utilities as well as for a few individual lots. These locations are near the center of the site and area located at a distance of approximately 1,000 feet from any nearby residences.
Blasting for an individual house site and infrastructure are within the drainage basin of Wetland C and D. Potential blasting site BZ5 appears to be less than 150 feet from wetland C. What are the potential short term and cumulative impacts to the existing wetlands related to the proposed blasting?

3.6-38

Table 3.6-6 Turf & Landscaped Areas – Existing Acreage 1.75, Post-Development Acreage 24.04
What are the short term and cumulative impacts of increased managed lawn and landscaped lawn areas within the drainage basin of each of the wetlands currently on the project site?

3.6-34

3.6-11 This area will be crossed with a road and is the future location of several house sites, so it is important to determine if there are any upland wildlife corridors/connections that might be disrupted by this proposal.
What are the cumulative impacts of eliminating the existing natural transportation corridors to the forest interior and Wetland B?

3.6-35

3.6-16 Recently listed as a State species of special concern, the box turtle may wander the woods of this site, although none were observed during numerous site visits.
During the DEIS public hearing, the Putnam Valley Wetlands Inspector confirmed the box turtle is present on the project site. Recognizing access to forested landscapes and ponds or wetland areas are necessary for its survival, how will the proposed project affect the box turtle's habitat and transportation corridors.

3.6-36

3.6-16 This clearing will result in the alteration of portions of this site from successional northern and hemlock northern hardwood forest to managed lawn and landscaped areas.
The increase in managed lawn and landscaped area will create edge habitat for species often associated with suburban development, i.e. Canada geese and white tailed deer. These species can replace development-sensitive species currently thriving on the project site, ultimately leading to an overall loss of biodiversity. What is the cumulative impact of the overall loss in biodiversity related to increased edge habitat not currently available on the project site?

3.8-4

3.8-9 With the extension of Marsh Hill Road to the beginning of a small proposed cul de sac, totaling 3,400 linear feet, the length of the dead end roadway would exceed the permitted maximum length of 1,200.
The proposed changes to Marsh Hill Road will result in a dead end road that is just over 1 mile long and will be 0.8 miles longer than what is permitted under current subdivision regulation. The proposed road improvements would also "require excessive cut and fill". If the proposed waiver is granted, what kind of precedent does this set for future development proposals?

3.[redacted]-2

3.10.3 No significant adverse visual impact area anticipated as a result of the proposed project.
Figure 3.11-1 identifies the potential viewshed within a 2-mile radius and reveals the proposed project is potentially visible from over 1000 homes in Putnam Valley and Cortlandt. The proposed 24 "contemporary style" houses visible from 4 towns will significantly impact the rural character enjoyed by residents and visitors throughout the Hudson Highlands. How will this significant adverse impact be mitigated?

3.12-1

3.12-4 ...the analysis of fiscal impact for the project indicates that once fully occupied the proposed project would generate a shortfall in municipal tax revenues of $30,591 and a shortfall in school tax revenues of $ 100,155.
How will the negative fiscal impact to the community be mitigated? With options that include impact fees, reducing the number of total units and total number of bedrooms per unit, is this truly an unavoidable impact?

3.7.25

An emergency access road was not included in the DEIS document, but briefly included in the public presentation. The road appeared to be in the regulated buffer of Peekskill Hollow Brook. What are the potential impacts of the emergency access road to the stream, its buffer and the 1000's of residents who rely on Peekskill Hollow Brook for drinking water?

As proposed, the Emerald Ridge Subdivision does not strike a balance between development and resource protection. The proposed project will have an overall net negative impact on community and natural resources and is not an appropriate use of the land. We hope to see the Planning Board and applicant compromise to ultimately achieve an outcome that benefits everyone.

Thank you,

Marlo Kovacs
Land Steward

August 26, 2006

To: Planning Board

From: Bruce Barber
Town Wetland Inspector

RE: **Emerald Ridge Subdivision**
Marsh Hill Road
Tax Map: Section 84 Block 1 Lots 5, 10.1, 10.2, 10.3 and 25

Dear Chairman Crowder and Members of the Planning Board:

Please be advised that I have reviewed the following documents submitted by the applicant:

- Draft Environmental Impact Statement, Volume I prepared by Tim Miller Associates dated June 5, 2006.

I offer the following comments:

Based upon my review however, the following items are not present, in the document, require additional information, or require clarification:

Summary of Substantial Items:

2-4 1. A significant amount of the DEIS and accompanying studies needs to be revisited to include impacts from the construction and use of the proposed emergency access road through the Brookfalls Cottage property.

3.2-5 2. The verification of the wetlands as mapped in the DEIS has not been completed as the above date. Although substantial areas of the wetlands have been field reviewed, the entire site has not been walked and adjacent areas have not been reviewed. Additionally wetlands that are located on the Brookfalls Cottage property which represent a substantial crossing of Peekskill Hollow Brook have

3.2-6

3.2-6 3.2-7 not been delineated by the applicant. Conclusions regarding pre and post construction hydrology are not substantiated in the DEIS.

3.6-6 3. The biodiversity study is not complete and updates have not been received. Conclusions drawn regarding impacts to biodiversity are not substantiated.

Executive Summary of 6/5/06 DEIS:

2-4 The DEIS does not consider any impacts to the Brookfalls Cottage property as a result of the construction of the emergency access road. The DEIS and associated studies must be modified and fully consider the impacts to this property including but not limited to:

3.2-8 3.2-9 Wetland and wetland buffers
Proposed crossing of Peekskill Hollow Brook
3.6-7 Biodiversity
3.4-2 Stormwater management
Soils, Erosion and sediment control/phasing
3.1-5 Topography and grading

2-14 1.2.1: Change word "till" to "rill"

3.1-7 1.2.1: Summary should provide information the potential effects of blasting (ie: groundwater, neighboring houses, biodiversity and habitat, etc.). Will the indicated 4,200 cubic yards of rock be removed from the site or crushed and used on site? What are the impacts of each action? Summary indicates that 4,200 cubic yards of rock will be removed. Text (page 3.1-8) indicates that 14,683 cubic yards of rock will be removed from the site by blasting.

3.6-8 1.2.2: Applicant should summarize what measures will be taken to protect vernal pool habitat as preservation of 100' buffer around vernal pools has found to be inadequate. Critical upland and vernal pool habitats should be identified and protective measures discussed. Will the proposed development of this site result in extirpation of species?

3.2-10 1.2.2: Applicant should propose mitigation measures for the wetland buffer area that is proposed to be lost as part of this action.

3.2-11 1.2.2: Applicant should indicate that wetland delineation is not complete.

3.3-1 1.2.3: Applicant should cite information source regarding septic system recharging approximately 85% of ground water. Applicant should indicate that testing of one of the test wells resulted in an arsenic level above acceptable standards and what measures will be taken to insure that on-site wells will have acceptable levels. Additionally, there

3.3-2 3.3-3 should be a summary of measures that will be taken to insure wells proximal to the site will not be affected by the proposed improvements.

3.4-6 3.4-7 1.2.4: Document should reflect changed design to B4 and that there will be no pre and post construction changes. In addition, pre and post construction water quality studies should be summarized here.

1.2.6: Study should indicate that upon completion of biodiversity study, habitat found on the subject site which is critical to these species shall be identified and what measures to preserve the critical will be undertaken.

3.6-10 1.2.6: Applicant indicates that 26.6 acres will be disturbed. This is determined by calculation of the area within the limits of disturbance. Upon completion of construction, many of these areas will be able to be improved by individual property owners either as of right or through permit. Several of the lots are so constrained that is almost certain that areas which are intended to not be disturbed during this review process, will be at a later date. As a result, the applicant should discuss the long-term preservation of the remaining 50.4 acres, either through conservation easement and/or reduction in density to less concentrated, constrained lots. Applicant should include details of how vegetative corridors connecting wetlands shall be preserved and how corridors and hydrology will not be fragmented as a result of the proposed action. Areas of wildlife road crossings should be identified and appropriate retrofits should be installed (ie: amphibian crossings). Draw supported conclusion of how loss of interior, upland areas may effect wildlife.

3.6-11

1.2.8: Second paragraph is no longer accurate.

3.9-2 1.2.9: Second sentence now incorrect. Last sentence is not supported.

3.12-2 1.2.12: Applicant indicates that there will a short-fall of future tax revenues when applied to cost of community services. This short fall must be subsidized by current residents of Putnam Valley. In addition, the applicant makes no mention of loss of tax revenues that

3.12-3 could take place as a result of tax certiorari proceedings if property values in the area fall from current levels.

3.4-8 1.3.1: Applicant should indicate that the SWPPP shall conform to NYSDEC Phase II Erosion and Sediment Control requirements. The applicant should also indicate whether

3.4-9 the site is located within a TMDL basin or will discharge to a listed impaired waterbody

3.4-10 or watercourse. Applicant should also indicate jurisdiction of the City of Peeskill.

3.3-4 1.3.2: Piezometer data should be summarized and hydrological connections and patterns identified. Box culverts and/or specialized wildlife crossings should be used under

3.6-12 roadways and not culverts. Wetlands and wetland buffers should not be used under any

3.2-12 circumstance for stormwater treatment.

3.4-11 1.3.4: Applicant shall provide information regarding pre and post construction base flow and bank full changes to Peekskill Hollow Brook. Applicant should indicate that pre construction baseline photographs and measurements shall be taken of all wetlands and watercourses and that a sediment monitor shall be installed in Peekskill Hollow Brook prior to the commencement of construction. Basin design should be modified to reduce

3.4-12 3.4-13 impacts from "deep holes" in the landscape and changed to biofilter and habitat creation areas. Cost and responsibility of maintaining stormwater infrastructure should be included.

3.2-13 3.6-13 1.3.6: Hydrological source of wetlands should be clearly identified and measures taken to ensure the water budget remains unchanged should be detailed. Claims that phasing will help wildlife is not shown due to long-term habitat alteration.

3.6-14 Page 2-7 Landscaping: Encourage use of native plants, landscaping for basins should be detailed wetland plantings.

3.1-8 Page 2-9: Phasing should allow only five total acres of undisturbed site at any time. Stabilized should be defined, how will site be stabilized in winter, what are soil types, will they remain in suspension in silt basins, how will vehicles be cleaned off, as-built maps of basins and house lot clearings shall be provided, stockpile areas, pump out areas, construction and sales trailers, port-o-sans, stabilization of all slopes greater than 2:1 and all exposed areas during 10/1-4/1 with erosion blankets.

3.1 Geology:

3.1-9 Page 3.1-2: Provide rationale for locations of 10 field soil borings.

3.1-10 Page 3.1-2: Provide soils info for basins and septic systems.

3.1-11 Page 3.1-7: Provide most recent Erosion and Sediment Control Manuals that will be used

3.3-5 How will prohibition of fertilizers, herbicides be enforced?

3.2 Surface Water Resources

3.2-14 Page 3.2-2: Wetland verification is incomplete and wetlands on the Brookfalls Cottage property have not been delineated or analyzed by the applicant. Upon completion of wetland verification and items below, map and text of this chapter will require updating. All Town of Putnam Valley jurisdictional wetlands that are adjacent to this site, such that buffers extend onto the subject property must be identified and mapped.

3.3-6 Table 3.2-7 Piezometer data is incomplete. Data must be used to complete analysis of pre and post construction water budget and hydrograph wetland analysis. Hydrological source of wetlands is unsupported. Conclusions regarding post construction hydrological modifications to the wetlands are not supported due to insufficient data and analysis.

3.2-15 Page 3.2-12: The sizes of watersheds are described on page 3.2-12 but what are post construction run-off (RCn) alterations in each watershed and how will that effect wetland hydrology.

3.2-16 Page 3.2-1: The subject property lies at the nexus of the Oscawana and Peekskill Hollow Brooks and immediately south of a large, NYSDEC regulated wetland. The importance of the location of the wetlands of the subject property to these wetlands and watercourses and how post construction conditions will alter these connections requires further

3.2-16 analysis. How will develop effect base flow and bank flow conditions in the brooks, and how will construction modify the water depth and the hydroperiod which is critical to maintain vernal pool habitat.

3.6-15 Page 3:2-3: Based on field inspection, the vegetative descriptions of the wetlands not accurate and therefore the habitat assessment is not accurate.

3.2-17 Page 3.2-10: Piezometer data is not supported by field inspections. Areas of the vernal pools had at least 12"-18" of water during the spring months.

3.2-18 Page 3.2-13 There is no explanation or detail of how the use of infiltration practices will recharge the wetlands or what these infiltration practices are.

3.3 Groundwater Resources

3.3-7 Page 3.3-2: Clarify if demand is 6,750 gallons per day or 11,325 gallons per day. Provide

3.3-8 source that septic effluent will return 85% or the groundwater specifically to the soil types and geological conditions on this site. Substantiate that the septic effluent will provide recharge to the wetlands and groundwater resources. DEIS must consider

3.3-9 groundwater resource impacts on Brookfalls Cottage property.

3.3-10 Page 3.3-4: TW-4 measured yield is 5.8 GPM. Upon initial water testing elevated arsenic levels were found. The DEIS reports that the water was tested a second time at a pump rate of 10 GPM and arsenic levels were acceptable. The DEIS concludes that the elevated arsenic levels were a false positive readings. There is no documentation of this conclusion and the greater pumping level during the second water test is not explained.

3.4 Stormwater

3.4-14 Page 3.4-1: DEIS must include stormwater impacts on Brookfalls Cottage property.

3.4-15 Page 3.4-2: Will NYSDEC permits be required?

3.4-16 Table 3.4.3- Requires updating to include all basins and to reflect modifications to post construction peak rates.

3.4-17 Page 3.4.6: Provide summary of all pre and post construction water quality calculations in tabular form. The "expectations" that there will be no adverse impacts to on-site or downstream waters is not substantiated,

3.3-5 Page 3.4-7: How will prohibition of fertilizers and pesticides be implemented and enforced?

3.4-18 Page 3.4-7: Conclusion that basins will operate under cold weather conditions is not supported by data.

3.5-1 **3.5: Wastewater: Chapter was not included in the document that was submitted to me.** Applicant is requested to submit this chapter for review and comment.

3.6 Vegetation and Wildlife

3.6-16 Page 3.6-1: Biodiversity study is incomplete and updates have not been received. FEIS should contain completed studies, analysis and mitigation measures. Additionally, a

3.6-17 biodiversity study of the Brookfalls Cottage property should be completed in accordance with Putnam Valley's "Wildlife Habitat and Biodiversity Assessment Guidelines" with appropriate analysis and mitigation measures included in the FEIS.

3.6-18 Page 3.6-5: Conclusions regarding regional landscape and ecological considerations wildlife are unsupported. Many of the vernal pool species use adjoining upland, open water and shrub/scrub NYSDEC wetland and adjoining watercourses habitat for their life cycle requirements. The property is located between Peekskill Hollow Brook, Oscawana Brook and NYSDEC wetlands and serves as an important vernal pool and upland habitat for these resources.

3.6-19 Page 3:6-7: The biodiversity study focuses on threatened and endangered species. What development sensitive focal species were found and what is the range area/habitat of species indicators as found on page 32 -33 'Focal Species" in Croton to Highlands Plan . Will this habitat be effected from the proposed development. Have wildlife corridors

3.6-20 been identified? What mechanisms are used to reduce fragmentation and preserve corridors? Conservation easements should be placed on all wetland, wetland buffer and

3.6-21 habitat connections and corridors. What measures will be used that will insure adequate wildlife road crossings. When limits of disturbances are considered, several of the sites

3.6-22 are extremely constrained and have very limited yard potential. What measures will be taken so that approved limits of disturbance will not be disturbed over the long term?

3.6-23 Stormwater basins should be redesigned for aesthetic purposes and to encourage use by wildlife.

3.6-24 Page 3.6-13: Applicant indicates random transect routes generally followed the existing trail network on the site. The trail network is a man-made feature resulting in compacted soils and ecological edge conditions. The applicant should provide further information the ecological investigative and sampling study techniques that were used on this site to determine biodiversity.

3.6-25 Page 3.6-21: Mole salamanders and other amphibians are known to require upwards of 1000' of upland buffer around vernal pools. Applicant is to demonstrate how preservation of 100' buffer around these highly functional vernal pools will adequately protect these species and prevent loss of biodiversity. Additionally, hydrological analysis remains

3.6-26 incomplete and the water budget/hydroperiod not completely analyzed to insure long-term viability of wetland habitat.

3.8 Land Use and Zoning:

3.8-2 Page 3.8-5: The applicant has not included how the intent of the applicable Town of Putnam Valley Environmental Management Districts has been fully considered in this project. Compliance to the "maximum extent possible" requires substantiation.

3.6-27 Page 3.8-8 Tree preservation and replanting plan should be included in the FEIS.

3.13 Cumulative Impacts:

3.13-2 Page 3.13.2: Potential impacts section is very general, lacks data and analysis of projects listed in Table 3.13-1. Analysis should be undertaken to determine how much habitat will be altered, how much potential impervious surface created, etc, and the cumulative impacts of these actions should be quantified.

4.0 Alternatives:

4-2 Applicant should submit a cluster alternative which incorporates design principles of Conservation Subdivision Design including the preservation of additional open space and small lot sizes without comprpmising wetlands, wetland buffers and critical environmental areas. Habitat corridors and passive recreational routes should be designed to connect to existing corridors and routes on adjoining properties or reasonably planned areas in a meaningful way such parcels are linked together by [preserved greenbelts and habitats.

Chapter 8.0 Effects on the Use and Conservation of Energy Resources:

5-1 Applicant should provide additional information including proposed house orientation regarding solar exposure. What alternative energy systems can be employed to reduce energy usage as part of this subdivision?

6-1 **Volume II and Plans: Were not submitted.** Applicant is requested to submit these materials to allow for adequate review.

This completes my comments to date based on the materials that have been submitted to me. Please do not hesitate to contact me should you have any questions.

Sincerely,

Bruce Barber, PWS
Town of Putnam Valley Wetland Inspector

0410
SM

CITY OF PEEKSKILL
CITY HALL

840 MAIN STREET
PEEKSKILL, NEW YORK 10566

(914) 737-3400
FAX NO. 914-737-2688

July 24, 2006

Mr. Billy Lee Crowder, Jr., Chairman
Town of Putnam Valley Planning Board
Putnam Valley Town Hall
265 Oscawana Lake Road
Putnam Valley, New York 10579-2004

Re: **Emerald Ridge Subdivision**
Draft Environmental Impact Statement Public Hearing
Proposed 25 single-family detached residential subdivision

Dear Mr. Crowder:

The City of Peekskill is in receipt of the Public Hearing Notice to consider a Draft Environmental Impact Statement (DEIS) dated June 5, 2006 for the Emerald Ridge Subdivision. In November 2004, the City submitted written comments to the Planning Board regarding the Draft Scoping Document for the proposed project. The City appreciates the continued opportunity to voice its comments and concerns regarding the proposed development of the Emerald Ridge Subdivision.

3.2-23

The City is most concerned about any potential impacts to the Peekskill Hollow Brook, the water source for the City of Peekskill's Water Supply. The City of Peekskill Watershed, of which the Oscawana and the Peekskill Hollow Brook are a significant part, encompasses approximately 48 square miles. The City desires to mitigate any potential impacts of the proposed action upon the Peekskill Hollow Brook, which has been designated as a Critical Environmental Area (CEA) by the County of Westchester.

Staff from the Department of Planning, Development and Code Assistance has reviewed the Draft Environmental Impact Statement dated June 5, 2006 and offer the following initial comments to be read into the Public Hearing Record. The City would like to reserve the right to submit additional written comments on the DEIS for the Emerald Ridge Subdivision within the authorized comment period. Please note that the City's comments are specific to its Watershed.

1.0 Executive Summary:

1. *Page 1-10, 1st full paragraph* – this paragraph discusses the proposed mitigation measures to impacts to the Peekskill Hollow Brook Watershed (City of Peekskill Watershed). In reviewing the DEIS there does not appear to be a corresponding section regarding any impacts to the City's Watershed in Section 1.2, Potential Significant Impacts.

3.2-24

2. *Page 1-7, 1st paragraph* – Section 1.2.9 Police, Fire and Emergency Medical Services, should also include a brief discussion any potential impacts to the City of Peekskill Watershed Protection and Enforcement Officers.

In 2004 the City of Peekskill was authorized by New York State to appoint Watershed Protection and Enforcement Officers, which have most of the powers and authorities provided to "Peace Officers." The City's Watershed Protection and Enforcement Officers are authorized to enforce to provisions of the Environmental Conservation Law and Penal Law which relate to the contamination of water in those areas of the Peekskill Hollow Brook Watershed and the Wiccopee Reservoir located outside the City of Peekskill in the both Putnam and Westchester County, including its reservoirs, shoreline and tributaries.

3.2-25

2.0 Project Description:

1. *Page 2-4, 1st Full Paragraph* – does the Groundwater Protection Overlay District prohibit the use of all fertilizers and pesticides or only specific fertilizers and pesticides? If there are specific fertilizers and pesticides that are prohibited, the City requests that they are incorporated into the FEIS. The City's Water Department would like to receive a copy of the information regarding the prohibition on the use of fertilizers and pesticides.

An additional concern by the City is ensuring that all of the potential new homeowners receive notification of the prohibition on the use of fertilizers. A copy of the method of dissemination is also requested to be sent to the City's Water Superintendent.

A discussion should be placed in this section regarding which municipal agency, if any, is responsible for enforcing the prohibition against the use of fertilizers and pesticides. The FEIS should include a resolution of this enforcement issue.

3.3-11

2. *Page 2-14, 3rd Bullet, List of Interested Parties* – the Department of Planning and Development should be revised to the Department of Planning, Development and Code Assistance.

3. *Page 2-14, 4th Bullet, List of Interested Parties* – the Department of Public Works should be revised to the Water Department.

2-28

3.2 Surface Water Resources:

3.2-26 1. *Figure 3.2-4, Watershed* – the Oscawana Brook Watershed and the Peekskill Hollow Brook Watershed should both be identified as the City of Peekskill Watershed.

3.2-27 2. *Page 3.2-11, Peekskill Hollow Brook Watershed* – this title should be changed to the City of Peekskill Watershed. The project needs to be identified in this section as being located within the City of Peekskill Watershed.

3.2-28 3. *Page 3.2-11, 3rd full paragraph* – the population served by the City of Peekskill water system is 22,441 according the 2000 Census. This population number does not include the additional population served in the Town of Corltandt and the Village of Buchanan.

3.4 Stormwater:

3.4-28 1. *Page 3.4-1 Peekskill Hollow Brook Watershed* – this title should be changed to the City of Peekskill Watershed.

3.4-29 2. *Page 3.4-1, 3rd full paragraph* - the population served by the City of Peekskill water system is 22,441 according the 2000 Census. Again, this population number does not include the additional population served in the Town of Corltandt and the Village of Buchanan.

3.4-30 3. *Page 3.4-8, 4th full paragraph* – The City of Peekskill Water Department would like to receive copies (if possible in digital format) of any pictures of any physical/chemical data related to the Peekskill Hollow Brook at the proposed stormwater outfall locations prior to construction.

General Comments:

2.29 1. The City of Peekskill requests the following note be added to any approved site plans: "the project is located within the City of Peekskill Watershed."

2. The City requests that the following note be added to any approved site plan: "The contractor is responsible to notify The City of Peekskill Water Department at (914) 734-4152 prior to the commencement of work in order to permit an inspection by the City of Peekskill Watershed Protection and Enforcement Officers to ensure that all erosion control measures are in place."

2.30 This will help the City monitor for any downstream turbidity and assist in preventing the City from shutting down its Raw Water Pumps.

2.31 3. The City requests that the following note be added to any approved site plan: "The contractor is responsible to contact and notify the City of Peekskill Water Department at (914) 734- 4152 prior to construction."

Thank you in advance for the opportunity to participate in the review of the Draft Environmental Impact Statement for the proposed Emerald Ridge Subdivision. Please feel free to contact me at 914-734-4212 should you wish to discuss the concerns of the City of Peekskill.

Sincerely,

Anthony J. Ruggiero
Assistant City Planner

cc: Daniel W. Fitzpatrick, ICMA-CM, AICP, City Manager
Brian Havranek, Director of Planning, Development and Code Assistance
Edward Khuns, Water Superintendent
Vince Powell, Assistant Water Superintendent

SHERLITA AMLER, MD, MS, FAAP
Commissioner of Health

LORETTA MOLINARI, RN, MSN
Associate Commissioner of Health

ROBERT J. BONDI
County Executive

ROBERT MORRIS, PE
Director of Environmental Health

DEPARTMENT OF HEALTH
1 Geneva Road, Brewster, New York 10509

AUG 14 2006
PLANNING BOARD

August 14, 2006

Mr. Billy Crowder
Chairmen, Putnam Valley Planning Board
Town Hall
265 Oscawana Lake Rd.
Putnam Valley, NY 10579

10424.05

Re: DEIS for Emerald Ridge Subdivision
Marsh Hill Road

Dear Mr. Crowder:

This Department has received and reviewed the Draft Environmental Impact Statement for the above referenced project and would like to offer the following comments:

3.1-15 1. Section 3.1.2 Potential Impacts, Page 3.1-8:
It should be noted that the proposed SSTS areas are to be cordoned off to avoid having the trucks for rock removal driving over any proposed SSTS area.

3.5-5 2. Section 3.5.2 Potential Wastewater Impacts, Page 3.5-1:
How was the projected wastewater generation of 15% less than the water demand (9,350 gpd, 374 gpd per house) arrived at?

3.3-18 3. Based on Appendix II-B, it appears that the test wells were not analyzed using the full Part 5, but the monitoring wells which are not required to be tested, were. Please Clarify.

3.3.19 4. If MW2 and MW3 are really TW2 and TW4, the iron, color, turbidly and iron plus manganese are over the maximum containment level.

3.3.20 5. If MW3 is really TW3, the iron is over the maximum containment level.

3.3-21 6. If MW1 is really TW1, the sodium level ~~is greater than 20 mg/l and~~ it should not be used for drinking by people on severely restricted sodium diets.

If you have any questions, please contact me at your convenience.

Sincerely,

Joseph S. Paravati, Jr.
Assistant Public Health Engineer

JSP:kly

New York State Department of Environmental Conservation
Region 3, Division of Environmental Permits
21 South Putt Corners Road, New Paltz, NY 12561-1696
(845) 256-3000 FAX (845) 255-3042
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

July 31, 2006

Via Facsimile (845-526-3307) and U.S. Mail

Billy Lee Crowder, Chairman
Town of Putnam Valley Planning Board
265 Oscawana Lake Road
Putnam Valley, New York 10579

Re: Emerald Ridge Subdivision - Draft Environmental Impact Statement
Town of Putnam Valley, Dutchess County
DEC Pre-Application No. 3-3728-00171/00001

Dear Mr. Crowder:

The NYS Department of Environmental Conservation (DEC) has reviewed the Draft Environmental Impact Statement (DEIS) that was submitted regarding the above-referenced project. The project involves the construction of a 25-lot single family residential subdivision on a 87± acre parcel of land. The project is proposed to be served by individual wells and septic systems. The project is located at the end of Marsh Hill Road near Peekskill Hollow Road in the Town of Putnam Valley.

In general, the DEIS was well-prepared, containing informative and detailed analyses, tables and exhibits. The Department's review of the DEIS focused primarily on issues of relevance to our regulatory jurisdiction, namely, freshwater wetlands. Accordingly, we offer the following comments:

DEC Approvals Required
No applications for DEC permits have been submitted by the project sponsors to date. However, based on the project information you have submitted, it appears that the project will require the following permits/approvals:

3.2.29

1. **Article 24, Freshwater Wetlands** - A Freshwater Wetlands permit will be required for proposed construction within the 100-foot adjacent area of State-designated Freshwater Wetland ML-3 (Class II)

3.4.31

2. **Compliance with the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (GP-02-01)** - Compliance with this SPDES General Permit is required for any project that disturbs greater than one acre of land area. When other DEC permits are necessary, the Stormwater Pollution Prevention Plan (SPPP) required by the SPDES General

Permit must be prepared and submitted for concurrent review with applications for the other DEC permits.

It is possible that the DEC permit requirements noted above may change based upon additional information received or as project modifications occur.

3.2.30

Freshwater Wetlands

The site contains a portion of State-designated Freshwater Wetlands ML-3 (Class II). Based on the proposed site development plan, it appears that most impacts to these wetlands, and their 100-foot adjacent areas have either been avoided and minimized. However, proposed Lot No. 9 is significantly constrained by the presence of the wetland and its 100-foot adjacent area. We recommend that this lot be eliminated or reconfigured to provide a reasonable envelope around the proposed residence to allow for establishment of lawn and construction of accessory structures (e.g., pool, shed, deck etc.) without encroachment into the regulated area.

In addition, please note our recommendations for plan notes and requirements for deed notices as described in the enclosed "Notice to Local Governments, Project Sponsors, and Applicants". Further and more detailed evaluation of wetland impacts and potential mitigation will be conducted by DEC during the review of the permit application and full development plans.

Thank you for the opportunity to comment on the DEIS for this project. If you have any questions about this information, please call me at (845) 256-3050.

Sincerely,

Scott E. Sheeley

Scott E. Sheeley
Deputy Regional Permit Adminstrator

Enclosure

cc: J. Moreinis, Tim Miller Associates, Inc. (Via Facsimile 845-265-4418) (w/encl.)
V. Santucci, VS Construction Corp (w/encl.)

August 31, 2006

Town of Putnam Valley Planning Board
Mr. Billy L. Crowder, Chairman
265 Oscawana Lake Road
Putnam Valley, New York 10579

Re: VS Construction, Emerald Ridge, 3rd Review
Tax ID#: 84.-1-5 and PO 84.-1-10.1, 10.2 and 10.3
JRFA Job #03500408-1

Dear Chairman Crowder and Members of the Board:

Our office has received and reviewed the following documents submitted for the above referenced project as prepared by Tim Miller Associates, Inc. and Cronin Engineering P.E., P.C.:

- Emerald Ridge Subdivision Draft Environmental Impact Statement (Vol. 1 & 2), prepared by Tim Miller Associates, Inc., last revised June 5, 2006.
- Subdivision and Development Approval Plan for Emerald Ridge, prepared by Cronin Engineering P.E. P.C., last revised June 5, 2006.

Our office has reviewed the following sections of the Draft Environmental Impact Statement:

- 1.0 Executive Summary
- 1.1 Description of Proposed Action
- 1.2 Potential Significant Impacts
- 1.3 Proposed Mitigation Measures
- 1.4 Project Alternatives Considered
- 2.0 Project Description
- 2.1 Introduction
- 2.3 Site History
- 2.4 Description of Action
- 2.5 Phasing and Construction Schedule
- 3.0 Existing Environmental Conditions, Anticipated Impacts, and Mitigation
- 3.1 Geology and Soils
- 3.2 Surface Water Resources
- 3.3 Groundwater Resources
- 3.4 Stormwater
- 3.5 Wastewater
- 3.7 Traffic and Transportation
- 3.9 Police, Fire and Emergency Medical Services

- 3.10 Historic and Archeological Resourses
- 4.0 Alternatives
- 4.2 Cluster Subdivision Alternative
- 4.3 Code Compliant Marsh Hill Road Alternative
- Appendices: B, C, I, J, K, N, and O

Based on our review of the submitted documents, we offer the following comments, which may warrant discussion with the applicant and/or action by the Board:

Chapter 1.0: Executive Summary

Section 1.1: Description of Proposed Action

2-2 - The description of the proposed action should incorporate the addition of the emergency access road along with details of easements needed. Development Approval Plans for the Brookfalls Subdivision should be submitted along with the agreement for easement from William Venezia.

3.2-3 - Discussion of the potential wetland delineation changes should also be discussed.

Section 1.2: Potential Significant Impacts

3.4-2 - The potential significant impacts should incorporate the addition of the emergency access road to include the significant changes in total lot disturbance and significant changes to the SWPPP.

3.1-2 - Total site disturbance numbers should be revised to reflect the emergency access roadway. If there is a requirement for additional blasting due to the addition of the

3.1-3 emergency access road it should be stated.

3.2-14 - Discuss whether or not any disturbance of wetland or wetland buffers will take place with the addition of the emergency access road.

3.6-4 - A habitat assessment of the area of the additional emergency access road was not performed and should be in order to determine the extent of impacts to wildlife on that parcel.

3.6-5 - A tree survey should be prepared for the area where the emergency access roadway is proposed.

3.4-26 - Subsurface stormwater storage should be evaluated to eliminate unsitely surface basins and provide for quality treatment of stormwater runoff.

Section 1.3: Proposed Mitigation Measures

3.1-5 - Erosion and sediment control plans should include the addition of the emergency access roadway.

3.4-26 - The SWPPP should evaluate the use of subsurface storage systems in lieu of unsitely surface basins.

Section 1.4: Project Alternatives Considered

4-5 - An additional alternative that should be discussed is to build slightly higher valued houses with less lots in total. This will lessen the environmental impacts.
4-6 - An additional alternative that should be discussed is to eliminate the cul de sac to lessen the environmental impacts.
4-7 - An additional alternative that should be discussed is to cluster with slightly less lots. The cluster eliminates a lot of disturbance and lessens the infrastructure costs.

Chapter 2: Project Description

Section 2.1: Introduction

2-2 - The addition of the emergency access roadway should be discussed.
2-3 - The bridge and its design details on the proposed emergency access roadway should be discussed.

Section 2.3: Site History

2-2 - Site history should be updated to include the addition of the emergency access parcel.
- Discussion of the history of the bridge and its design details on the proposed emergency access parcel should also be discussed.

Section 2.4: Description of Proposed Action:

3.1-2 - Description should include the addition of the emergency access roadway along with revised calculations for impervious surface and limits of disturbance.

Section 2.5: Phasing and Construction Schedule

2-15 - The phasing portion should be more detailed and actually broken out into phases with milestones. These phases should also include what lots are going to be worked on first, estimated time to complete the lots and overall project length for each phase to be completed. This will illustrate better what construction easements and grading easements would be required. It will also give the neighboring parcels the ability to see the entire project from a scheduling point of view.

Chapter 3.0: Existing Environmental Conditions, Potential Impacts, and Mitigation

Section 3.1 Geology and Soils

3.1-12 - Blasting Mitigation Plan - The hours of blasting operation identified in this section should correspond to those identified in Appendix 0.

3.1-13 - Additional soils research is needed along the proposed emergency access roadway to determine that adequate soils are present for construction of a roadway and how much additional blasting is required to construct the roadway.

3.1-5 - Erosion and sediment control plans should include the addition of the emergency access roadway.

Section 3.2: Surface Water Resources

3.2-19 - A very small portion of a very large NYSDEC wetland to the north of the site is shown on the plans. The project overview plan should be updated showing just how large that wetland is.

3.2-3 - Any changes incurred during the finalization of the wetland delineation will require this section be updated with the new information.

Section 3.3: Groundwater Resources

3.3-11 - There appears to be a labeling issue with what wells are test wells and which are monitoring wells. Please verify that test well (TW) and monitoring well (MW) are utilized as appropriate throughout the section.

3.3-12 - It appears that test wells were not analyzed using the full Part 5 test but the monitor wells were. Please clarify.

3.3-13 - Some test samples on the test wells were over the maximum containment level for iron, color, turbidity and iron plus manganese. Please elaborate on these findings.

Section 3.4: Stormwater

3.4-19 - Appendix J " Stormwater Pollution Prevention Plan" - Hydraulic calculations for the proposed stormwater pipes should be provided. Very high slopes that will produce very high velocities are proposed for the stormwater pipes shown on the drawing PR-4.5. Proposed design for these pipes should be revised. For the stormwater pipes that will have velocities greater than 15 ft/sec special provisions shall be made to protect against displacement by erosion and impact.

3.4-20 - As it is proposed, as the part of the mitigation package, two existing culverts will be abandoned and the stormwater will be rerouted along the north side of Peekskill Hollow Road to Peekskill Hollow Brook. Hydraulic calculations should be provided and is

3.4-20 requested by the Department of Highways and Facilities, in the letter dated December 19, 2005. A 50 feet buffer line for Peekskill Hollow Brook should be delineated on the submitted drawings.

3.4-21 - Hydraulic calculations for the proposed 12" HDPE and 15" HDPE culverts, located on Marsh Hill Road should be provided.

3.4-22 - Stationing and rim elevation information for proposed CB #5, illustrated on drawing PR-4.5, should match the information presented on drawing PR 4-7.

3.4-23 According to the Town Code of the Town of Putnam Valley, section § 155 –10, it is requested by the Planning Board, the applicant shall agree to the granting and recording of easements for drainage facilities, for the maintenance of swales and for access to provide for the maintenance of stormwater management facilities. These proposed easements should be illustrated on the Plans.

3.4-24 - A copy of performed field test results for the proposed permanent stormwater management facilities should be provided.

3.4-25 - HydroCAD calculations presented in the submitted SWPPP should match the information illustrated in the submitted Subdivision and Development Approval Plan. Presented information for the pipe material, length, and slope for primary and secondary outlet devices for splitter catch basins No. 12, 20, 29; deep parabolic channel information for wetland reaches reach r1: 30" pipe, as well as reach r2 and r3 for 18" pipes, do not correspond to the information illustrated on the submitted set of drawings.

Section 3.5: Wastewater

3.5-2 - A copy of performed field test results should be provided.

3.5-3 Projected wastewater generation was 15% less than water demand. Please discuss this methodology.

3.5-4 - Subsurface disposal systems on some lots run right up to the edge of the wetland buffer, with a new wetland delineation the systems may fall into the buffer. Redesign maybe necessary in order to keep all of the SSDS out of the wetland buffer.

Section 3.7: Traffic and Transportation

3.7-3 - The entrance to the site from Peekskill Hollow Road should be designed to maximize the ability of a truck traveling southwest on the roadway to turn up Marsh Hill Road with minimal encroachment into the northeasterly traveled lane of traffic.

3.7-4 - If at all possible, the intersection of Marsh Hill Road and Peekskill Hollow Road should be analyzed to determine if a left turn lane could be established for the northeasterly traveling lane and a right turn lane established for southwestern traveled lane to ease the turn into the site from either direction.

3.7-5 - The bridge on the emergency access roadway should be widened to the width of the proposed emergency access road.

3.7-6 - A structural review and NYS PE signed and sealed structural plans should be provided for the bridge along with all necessary signs needed to post the bridges maximum weight capacity.

3.7-7 - A maintenance plan should be established for the proper structural review of the bridge at no more then a two year interval unless otherwise directed by the Town Building Inspector or Town Engineer when situations of structural integrity arise.

3.7-8 - Minimum sight distance at the intersection of Marsh Hill Road and Peekskill Hollow Road is insufficient to the east for speeds up to 40 mph. This situation should be analyzed and an appropriate solution found whether it be reducing the posted speed limit or some other method.

3.7-9 - Sight distance and vertical curve evaluation of the Brook Falls entrance should be discussed for emergency response.

Section 3.9: Police, Fire and Emergency Medical Services

3.9-3 - This section should incorporate the addition of the emergency access road and its impacts should be discussed with each service so that the roadway is laid out to meet their requirements.

3.9-4 - Verification that a fire truck can make the turn and head up Marsh Hill Road when traveling southwest on Peekskill Hollow Road should be discussed.

Section 3.10: Historic and Archeological Resources

3.10-1 - Documentation from the Office of Parks, Recreation and Historic Preservation should be submitted for the Brook Falls parcel because of the addition of the emergency access roadway.

Chapter 4.0: Alternatives

Section 4.2: Cluster Subdivision

4-3 - A cluster subdivision with no wetland impacts and with less lots should be discussed, if infrastructure costs can be cut through a cluster subdivision, the same profit margin should be obtainable with less lots. Also, economic impacts are reduced along with environmental.

Section 4.3: Cod Compliant Marsh Hill Road Alternative

4-4 - This alternative requires too much environmental impact with the removal of over 600,000 cy of material.

Appendix B: Wetland Delineation Report and Functional Analysis Data Sheets

6-2

- The wetlands delineation is not finalized as of this date. Once finalized, all data in this appendix should be updated. The emergency access roadway should be evaluated to determine if any portion of it affects wetlands or wetland buffers.

Appendix C: Ecological Assessment Report

6-3

- The addition of the emergency access roadway should be incorporated into this appendix and evaluated for its impact on the ecology.

Appendix I: Well Test Report

6-4

- Some of the data as discussed in section 3.3 should be elaborated on based on the containment levels of the sampled test wells. A comparison chart should be established between actual and acceptable levels or containment.

Appendix J: Stormwater Pollution Prevention Plan

6-5

- See section 3.4 above. Incorporate the emergency access roadway into the SWPPP and provide any additional soils testing as required.

Appendix K: Tree Survey Data Sheets

6-6

- Provide a tree survey for the parcel containing the proposed emergency access roadway.

Appendix N: Emerald Ridge Drainage Districts Engineer's Report

6-7

- With the addition of the emergency access roadway, additional easements maybe required for stormwater structures along the new roadway. This new roadway is not going to be dedicated to the town at this time, coordination for parties responsible and a maintenance plan is to be provided.
- Subsurface storage should be evaluated in lieu of surface basins.

6-8

Appendix O: Rock Removal and Blasting Program

6-9

- Any additional blasting requirements due to the addition of the emergency access roadway should be discussed in this section and recalculated.

This information is based on my review of the documents submitted. Additional review comments may be provided throughout the process as the FEIS is evaluated. These comments should be addressed in the FEIS.

Should you have any questions or comments, please feel free to contact our office.

Sincerely,

Todd W. Atkinson, P.E.
Town Planning Board Engineer

TWA/jac

cc: William A. Zutt, Esq. (via fax 845-528-2566)
Jan K. Johannessen (via fax 845-454-4026
Bruce Barber (via fax 914-962-0330)
Irv Sevelowitz (via fax 845-526-8806)
Earl Smith (via fax 845-526-4729)
Applicant

for 24-05

Joel Mandelbaum
P.O.Box 54
Putnam Valley, NY 10579

RECEIVED
AUG 14 2006
PLANNING BOARD

To the Planning Board
Putnam Valley, N.Y.

August 8, 2006

Subject: Approval of Emerald Ridge Development Proposal.

As an owner of property and a home immediately adjoining the proposed Emerald Ridge development, I wish to underline several issues of great concern to me. All of them were mentioned either in the hearing on July 31, in the DEIS submitted by the Developer or in both.

9.3-22 1. As proposed by the Town Water Commissioner, it is imperative that the wells on adjoining off-site properties, including mine, be continuously monitored from the start of construction until two years after the granting of the certificate of occupancy. Further, the Developer should be required to commit in writing to punctually making good any failure of any of these wells to maintain their levels of volume and purity should that happen during that time. I would hope that this would be a precondition to approval of the project.

9.6-32 2. I also hope that it will be required that the buyers of the individual houses agree in writing that the portions of the map designated "undisturbed woodlands" remain so in perpetuity. The town should find a way to use its muscle as adjudicator and as assessor, to see that any violations of the conservation easements regarding "undisturbed woodlands" be rectified and punished.

9.3-23 3. I would hope that town inspectors would be on top of any problems regarding the individual septic systems both at the time of building and later, should any of them become degraded while in use.

9.7-23 4. A friendly word of advice that the Town Highway Commissioner familiarize himself with the terrain of Marsh Hill Road if he has not already done so. My own private road climbs the same hill, parallel to Marsh Hill Road a short distance away. I have learned from bitter experience not to try to navigate my road between the first snowfall of December and the last snowmelt of March. Should the town not be concerned that it may be getting a "Trojan horse" when the road is bequeathed to it upon completion?

7.32 5. If there is any amicable way to persuade the developer to reduce the number and/or size of the new homes, I would urge the Board to try to do so. A smaller development might still be profitable, if somewhat less so, while the lesser impact, both environmental and economic, would be highly helpful to the town.

3.1.16 6. Any measures the Board can think of to mitigate the noise, dust, pollution and general dislocation during the construction process, especially during the months of June, July and August would be greatly appreciated.

4.10 7. I have examined the two "cluster" alternatives shown in the DEIS. From my standpoint as well as that of the neighbors currently residing on Marsh Hill Road, they would be a disaster, placing all the wells and septic systems of the entire development in close proximity to our properties instead of spreading them out over the full 87 acres. The chance of the wells causing depletion of my and other neighbors' wells would be greatly increased, and the problem of natural replenishment, especially during droughts, disastrously increased. The developers' original plan is better and safer, And, if the mapped "undisturbed woodlands" are rigorously maintained, almost as friendly to wildlife as the cluster would be.

11 3.12.1 8. Through attending hearings and reading the DEIS of Emerald Ridge, I have become newly cognizant of the economics of the Town of Putnam Valley. Occupied land costs the town more than it produces in revenue. Privately owned vacant land is the cash cow that keeps Putnam Valley solvent. In turning 87 acres of vacant land into occupied land, you are taking a major step (along with other similar steps in other parts of the town) toward the killing of that cash cow. How much more development of vacant land can the economy of the town sustain? As the owner of 18 acres of highly taxed vacant land, I have to ask the town in all seriousness: when will the town align its assessment policies with its own longterm economic interests and needs? After all the many years during which the owners of the land now being turned into Emerald Ridge helped subsidize the schools and services of the community they are now cashing in their equity and letting the town subsidize them. Perhaps, had the town offered tax abatement in return for conservation easements years ago, their land would still be vacant for the foreseeable future. Isn't that a route the town should explore and possibly vigorously promote now? I, as an owner of land likely to be sold for development within the next decade otherwise, might find such an invitation tempting.

Joel Mandelbaum

MEMORANDUM

To: John Moreinis - Tim Miller Associates
From: William A. Zutt, Esq.
Re: Emerald Ridge DEIS
Date: August 1, 2006

The introduction of an alternate Site layout at the last night's Planning Board Public Hearing, containing an emergency access road ("EAR" hereafter) through a portion of the adjacent Venezia property, raises a number of issues which should be addressed in the FEIS. I assume the Town's engineering, planning, and environmental consultants will provide you with their own comments (now to be addressed in the FEIS).

From my own perspective, I believe the following should be addressed:

3.7-15 1. What legal/contractual arrangements exist with the underlying fee owner to acquire title to or an easement across so much of the adjacent property as is necessary to support the EAR? Please provide copie(s) of all relevant documents.

3.7-16 2. What dimensional and improvement standards will be applied to the EAR?

3.7-17 3. What permanent ownership/maintenance arrangements (including snow and obstruction removal) does the applicant propose with respect to the EAR?

3.7-18 4. If the applicant proposes public dedication of the EAR, may the Town accept public dedication of anything less than a fee interest? May the Town accept public dedication of a roadway that does not meet Town Highway specifications?

3.7-19 5. If the EAR is accepted for dedication, must it qualify as a "Town Highway" and, if so, may its use legally be limited to emergency vehicles?

3.7-20 6. If public dedication is not proposed, who will monitor the roadway and how will long term maintenance be secured?

3.7-21 7. How will physical access to the EAR be controlled, and how will emergency service providers gain access?

cc: Planning Bd.
Tom Shannersen

AUG 3 2006
PLANNING BOARD

To: Billy Crowder & the Planning Board
From : John Cohen
Date: Aug 1 2006
Re: additional questions.

Hi Billy,
Last night's meeting was well structured, but I resent the fact that there was no time for additional questions...in view of the fact that additional information was revealed after you closed the initial question period. You allowed the meeting to get into your own procedural issues, and thereby excluded us the public from responding to the new information. Remember, we were invited for our input.

So here's my questions.

Will the recently added "appendage" emergency road really serve it's purpose? I foresee a situation whereby a bus or truck gets damaged or incapacitated on Marsh Hill road., and therefore, blocks that road. Especially in an ice storm, there would be no way for any of the 23 families to exit, and no way for emergency vehicles or tow trucks to get up the icy emergency road with its 15% grade. This is the recipe for a disaster.

HAVE YOU (THE PLANNING BOARD) the Developers notified the County Highway Dept, about this proposed change?...Is there a driveway permit for the emergency road?

Have you notified the DOT from NY State, which is the lead agency for the proposed widening of Peekskill Hollow road project?. As of their last public meeting, the plans were very unclear about the Marsh Hill road entrance to PHR. The new road wan't even considered on their map.

Sincerely

John Cohen

LAW OFFICES
BOLGER, HINZ & ZUTT, P.C.
P. O. BOX 8
11 OSCAWANA LAKE ROAD
PUTNAM VALLEY, N. Y. 10579
(845) 528-4410
FAX NO. (845) 528-2566

HAROLD W. HINZ
WILLIAM J. BOLGER
WILLIAM A. ZUTT

MEMORANDUM

TO: Josh Moreinis - Tim Miller Associates

FROM: William A. Zutt, Esq.

RE: Emerald Ridge Subdivision

DATE: August 3, 2006

3.7.24

It occurred to me after issuing my memo yesterday that, in addition to documenting the applicant's contractual rights in regard to the proposed emergency access road, amendments to the Development Approval Plans will be required for such of the Venezia lots as will be traversed by the proposed EAR. Since the most recent plan revision (incorporating the EAR) represents the current principal proposal, applications to amend the relevant Venezia DAP's will need to be incorporated as part of the overall project application. See Jan and/or Laura for details.

WAZ/kb
cc: Planning Board
Laura Lussier
Jan Johannessen
Todd Atkinson
Bruce Barber

64c10
JM

HAROLD J. GARY
COMMISSIONER

EMMA KOUNINE
DEPUTY COMMISSIONER

DEPARTMENT OF HIGHWAYS & FACILITIES
Tel: (845) 878 – 6331 *Fax:* (845) 878 – 3260

January 4, 2007

Keith Staudohar
Project Engineer
Cronin Engineering, P.E., P.C.
The Lindy Building, Suite 200
2 John Walsh Boulevard
Peekskill, NY 10566

Re: **Emerald Ridge Subdivision**
Peekskill Hollow Road (CR 21)
Town of Putnam Valley

Dear Mr. Staudohar,

We have reviewed Drawing SP-3.1 "Site, Grading and Utility Plan" (rev. 11-17-06) and the large scale drawing of the intersection improvements (11-17-06) that we received on 12/14/06. Assuming there will be no net increase in runoff volume into CB-1 on Peekskill Hollow Road, as you verbally stated, we issue conceptual approval for the work that will be done within County right-of-way for this project.

Please note a Permit to Do Work On and Within a County Road Area must be applied for and issued by this Department before any work can begin.

Please call if you have any questions.

Very truly yours,

Harold J. Gary
Commissioner

by: Mark B. Rosa, P.E.
Supervisor, Planning & Design

cc: Emma Kounine
Alexis Hawley

CRONIN ENGINEERING, P.E., P.C.
The Lindy Building, Suite 200, 2 John Walsh Blvd., Peekskill, New York 10566
Tel. (914)736-3664 • Fax. (914)736-3693

December 13, 2006

Mark Rosa, Engineering Supervisor
Putnam County Department of Highways and Facilities
842 Fair Street
Carmel , NY 10512

Re: Emerald Ridge Subdivision
Intersection and drainage improvements
Peekskill Hollow Road (C.R. #21)

Sent via overnight mail

Dear Mr. Rosa:

Pursuant to our recent phone conversations, find enclosed two revised Emerald Ridge Subdivision plans. The subdivision plans have been revised where there are now only 14 lots (25 previously) and minimal improvements to the existing Town road. The Marsh Hill Road intersection with Peekskill Hollow Road (C.R.#21) will still be improved similar to the previous plans with a widening of the road to better facilitate vehicular movements exiting and entering the road. However, the applicant for the subdivision is no longer proposing to make the drainage improvements along CR#21.

It is understood that the County is designing the improvements to be made on CR#21 for alignment, width and drainage including the road section that this project fronts onto. It is also understood that the County is proposing drainage improvements along our side (north side) of the road to eliminate two existing County cross pipes and convey road drainage to the Peekskill Hollow Brook along the north side of CR#21. The two cross pipes currently discharge road drainage onto private properties and these will be eliminated with the County improvement package. It is believed that the County improvements will be constructed within the next several years.

As discussed and previously requested, please provide a written acknowledgment and conceptual approval of the project as currently composed. Sight distances at the Marsh Hill Road intersection are 355' looking left, 530' looking right and the stopping sight distances exceed 500' in both directions. The intersection improvements were discussed at a site meeting with Mr. Paul Mancari of your Department in 2004.

Should you have any questions or require additional information please contact me at the above number. Thank you for your time and consideration in this matter.

Respectfully submitted,

Keith Staudohar
Project Engineer

cc: Val Santucci

Rosa-pcdhf-emerald ridge-121306.doc

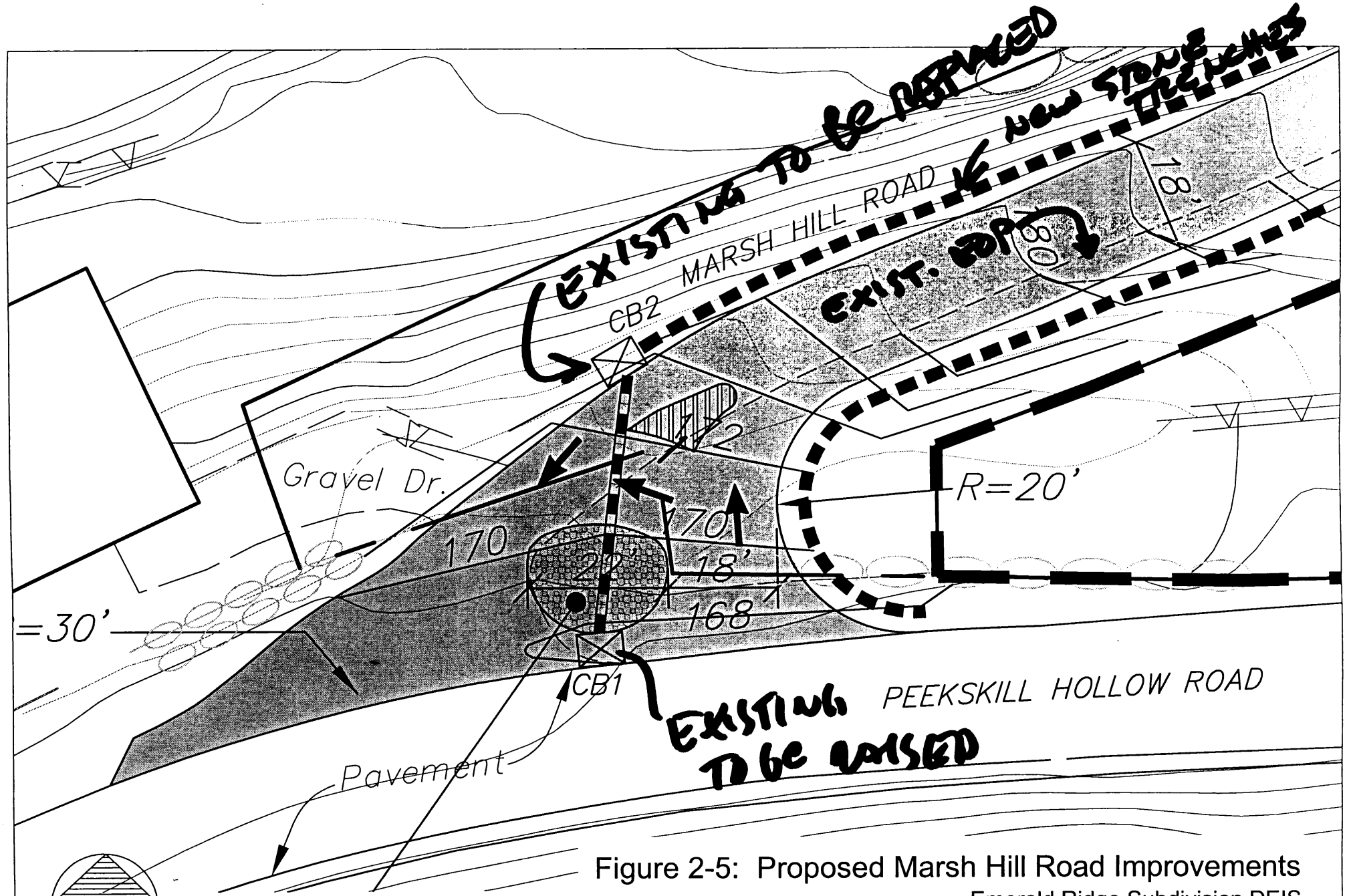

Figure 2-5: Proposed Marsh Hill Road Improvements

Emerald Ridge Subdivision DEIS

Town of Putnam Valley, Putnam County, New York

Source: Cronin Engineering, P.E., P.C., November 17, 2006

Scale: 1 inch = 20 feet

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Capital District Office
Phone: (518) 235-8050

Orange County Office
Phone: (845) 567-1133

21 Fox Street, Poughkeepsie, New York 12601
Phone: (845) 454-3980 Fax: (845) 454-4026

Web: www.chazencompanies.com

North Country Office
Phone: (518) 812-0513

January 15, 2007

Mr. Michael Raimondi, Jr., Chairman
and Members of the Planning Board
Town of Putnam Valley Planning Board
265 Oscawana Lake Road
Putnam Valley, New York 10579

Re: Emerald Ridge Environmental Impact Statement, 7th Review
Tax ID: 84.-1-5/10.1/10.2/10.3
Job Number: 10424.05

Dear Chairman Raimondi and Members of the Planning Board:

I have completed my review of the Emerald Ridge Final Environmental Impact Statement (FEIS), last revised January 5, 2007. Based on a review of the submitted documents, the following items should be addressed prior to the Board's acceptance of the FEIS as complete and its circulation to the Involved and Interested Agencies.

1. **Page 1-4, 3rd Full Paragraph** – The sentence that has been deleted in redline should remain; the second to last sentence should be removed and replaced with: "If the originally proposed 25-lot subdivision layout is pursued, the Applicant will address outstanding comments provided by the Planning Board and its consultants in a Supplemental EIS."

2. **Response 2-19** – The applicant has not altered the text to respond to my previous comment letter.

3. **Response 2-28** – The applicant should state that the list of Involved and Interested Agencies has been updated accordingly.

4. **Response 3.1-6** – Please compare in a table, the truck trips required for the 25-lot layout with those required for the revised layout.

5. **Response 3.1-18** – The applicant has not altered the text to respond to my previous comment letter.

6. **Response 3.2-32** – The applicant has not altered the text to respond to my previous comment letter.

7. **Response 3.3-22** – Text provided under Response 3.3-15 should be provided here as well.

8. **Response 3.4-5** – Response 3.3-15 should also be referenced.

9. **Page 3.6-25** – Change "Comment 3.2-28" to "Comment 3.6-28."

10. **Response 3.7-3** – The applicant should reference the appropriate truck turning movement figures and clearly identify those trucks that will not be able to either enter or exit the site and from what direction.

11. **Response 3.7-11** – Please compare these counts to what was previously proposed in a table.

Subdivision/Site Development Plan Comments - Complete

This information is based on my review of the FEIS and project plans. It should be noted that I have reviewed the subdivision plans for SEQRA compliance only.

Sincerely,

Jan K. Johannessen
Town Planner

cc: William A. Zutt, Esq. (via fax 845-528-2566)
Irv Sevelowitz, Code Enforcement Officer (via fax 526-8806)
Todd Atkinson (via fax 914-232-6827)
Bruce Barber (via fax 914-962-0330)
William Canavan (via fax 914-276-2664)
Josh Moreinis, AICP, PP (via fax 265-4418)
Keith Staudohar (via fax 914-736-3693)
David S. Steinmetz, Esq. (via fax 914-683-5490)

J. ROBERT FOLCHETTI & ASSOCIATES, L.L.C.
ENGINEERING / PLANNING / SURVEYING
www.jrfa.com

January 15, 2007

Town of Putnam Valley Planning Board
Mr. Michael Raimondi, Chairman
265 Oscawana Lake Road
Putnam Valley, New York 10579

Re: VS Construction, Emerald Ridge, 5th Review
Tax ID#: 84.-1-5 and PO 84.-1-10.1, 10.2 and 10.3
JRFA Job #03500408-1

Dear Chairman Raimondi and Members of the Board:

Our office has received and reviewed the following documents submitted for the above referenced project as prepared by Tim Miller Associates, Inc. and Cronin Engineering P.E., P.C.:

- Final Environmental Impact Statement, Volume I, revised January 5, 2007.
- Plans entitled; "Subdivision and Development Approval Plan for Emerald Ridge", 27 sheets, revised January 5, 2007.

Our office has reviewed the following sections of the Final Environmental Impact Statement:

- 1.0 Introduction
- 2.0 Executive Summary & Project Description Comments and Responses
- 3.1 Geology and Soils Comments and Responses
- 3.2 Surface Water Resources Comments and Responses
- 3.3 Groundwater Resources Comments and Responses
- 3.4 Stormwater Comments and Responses
- 3.5 Wastewater Comments and Responses
- 3.7 Traffic and Transportation Comments and Responses
- Appendices Comments and Responses

Based on our review of the submitted documents, we feel the applicant has provided a Final Environmental Impact Statement (FEIS) that incorporates all outstanding comments from our December 14, 2006 letter to the board in an appropriate engineering manner.

247 ROUTE 100
Pinewood Business Center
SOMERS, NY 10589
(914) 232-2500
Fax (914) 232-6827

26 Hamilton Avenue
Monticello, New York 12701
(845) 794-5808
Fax (845) 794-5805

Post Office Box 309
Montgomery, New York 12549
(845) 778-4020
Fax (845) 778-4165

Please note that the applicant and Town Planning Board have come to an agreement that the Stormwater Pollution Prevention Plan (SWPPP) for the site will be provided as part of the final approval plan.

Please note that wetland related considerations were not reviewed by our office in anticipation of review by the Town's Wetland Consultant.

This information is based on my review of the documents submitted.

Should you have any questions or comments, please feel free to contact our office.

Sincerely,

Todd W. Atkinson, P.E.
Town Planning Board Engineer

TWA/jac

cc: William A. Zutt, Esq. (via fax 845-528-2566)
Jan K. Johannessen (via fax 845-454-4026
Bruce Barber (via fax 914-962-0330)
Irv Sevelowitz (via fax 845-526-8806)
Earl Smith (via fax 845-526-4729)
Applicant

Cornerstone
ASSOCIATES

January 19, 2007

To: Planning Board

From: Bruce Barber
Town Wetland Inspector

RE: **Emerald Ridge Subdivision**
Marsh Hill Road
Tax Map: Section 84 Block 1 Lots 5, 10.1, 10.2, 10.3 and 25

Dear Chairman Raimondi and Members of the Planning Board:

Please be advised that I have reviewed the following documents submitted by the applicant:

- Final Environmental Impact Statement prepared by Tim Miller Associates dated January 5, 2007.
- Plans entitled; "Subdivision and Development Approval Plan for Emerald Ridge", prepared by Cronin Engineering dated 1/5/07 (27 sheets).

This FEIS contained new submissions found in Appendix H (Attachments Supporting Wildlife Surveys), Appendix I (Biodiversity Study) and Appendix J (Analysis of Hydrology for Wetlands A and B) which required extensive review. Based upon my review of the new submissions and with respect to the comments found in my memo of December 13, 2006, I find the following additional information is required (my responses of prior questions are in ***bold and italic)***:

Comment Memo of December 13, 2006:

2.0 Executive Summary:

Figure 2-3: Grading and Utility Plan: At the prior review of this project, the Planning Board determined the creation of a greenbelt connection between Wetland A and Wetland B as wetland buffer mitigation was not desirable. On page 3.2-3 of the FEIS, the applicant indicates in Response 3.2-10 that *"expanded*

areas of buffer are being preserved by the conservation easement proposed around Wetland B (on Lots 1, 3, 13 and 14) and that preservation of large areas of property does mitigate potential long term impacts to the wetlands on the site" Please note that the preservation of the former Brook Falls Cottage site is highly laudable but in itself does not mitigate for the direct loss of wetland buffer.

1. The applicant should quantify the amount of expanded wetland buffer above the 100' setback that has been preserved by the conservation easement. The response should detail how this mitigation will preserve the water quality to Wetland B and ultimately to Peekskill Hollow Brook which forms part of the drinking water supply to the City of Peekskill.

The location of the NYSDEC wetlands to the north of the project was confirmed on December 30, 2006.

2. The applicant has not included the location of the adjacent NYSDEC wetlands, the 100' buffer or the hydrological connections to this wetland from wetlands C and D. In addition, the applicant has not included the hydrological connection from wetland B to the Peekskill Hollow Brook.

3.1 Geology and Soils:

Page 3.1-2: Response 3.1-8: The applicant indicates that as-built maps are not required due to reduction in project scope. As built maps provide the baseline information to insure compliance with the approved plan and also for bonding and future inspection. As-built maps should be provided.

3. The applicant has not responded to this question. The applicant has indicated that as-built maps will be provided at the time of certificate of occupancy. To insure that unapproved clearing does not occur in the field, it is recommended that the Planning Board require the applicant to include in the FIES that certification from a NYS Licensed Surveyor will be provided prior to the start of construction, that the approved limits of disturbance lines for the subdivision infrastructure have been field located and that certification will be provided by a NYS Licensed Surveyor prior to the issuance of each building lot that the limit of disturbance has been field located as per the approved plan..

3.2 Surface Water Resources:

Page 3.2-1: Response 3.2-2: In order for the wetland delineation to be complete, the applicant is to provide a map depicting adjacent, off-site wetlands and adjoining buffer and include any hydrological connections as jurisdictional wetlands. A conformation letter from the NYSDEC is required stating that jurisdictional wetlands or wetland buffer have been delineated (executed conformation block on plans) and are not impacted by this project and an Article

24 permit is not required (see NYSDEC comments 3.2-29 and 3.2-30). Wetlands C and D are indicated as NYSDEC wetlands but appear as isolated vernal pools without connection to the larger off-site wetlands. In addition, the Town of Putnam Valley jurisdictional wetlands and wetland buffer adjacent to the site must be shown. Please note that according to Chapter 144 of the Town of Putnam Valley Town Code, the presence of hydrology, hydrophytic vegetation or hydric soils constitute jurisdictional wetland (see comment letter 8/26/06 referencing DEIS page 3.2.-2: ("All Town of Putnam Valley jurisdictional wetlands that are adjacent to the site, such as buffers that extend onto to the property must identified and mapped"). Also includes Responses: 3.2-5, 3.2-11, 3.2-14.

4. The applicant has not responded to this question. Please note that the Planning Board indicated that they would contact the NYSDEC regarding jurisdictional notification.

Page 3.2-2: Response 3.2-7: Applicant is required to provide pre and post construction pre and post-construction hydrographs should be submitted based on the data found on page 3.2-6 (Table 3.2-1). This information will determine if the water budget or hydroperiods of Wetland A or Wetland B will be altered. No further analysis of Wetland C or Wetland D is required if the 31.0 acre conservation easement is enacted in this area.

5. The applicant has provided the required hydrological analysis in Appendix J. Please see comments below under heading of "Appendix J".

Page 3.2-3: Response 3.2-10: The road and stormwater outfall construction result in a loss of wetland buffer which requires mitigation.

6. See comments contained in #1 above.

Page 3.2-3: Response 3.2-12: The SWPPP must be reviewed at this design point to insure that there is no pre and post construction change in stormwater quality or quantity that could adversely affect Wetland B or the adjoining buffer.

7. Response does not consider Chapter 144 (Freshwater Wetlands) of the Town of Putnam Valley Town Code (please see specifically 144-4B(3).

Page 3.2-4: Response 3.2-16: Applicant indicates that stormwater calculations have been conducted through the 10 year storm. Please indicate why calculations have not been included through the 100 year storm event.

8. Applicant has not responded to this question.

Page 3.2-11: Response: 3-2-31: Does the applicant proposed to provide adequate financial resources for baseline reporting and future stewardship and monitoring?

9. Applicant has not responded to this question.

3.3 Groundwater Resources

Page 3.3-1: Response 3.3-1: The ground water consulting firm is highly respected. Can scientific references please be provided to support their commonsense and intuitive estimates of septic system ground water recharge?

10. The applicant has provided excellent documentation. It is recommended that the Planning Board attorney review the recommendations and comment.

Page 3.3-1: Response 3.3-2: As the results of one (or two) samples are not definitive, it is recommended that in addition to the consultant's recommendation, the Putnam County Department of Health provide testing protocol to insure that there is no risk to drinking water from arsenic contamination. This written protocol should be provided to the Planning Board prior to public hearing.

11. The applicant has not entirely answered the question. Please provide the testing protocol from the Putnam County Department of Health with respect to testing residential wells that have had a positive lab result for arsenic.

3.4 Stormwater Comments

Page 3.4-2: Response 3.4-6: Please provide completed SWPPP for review prior to public hearing. Provide information regarding stormwater structures on Lots 13 and 14. Provide pre and post construction stormwater quality and quantity information at design point located at discharge of all basins. Please indicate where stormwater from basin located on Lot 1 discharges to and provide explanation of the function of the stormwater system located on Lot C. Please provide detail of stormwater basin plant material.

12. Applicant has addressed this question.

Page 3.4-3: Response 3:4-11: Provide verification regarding what pre-construction baseline data will be provided.

13. Applicant has addressed this question.

Page 3.4-3: Response: 3.4-13: Please provide estimate of tax impact to residents within the stormwater district.

14. Applicant has addressed this question.

3.5 Wastewater Comments:

Apparent expansion areas are located outside of the majority of the proposed individual lot limits of disturbance. Have waivers been obtained from the Putnam County Health Department indicating that expansion areas will not have to be cleared?

15. Applicant has addressed this question.

3.6 Vegetation and Wildlife

The applicant has performed an extensive biodiversity study over a substantial period of time. While it is probable that adequate study and information gathering has been conducted, the format of the biodiversity report in the FEIS does not provide the detail necessary in order to draw a complete conclusion.

The protocol document of the Town of Putnam Valley "Wildlife Habitat and Biodiversity Guidelines" specifies the methodology required to conduct biodiversity studies. The applicant is request to please follow the following biodiversity format in the FEIS and answer the following questions:

1. Identification of on-site and adjacent habitat types. The applicant should provide in tabular and summary form a listing of all habitat types (e.g. as described in the Biodiversity Assessment Manual developed by Hudsonia and NYSDEC.) on and adjacent to the site.

2. Develop study list of threatened, endangered, special concern (provide NYSDEC Natural Heritage Report) and development sensitive focal species (MCA study) that utilize these habitat types during at least part of the life-cycle. Applicant should provide this tabular list.

3. Development of study methodology to detect the presence of species on the study list. Included in the methodology is a description of the areas of the site, transect locations, time of day, season of year and weather conditions under which the site will be evaluated for each listed species. Applicant should provide transect and bird survey point maps. The date, time of day and weather conditions should be reported for each investigation of each species on the study list.

4. Develop map, photographs (with mapped location of photographs) and supporting documentation of identified species on the site.

5. Development of a habitat management plan for all species (detected or not) which identifies and protects identified critical habitat and range area that should be preserved to prevent extirpation.

   Upon completion of the above, review of the biodiversity study may be completed.

16. Applicant has provided supplemental biodiversity information. See comments below under heading; "Appendices H and I".

Page 3.6-24: Response 3.6-23: Created stormwater basins (as opposed to biofilter designs) have been shown to be used as breeding ponds by amphibians to their detriment due pollution loading and variable water levels. What measures may be taken to prevent this occurrence?

17. Applicant has partially answered this question. Please indicate why spotted and marbled salamanders will not use these artificial pools and provide information how/if this can be prevented.

Figure 3.6-1: This figure indicates the proposed undisturbed woodlands. The applicant should provide detail on the map to indicate the areas which are to be permanently preserved as compared to those areas which potentially may be altered in the future.

18. Applicant has provided this information.

3.9 Police, Fire and Emergency Medical Services

Page 3.9-1: Response3.9-2: Please provide data to support conclusion of a net tax surplus.

19. Applicant has addressed this question.

3.12 Fiscal and Economic Impacts

Page 3.12-5 Response 3.12-2: The figure of an enrollment of 17 children in public schools (plus 2 in private schools) or 1.328 school age children per house from the 14 homes appears very conservative. Are four bedroom homes or five bedroom homes anticipated?

20. Applicant has not addressed this question.

Appendices:

The applicant has provided the following new, supplemental information in this FEIS:

Appendix H: Attachments supporting wildlife surveys
Appendix I: Biodiversity Study
Appendix J: Analysis of Hydrology for Wetlands A and B

My comments (italicized) are as follows:

Appendices H and I do not follow the protocols outlined in the Town of Putnam Valley Biodiversity Assessment guidelines as follows:

Appendix H: Attachments supporting wildlife surveys:

Field notes and photographs should supply strong documentation and support for the findings and conclusions that are contained in Appendix I (Biodiversity Study). Review finds the attachments to be incomplete for the following reasons:

1. *Photographs do not provide clear information regarding all on-site habitats and important ecological features. The photographs are not keyed to a map of the property and do not have date stamps. Information should be keyed to the photographs which provide documentation regarding the suitability or unsuitability of the habitat for a particular species.*

2. *Information found in "Wildlife Observation Lists" is unclear. Check marks of species identified are not checked in corresponding columns.*

3. *Other than an email, there is no documentation of field work conducted for amphibians.*

4. *There is no documentation of field work conducted for reptiles or mammals.*

Appendix I: Biodiversity Study:

Page 1 of 24: Areas which were searched for smaller mammals, reptiles and amphibians should be depicted on the habitat map.

Page 3 of 24: Table 1: "Confined stream corridor" and "brushy cleared land" habitats do not appear on 'Vegetative Associations" map in this report. The locations of these habitats should be provided to verify the location of field work for target species.

Page 9 of 24: Table 3:

Habitat descriptions found in Table 1 are not consistent with the habitat descriptions column of this table.

Box turtle and worm snake appear twice in this table with differing habitat requirements.

The following species found on pages 32-33 of the referenced "Croton to Highlands Biodiversity Plan" were omitted:

Amphibians:

*Red spotted newt (focal species)**
Fowlers toad (focal species)
Gray treefrog (focal species)

**This species in the terrestrial "red eft" stage was found in the dry vernal pool (wetland "D") in large numbers during wetland verification with Chris Robbins of Tim Miller Associates.*

Reptiles:

Northern copperhead (focal species)

Birds:

American Black Duck (focal species)
American Woodcock (focal species)
Sharp-skinned hawk (NYS special concern, focal species)
Northern goshawk (NYS special concern, focal species)
Bald Eagle (NYS threatened, focal species)
Osprey (NYS special concern, focal species)

Information why these species were not considered in the study should be provided.

Field sheets found in Appendix H do not comport with study species found in Table 3.

Page 10 of 24 Table 4: The specific species listed in Table #3 on page 9 have been grouped. Out of all the species found in Table #3, what identified habitat is present to support the possible presence of these species? What specific study methodology will be used to identify each of these species?

Page 10 of 24: Specific dates of field investigation are given for 2005. Other than April 15, 2005 described as "rainy weather on the night", and the other dates described as "clear weather" no information is given regarding time of day and weather conditions (e.g. temperature, rainfall within last 24 hours, etc) or what the field person was looking for on each date.

Page 11 of 24: Applicant indicates that during 2006, were performed according to protocols set forth in the Town of Putnam Valley "Wildlife and Biodiversity Assessment Guidelines". The author includes dates of amphibian surveys on page 16 of 25 but does not include weather conditions or specific species that are being looked for. Only general information is provided regarding field work for reptiles and mammals. Field work is not documented by field notes in Appendix I. Please note that information contained with respect to Breeding Birds (page 12 of 24) adequately documents field time, methodology and findings (other than photographs of study points as indicated above).

Pages 18-22: Excellent information provided. Include specifically, what (if any) threatened, endangered, special concern and focal species were found on this site and where on the site were they found? Please than provide this information on a site map and overlay the proposed areas of disturbance. Conclude, what specific species or habitat for these species will be disturbed by the proposed improvements.

Pages 23-24: Provide specific information regarding the effects of the proposed improvements on the identified impacted species or habitat identified above. Are there any critical habitats that will be impacted by the proposed development? Assess the impact of fragmentation on the interior bird species given the ultimate potential of habitat modification or loss on the majority of the individual building lots and infrastructure.

In summary, please determine, based upon your findings and submittal of the above information, if there are any habitat management or conservation measures necessary in the areas of habitat on this site that ultimately will be changed in order to prevent a reduction in biodiversity as measured by the presence of listed endangered, threatened, special concern and/or focal species (MCA). For example, the study indicates that the ovenbird (a focal species) was located in the northwestern section of the site. Will this location be disturbed, what will the impact be to this species? Provide specific detail on how that impact has been mitigated through management or conservation measures?

Appendix J: Analysis of Hydrology for Wetlands A and B:

This study was conducted to determine if there will be any change in water levels (water budget) to Wetlands A and B after completion of construction. Reductions in water levels can result drying and eventual loss of the wetlands, increases in water levels can result in changes ranging from the loss of existing trees and vegetation to downstream flooding. The applicant has concluded that there will be no changes in the water budget to Wetland A and B.

The applicant has not provided data to support conclusions drawn in this analysis.

Page 2, Table 1: Applicant has not provided an appropriate map indicating watershed areas/sub watershed areas, design point information, consideration of inflows from stormwater basins or support for pre and post construction curve numbers. For example although vegetation is changing from woods to lawn surface and there is impervious surfaces added such as a road, driveway and roofing, the pre and post construction runoff numbers are the same. In addition, the applicant has not commented if there is any flow from wetland A to wetland B which will be blocked by the proposed road resulting in hydrological isolation of wetland B.

Respectfully submitted,

Bruce Barber, PWS
Town of Putnam Valley Wetland Inspector

Cc: Town Planner, Town Engineer, Planning Board Attorney, Building Inspector, Applicant

CHAZEN ENGINEERING & LAND SURVEYING CO., P.C.

Capital District Office
Phone: (518) 235-8050

21 Fox Street, Poughkeepsie, New York 12601
Phone: (845) 454-3980 Fax: (845) 454-4026

North Country Office
Phone: (518) 812-0513

Orange County Office
Phone: (845) 567-1133

Web: www.chazencompanies.com

February 7, 2007

Mr. Michael Raimondi, Jr., Chairman
and Members of the Planning Board
Town of Putnam Valley Planning Board
265 Oscawana Lake Road
Putnam Valley, New York 10579

Re: Emerald Ridge Environmental Impact Statement, 8th Review
Tax ID: 84.-1-5/10.1/10.2/10.3
Job Number: 10424.05

Dear Chairman Raimondi and Members of the Planning Board:

On behalf of the Planning Board, The Chazen Companies (TCC) has reviewed the following documents:

- Emerald Ridge Subdivision Final Environmental Impact Statement (revised and new text and figures), prepared by Tim Miller Associates, Inc., last revised February 5, 2007.

The Final Environmental Impact Statement (FEIS), prepared by Tim Miller Associates, last revised February 5, 2007, has been found to be complete.

The Planning Board should identify a date for a public hearing on the FEIS, preliminary plat, and other required Planning Board approvals. Although a public hearing on a FEIS is not required and specific requirements for the scheduling of such a hearing do not appear to be defined, it is reasonable to employ the same timeframes in its scheduling as would be used for the scheduling of a DEIS public hearing. According to 6 NYCRR Part 617.9(a)(4)(ii), a public hearing on a DEIS must commence no less than 15 calendar days or no more than 60 calendar days after the first filing and circulation of the Notice of Completion. As the Notice of Completion will likely be approved on February 12, 2007 and documents will likely be circulated by the applicant later that week, it is recommended that the public hearing take place on March 12, 2007.

A Notice of Completion/Environmental Notice Bulletin has been prepared and is attached for your consideration. The applicant will be responsible for circulating the FEIS, project plans, and Notice of Completion/Environmental Notice Bulletin; it is assumed that the Planning Board Clerk will provide the required information to the newspaper, which is required to be published at least 14 days prior to the public hearing.

If you have any questions, please do not hesitate to call.

Sincerely,

Jan K. Johannessen
Town Planner

cc: William A. Zutt, Esq. (via fax 845-528-2566)
Irv Sevelowitz, Code Enforcement Officer (via fax 526-8806)
Todd Atkinson (via fax 914-232-6827)
Bruce Barber (via fax 914-962-0330)
William Canavan (via fax 914-276-2664)
Josh Moreinis, AICP, PP (via fax 265-4418)
Keith Staudohar (via fax 914-736-3693)
David S. Steinmetz, Esq. (via fax 914-683-5490)

Appendix B

Public Hearing Transcript

ORIGINAL

PLANNING BOARD

TOWN OF PUTNAM VALLEY

----------x

PUBLIC HEARING: EMERALD RIDGE SUBDIVISION

----------x

July 31, 2006

6:06 p.m.

M E M B E R S:

BILLY CROWDER, CHAIRMAN

TOM CARANO, BOARD MEMBER

EUGENE T. YETTER, JR., BOARD MEMBER

JOHN ZARCONE, JR., BOARD MEMBER

RICHARD TULLY, BOARD MEMBER

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A P P E A R A N C E S :

ZARIN & STEINMETZ

Attorneys for the Applicant

81 Main Street

White Plains, New York 10601

BY: DAVID STEINMETZ, ESQ.

ALSO PRESENT:

William Zutt, Esq.

Josh Moreinis

Todd W. Atkinson

Jan K. Johannessen

Steve Marino

Keith Staudohar

MR. STEINMETZ: Good evening, Mr. Chairman, members of the board. My name is David Steinmetz. I'm a member of the law firm of Zarin & Steinmetz. I'm here this evening representing Mr. Val Santucci and VS Construction in connection with the Emerald Ridge Subdivision. This is a hearing on the Draft Environmental Impact Statement or DEIS that the applicant prepared as well as the preliminary layout for this application which we're going to describe in some detail tonight, but also in connection with a lot line adjustment, a site development plan approval, a major grading permit and a wetland permit.

We have various representatives of our development team here tonight who are going to make a presentation, but the primary focus is the DEIS public hearing. That's why we have brought with us tonight a stenographer, because we're required under the New York State Environmental Quality Review Act or SEQRA and accompanying regulations to put the DEIS out for public review, consensus, and

ultimately comment, and then take those comments back and as a team respond to them in writing. That's why tonight we're not going to be responding to specific questions that we may get from the public; we are here tonight in accordance with the law to listen to those comments.

As a threshold matter though, we're going to first explain the project. I have what we were asked to study by the Planning Board and its professional consultants in our DEIS. This document is publicly available where, Mr. Chairman, in the library here at Town Hall?

THE CHAIRMAN: It's on the Web site.

MR. STEINMETZ: It's on the Web site. So that document is publicly available for review as is required and we are going to take you through some planning, some environmental and some engineering issues tonight, not the least of which, as the Chair indicated, some modifications that were prompted by discussions and deliberations that we've had before the Planning Board.

So with that as the procedural background, I'm going to turn it over to Josh Moreinis, our professional planner, who's going to talk about the site and the DEIS.

MR. MOREINIS: Good evening. Members of the board, ladies and gentlemen, Josh Moreinis from Tim Miller Associates. I'm a planner with the firm that prepared the Draft Environmental Impact Statement. The DEIS looks at the environmental, the social and the economic consequences of construction of 24 homes on this 84-odd acre project site.

The DEIS was prepared according to a scoping outline that was adopted by the Planning Board and that DEIS looks at direct Effects of the project on the project site as a result of construction, as well as indirect Effects of the project on the surrounding community and on community services, for example.

The DEIS looks at mitigation measures as well. Mitigation measures are proposed wherever there are impacts anticipated and these can include things such as erosion

control measures and best management practices during construction to control any physical effects of construction, for example.

The project as you see here is of 24 proposed new homes. There is an existing home on the project site close to the top of Marsh Hill Road. The project also incorporates an existing home that's at Peekskill Hollow Road and that is for the purpose of improving Marsh Hill Road.

Part of the project includes upgrading Marsh Hill Road. Marsh Hill Road is substandard in terms of its grade, a very steep and winding roadway, and that's part of project improvements that we'll describe in a moment.

In terms of physical impacts of the project, construction expected to affect approximately 26 acres of the project site through clearing and grading activities. Our team has worked closely with the Town's consultants to limit the amount of clearing and disturbance that's required and you can see these white areas are areas where you

would have tree clearing for yard areas and also for grading.

We have proposed conservation easements to protect open space on the site and those are proposed around some of the site's wetland areas. In terms of wetlands on the site, my colleague, Steve Marino, will go into those issues, but there is a very minor amount of wetland buffer encroachment that will be necessary specifically for the installation of some utility lines.

The project's new homes comply with the underlying R2 residential zoning. They range in size from approximately two to approximately five acres in size.

We've looked at land use issues, visual impact issues, impacts on cultural resources. We expect that the project's new homes will be compatible with the surrounding homes in this area.

We've done extensive analysis of visual conditions as well, and you can see that in our DEIS just so you know what we're talking about, it's this volume.

We've done visual simulations from any potential areas that could have views of the site. And so we've simulated them, done photographic renderings of what the site might look like and those renderings have demonstrated that there's very little visual connectivity to the proposed new homes, and that's due to the change in grades with the steep grade coming up from Peekskill Hollow Road, as well as the extensive amount of wooded areas that's to be preserved on the project site and the wooded area that remains in the surrounding area.

In terms of community facilities, we've looked at police, fire, school district impacts, in terms of fiscal impacts, the tax revenues that will be received by those taxes and jurisdictions and also the cost to them. We expect that there will be 97 residents that will reside at the project site upon completion of the project, and approximately 30 of those will be public school students.

We've looked at traffic impacts of the project, and we've projected traffic to the

year of project completion. We would expect that there will be approximately 27 peak hour vehicular trips or cars that will be entering or exiting the site in any given peak hour specifically during the a.m. peak hour. So that's 27 cars in the a.m.. Approximately 30 cars in the p.m. peek hour, and our traffic analysis indicates that there will be no degradation of conditions on the surrounding intersections, the operating level of services as they're called.

But in terms of traffic impacts, there will be, as I mentioned, a major benefit to the Town as a result of this project. VS Construction Corp. has proposed to actually make the improvements to Marsh Hill Road. That would widen Marsh Hill Road to 22 feet as well as improving it's grade and alignment. And Keith Staudohar our project engineer will be going into those engineering aspects of the project in a moment, but before we do that, I would like to introduce Steve Marino who will go into some of the wetland surveys that have been done on the project site.

MR. MARINO: Thank you, Josh. Good evening, I'm Steve Marino. I'm a professional wetland scientist and senior ecologist at Tim Miller Associates. My team worked on the DEIS as far as natural resource issues go including wildlife, wetlands, natural resources and ecology of the site.

During the course of putting this plan together, four wetland areas were flagged on the property. They were flagged by Mr. Steve Coleman, former wetland inspector on behalf of the Town. Since there is now a new wetland inspector on board, we are going to revisit that wetland delineation in the next week or so in order to confirm that the new inspector is comfortable with the delineation as well.

Two of the wetland areas on the site that we're calling C and D in the DEIS are extensions of wetlands -- of a DEC wetland which is off-site to the north and we acknowledge that on the plans.

There are no impacts proposed within 100 feet of those wetlands unless we don't -- and don't anticipate any future involvement with

the DEC. DEC has walked the property and confirmed those delineations.

UNIDENTIFIED SPEAKER: What's the last thing you said?

MR. MARINO: The DEC has walked the site and confirmed the wetland delineation.

THE CHAIRMAN: We have, by the way, I don't know if you received a copy of that --

MR. MARINO: Yeah, we just received initial comments from the DEC.

THE CHAIRMAN: I'll let the public know what they were.

MR. MARINO: During surveys of this property, two of the wetlands, C and D, were confirmed and had areas that are identified as vernal pools. The wetland area also had some marginal vernal pool habitat which was important in our discussion of wildlife and wildlife habitat on the site.

Since the DEIS was presented there's been concern about the extent of the biodiversity study. We've done extensive wildlife surveys on the property during the preparation of the DEIS since that time, and the acceptance.

We're continuing field work as far as wildlife goes and have completed our amphibian surveys of the vernal pool. We completed a breeding bird survey and biodiversity survey for birds which will be included as part of the FEIS an we are wrapping up the reptile and amphibian portion which we expect to complete --

THE CHAIRMAN: Let me stop you now so the public understands.

MR. MARINO: Sure.

THE CHAIRMAN: There's something known as a Final Environmental Impact Statement, and normally the Planning Board has a public review of that document, not that it gets changed, but that's the document that the Planning Board based its findings on. The F stands for final, and there are some activities that are ongoing that will be subject to extensive review as part of that Final Environmental Impact Statement process. So the terminology FEIS is that Final Environmental Impact Statement. That document, by the way, will also contain at least some reference to all of the public

comments received and the answers to the comments that you've given by the applicant that the Planning Board will take into account. So I wanted to make sure that the people understood what that jargon is, FEIS.

UNIDENTIFIED SPEAKER: When does that come out?

THE CHAIRMAN: It happens when everything gets finished. It's not going to be very, very soon. It will be a while, because we still have the public hearing process to go through for the preliminary plan itself, but it has to happen before we -- it has to happen before the Planning Board takes a vote on the preliminary plan.

MR. MARINO: So in wrapping up that thought, the FEIS and the DEIS are one document in the end that considers the environmental impact statement and will include spot comments and responses from part of the public hearing and through the Town's consultants as well.

The total wetland area on the site is approximately 5.6 acres. The largest wetland

is what we call wetland B in the center of the site. It's about three and a half acres and drains to a tributary which flows to the Peekskill Hollow Brook to the south.

No direct impacts to wetlands are proposed as Josh mentioned. There is a minor buffer impact with approximately 2,700 square feet in order to drain a retention basin which is outside the buffer into an area that's just inside the 100 foot buffer on the proposed road and through the wetland.

We have continued, as I mentioned during this process, to continue studies on this site. Those will be included in the FEIS. I can bring you up to date real quickly. As I said, we finished the amphibian surveys, found some interesting things going on in wetland C and D and we will be discussing that more in the FEIS.

Tree survey was completed on the property. Approximately 8,000 trees were calculated to be on the overall property. About 2,700 trees -- I think the number's changed to 2,500 trees within the disturbance

areas. As we move forward with the final plans for the individual lots, we will look to reduce that number. Most of the trees -- more than 70 the percent of the trees on the site are within the 6 to 12 inch range. So it's generally a younger, smaller size forest.

Let me just wrap this up. The Town's consultant has asked that we review the wetland delineations. Bruce and I are planning to do that this Wednesday and Thursday, weather permitting.

And one other interesting observation; we did identify a box turtle on the site which is a State listed species of special concern and we'll certainly discuss that in the FEIS as to the implications of that, and I introduce then Keith Staudohar to discuss the engineering issues with the site.

MR. STAUDOHAR: Thanks, Steve. Good evening, I'm Keith Staudohar with Cronin Engineering. We're the project engineer for the site. The development of Emerald Ridge has a couple of engineering issues that we'll discuss tonight. One is the road. Presently,

Marsh Hill Road is an existing Town road. It's paved for about 1,400 feet up to the existing stone house. I think everybody may know where that is. It's very narrow. It's only 16 to 18 feet wide. It's steep. It exceeds 18 percent in some sections. It's winding, it's vertical and horizontal alignments are a little old and a lot of the edges of the road are gutted out because of storm water and things like that. The next 600 foot is not paved, but it's still within the Town right of way and then we get into the project site.

So the first 2,000 foot is Town maintained and/or Town owned and we're bringing a road into the site up to the loop. We're adding another 1,400 feet and then the loop itself is about 1,700 feet so we have a total of about 5,100 foot of road from existing Peekskill Hollow Road.

As part of the DEIS process with the Town and discussions with the Town Board and Town staff, the road became an issue. So we took a hard look at this project and we were able to

come up with an emergency access that would come from the loop and run down through the Brook Falls Cottages property and cross the bridge and out to Peekskill Hollow Road. We designed it so that emergency access could be 16 feet wide or 22 feet wide with relatively minor grading issues. We would be at 15 percent for about 600 foot of the road. The remainder will be relatively flat up in this area and about 15 percent through here (Indicating).

So we've looked at it -- we took a hard look and were able to come up with a way to mitigate the length of road issue for the whole project with that emergency access.

Another issue -- another concern in terms of engineering is the storm water management of the site, and what we're proposing to do is provide a whole network of series of pipes, catch basins and conveying the storm water to find water quality and/or retention basins which will hold the water, treat the water and release the water slowly.

Part of the EIS indicated at a portion of

the project which is generally inside this loop down through here in our storm water report indicated that we had a slight increase in the peak flows in the post condition, so we went back and took another look at it since the EIS was accepted and were able to, by adding a little small detention basin on lot 21, we're now able to reduce the peak flows leaving this sub-basin and therefor all areas of the site in the post-development condition will have equal or less than the precondition in terms of peak flow rates.

The project as Josh has stated are all individual lots between two and five acres. They will all be serviced by individual wells and septic systems. Each of the septic systems has been tested and inspected by the County Health Department and so everything we have laid out is something that will be approved by the County at the time we make that submission.

I did forget to say one thing about Marsh Hill Road. The entrance of Marsh Hill Road currently at the intersection with Peekskill

Hollow Road is at a very acute angle and it's very steep. So what we're proposing to do at this point is make it wider. I don't know if you could see the red dotted line is the existing Marsh Hill Road. It comes out at a sharp angle. We're widening that entrance and providing a median with some pavers so that we can facilitate more movements of different kinds of vehicles into the site. Right now there's no way a truck can make a turn and get into the site from the north side or east side. They would have to come in from the south (inaudible) hill. By widening this road we're able to accommodate a bus movement, an SUV movement or certainly a UPS or FedEx truck. However, they would require to cross the center line of the road to make that maneuver, but it is a vast improvement because nothing can make that turn now.

So we're -- our improvement package will smooth out the road, widen the road, provide curbs, provide drainage improvements and make it a much more safer road then it is now.

I think those are the main engineering

issues that we need to discuss right now.

UNIDENTIFIED SPEAKER: (Inaudible).

MR. STAUDOHAR: Right. Yeah. We did drill five test wells on-site -- four test wells on-site as part of our health department approval process and each of the wells drilled were tested for bacteria and organics and inorganics and everything came out fine and they all had the proper yields for site development.

3.3-14

UNIDENTIFIED SPEAKER: How deep were they?

MR. STAUDOHAR: They were approximately 5 or 600 feet.

MR. MOREINIS: Okay. That concludes our presentation. We look forward to your comments, that's really what we're here for tonight, and we'll be responding to those in the FEIS again as David mentioned. Thank you for coming tonight.

THE CHAIRMAN: Do you have any comments you want to make? I'm going to the consultants.

MR. BARBER: I just want to clarify my

letter a bit.

THE CHAIRMAN: Sure. Because that's -- simply because that's an issue that's still under investigation as to opposed to having already been done, just to review.

MR. BARBER: Good evening. I'm Bruce Barber, the Town of Putnam Valley wetland consultant and also professional scientist and certified ecologist. With clarification on the wetland issue, Mr. Marino from Tim Miller Associates and I are going out this week again, weather permitting, to verify the wetland locations as per chapter 144 of the Town of Putnam Valley Town Code.

3.2-20

Basically, we're aware that the wetlands delineation may, in so doing change as compared to represented this evening and the applicant has been made aware that that may change the ultimate development in terms of its design, possibly its lot count, configuration, et cetera. So that is what is of significance that's pending.

3.6-28

Also, the biodiversity study, very quickly, is been ongoing as most biodiversity

studies need to be conducted over a period of time to have a maximum amount of data that is still open and pending and as information is obtained from that biodiversity study that also may impact the ultimate design, layout, et cetera of the subdivision as proposed before us. So I just want to make sure that those two substantial elements are pending but are being concluded hopefully shortly.

THE CHAIRMAN: Thank you. Yes. Make sure you state your name.

MR. MANDELBAUM: Joel Mandelbaum is my name. I own and live in the summertime on property immediately, I guess, to the southeast of the site and of course if I had my druthers I would rather nothing be built. The construction is going to be very noisy. It's going to be very dusty. It's going to be a very difficult period of time, and naturally I worry somewhat about the quality of the water and my well. I appreciate the fact that it has been tested and I very much appreciate the proposal in the DEIS that the tests continue through construction and up to two

years after the certificate of occupancy. That sounds very good to me.

I also very much appreciate what are called the undisturbed woodlands, the dark green on the map which includes the area most immediately next to my house. That is very much appreciated, and I appreciate the strong recommendation of conservation easements that would keep it this way. I'm always concerned that once the plans have been approved that they be followed.

I had a kind of strange experience with the Brook Falls development across the brook from my property where there were hearings and I was given plenty of notice and the 10 houses were built and everything was fine and then without a (inaudible) I suddenly discovered an 11th house being built with no notice ever to me. So I'm a little bit leery from that expefience and worry that it stays this way.

I like the easements also as a kind of a precedent. It seems to me that the problem that the community has, that every time we permit new developments we discover our taxes

have to go up because the taxes from the new areas don't pay enough to cover the services. The easements may be the long term solution. I, for example, probably will have to sell my property in a few years because I'm aging and probably can't use it and on a market situation I will probably wind up with, obviously smaller, but a development somewhat like this, likely to pay the highest price for my land, but with even a modest tax abatement in the intervening years I would gladly sign an easement precluding that possibility and keeping this unoccupied land, and so I think many others in the community would be willing to do this and I think the community needs to consider this very strongly.

One thing that worried me very much in the DEIS was the alternative cluster housing. I hope that's off the table. Please put it off the table. Putting all these houses right in this area would have an even much greater impact on the wells nearby -- on their own wells and on the wells nearby on the problem of replenishment that is covered very well

when the houses are spread throughout. Cluster housing is an ideological matter that has really nothing to do with this project where the undisturbed woodland remains at large and I think that covers the matter.

I do appreciate the tact, I would call it, with which the initial proposal has been made and given, I guess, the fact that we do need the market to operate, but we have to find ways of (inaudible) subsidizing it so much. It's not really a free market if the taxpayers are paying something for both the seller and the buyer.

THE CHAIRMAN: Thank you.

MR. YETTER: Thank you, sir.

THE CHAIRMAN: Next is Wendy.

MS. WHETSEL: Hi. I'm Wendy Whetsel and I'm a Town Council person. I have some concerns about this project. It's the responsibility of the Town Council people to protect and make sure that residents are protected and get the best services possible, for those who live here and for those who are perhaps moving in.

I know Marsh Hill grade is way over what's considered a minimum grade of 10 percent and I'm concerned about getting emergency vehicles up to people in the community that might need them. I would recommend that the highway department, the ambulance corps and the fire department meet with the Planning Board to really discuss in length if they have any concerns about making sure that these properties are accessible in case of emergencies and storms. This is done in other towns and it seems like a good idea for perhaps us to do it as well.

One of the other concerns of course is that the amount of houses in some of the reports that I have show that it's going to cost the Town more in services then what the taxes are going to bring in, and of course this is going to impact the individual taxpayer in the community and I would hope to see that not continuing to happen.

I understand -- is it still going on that we have kind of ignored the 1,200 foot cul-de-sac road? Are they taking care of that

already or not?

THE CHAIRMAN: It's not being ignored. The Planning Board needs to officially grant a variance for that.

MS. WHETSEL: Well, I understand this is not common for projects of this size and it sets a terrible, terrible precedent, I believe, for future projects and this particular issue is of great concern to me. So anyway, these are the concerns that I have on a project of this size. It might work better if there were fewer houses, less risk involved, but it's up to you guys. Thank you.

MR. YETTER: Thank you.

THE CHAIRMAN: John -- John Cohen.

MR. COHEN: My name is John Cohen. I have a prepared statement with a few questions. In relation to the wetland areas and the ponds around them and the issue of, I guess they call them vernal ponds because some of these wetlands dry up. In the past we have considered wetlands to be a discrete area just where it's wet, but it turns out in terms of the wildlife, the wildlife needs more than

just a wet area. They may at a later point go to a field and then to a forest and then to a meadow and then to a pond before they go back to a wetland, and I think that that should be -- it looks like these wetlands are going to be very disruptive -- disrupted by the houses all around them, so I think that should be considered. I'm not sure exactly what the terminology for that phenomenon I'm describing, but it exists.

I sort of am saying the same thing that Wendy was saying about an impact statement. In other words, how much is it going to cost the Town, how much the later services, the infrastructure costs, how much that will impact the citizens of the Town.

I'm also very concerned about the nature of this entrance to Peekskill Hollow Road. It's a very dangerous entrance now. I know widening it looks like a solution, but with the traffic on Peekskill Hollow Road and if you want to go north coming down that Marsh Hill, it's a dangerous, dangerous situation. The road curves around, you have to make a

U-turn across the traffic to get there. I don't know if it's really a good idea to use that as an entrance for so many houses.

And I think I have to trust the people about the septic, but I'm concerned when you put so many septic systems surrounding wetland areas. That has ways of seeping through. Anyhow, this is very high density for our Town, so I think that should be addressed as well.

That's essentially the questions that I have.

THE CHAIRMAN: Thank you, John. Sam Davis.

MR. DAVIS: Hi. I'm Sam Davis, resident of Putnam Valley. I would second some of the concerns that were stated by Ms. Whetsel and Mr. Cohen and I would add some. First of all, I think the idea of clustering is a very good one because if we could put all the houses in one small area and take care of the water concerns that you had, sir, we would leave all the rest of it undisturbed which would certainly help in terms of biodiversity, in

terms of impact to the wetlands, et cetera.

Second, I'm wondering if all this road -- how many feet did you say this was?

THE CHAIRMAN: 5,150.

MR. DAVIS: 5,150 feet. Is that all going to be given to the Town?

MR. ZARCONE: Part of that already is the Town.

(Board member discussion.)

MR. DAVIS: How much is going to be new for the Town?

MR. MOREINIS: The entire roadway -- about 4,000.

MR. DAVIS: That's an awful lot of road to add to what our highway department has already has to maintain. We're already working at the limits of what our guys can do. We start taking on more new roads like this we're going to have to add highway workers. We're going to have to add equipment. It's going to cost even more than it does already, significantly more.

Further, you said that there would be maybe 30 children, 30 school age children and 24 homes. Typically the average is more like two and a half children per home, so I think that that may be a vast understatement, but even at 30, this will not even come close to supporting what it cost to educate those children. So now we have very much enhanced costs for the schools. We also have a great deal more cost for highway maintenance, for plowing, for salting, for blacktopping, et cetera. I think that that economic impact to our residents is a very important consideration in any development that we consider.

Now further, I'm curious about what methods you're going to use that reduce the slope of this road. I think that the only thing I can imagine you would be doing is doing some blasting, et cetera, to change the slope and even so, I think that as Wendy mentioned earlier, the slope is still going to be rather extreme and in icy, snowy conditions it's going to represent a hazard if we need

emergency vehicles to get in or out of that area.

So my concerns briefly are the road in terms of slope and cost to the Town, the degradation to the environment and the immense impact on the Town in terms of the cost to our residents. Thank you.

THE CHAIRMAN: Thank you. Patty Villanova.

MS. VILLANOVA: Hi everyone. I'm Patty Villanova, taxpayer. I really like what Sam said about the economic impacts and I was glancing at this document before I came here and it's mentioned that Mr. Santucci, these properties are going to generate over -- close to $16 million, you know, in the selling price and even if by their own numbers there's only 30 kids coming in and assuming that all things are okay, right now it's costing us almost $20,000 per child, gross figure, not Special Ed or anything. That's like $600,000 a year. You know, that's a big hit that we're taking.

MR. ZARCONE: Can I ask a question, Patty? And the reason why I'm asking, is

because you're pretty good with numbers on this. Okay. I know that there was a median number. Okay. I don't know if it was 1.2 million or something that if a home sold for that figure or higher, that the impacts were reduced if completely negated with the schools based on the sale price of the home, and I'm just asking if that's an accurate statement.

MS. VILLANOVA: I don't know those numbers. I'm just going by gross numbers and just saying --

MR. DAVIS: I think it's close to a million for one student.

MR. ZARCONE: For one student, per household. Okay. And just so I'm on the same page --

MR. DAVIS: So if there's two children in the house, it would have to be closer to two million.

MR. ZARCONE: Two million. Okay. That's what I'm asking.

MS. VILLANOVA: You do the math. I imagine they're going to be charging them high taxes. I imagine the taxes on the house has

3.12-3

got to be over 20 grand. But what if there's two or three kids? What if one of those kids is Special Ed and cost 100,00? I mean, these are all just possibilities.

You know, I concurred with Sam's concerns about the road and I was also -- I'm not sure what it means when a developer dedicates the road to the Town. I assume that means that they dedicate the cost to the taxpayers.

Another question is: Is any of this housing going to be what's called priced at work force housing. In other words, are we going to have anything in there that is, by definition, either affordable to the working people of the community; if so, how many units would be designated on that? Does anybody know?

THE CHAIRMAN: The answer is none.

MS. VILLANOVA: None.

THE CHAIRMAN: We have no --

MS. VILLANOVA: There's no requirement yet. There's no incentive or requirement for that. Okay.

THE CHAIRMAN: And that's usually, by the

way -- affordable housing is normally associated with complexes that are multi-family in nature and then a fraction of the multi-family houses are --

MS. VILLANOVA: I'm talking more like work force things, but if it's not required, it's not required.

The other last comment had to do with something I read about the people -- the construction workers that are going to be working on this project and it was mentioned that they should be people from surrounding counties. We have a lot of construction workers in Putnam Valley, including my husband who's one of them. I'll put that on the table, but I would really like it if some of you developers made a commitment. We have wonderful, wonderful construction workers that live here and work here and you should make a commitment to hiring them.

MR. ZARCONE: If I could just point out one thing, because I know when the wells were dug up here and I understand that depending on what's approved, prior to I think the

applicant was using PF Beale and he's been using Norman now, okay, just as an example.

MS. VILLANOVA: Okay. Are you going to give plugs here or what? I'll give you my card afterwards.

MR. CARANO: John, why don't you reserve the comments to the end and let everybody who signed up speak.

MR. ZARCONE: They are, but I'm just --

MR. CARANO: Well, you can raise questions later on. Board members --

MR. ZARCONE: I'm not raising a question, I'm making a statement, and I have the right to if she's made a statement --

MR. CARANO: Hopefully no one will interrupt you at the end. Let everybody speak --

MR. ZARCONE: Anybody can interrupt all they want.

THE CHAIRMAN: Time out guys.

MR. VILLANOVA: My one last question is: If we're mentioning about these economic impacts, will the economic impacts if they are found to be substantial, will that ultimately

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impact this project? Would there be constraints on it? Would it be lessened if it was found that the economic impacts -- it looks like you're mitigating a lot of the environmental stuff and it's certainly being examined very, very carefully, but the economic stuff is what concerns me. Is it realistic -- would you actually lower the density of a project if it was found to be economically a big burden on the Town? I don't know -- I mean, is there an answer to that or -- Thank you.

MR. YETTER: Thank you.

THE CHAIRMAN: David Gardner.

MR. GARDNER: Actually, a lot of my questions have been already answered.

THE CHAIRMAN: Okay. I'm going to blow this one. Gelosh Lekocevic.

MR. LEKOCEVIC: My name is Gelosh Lekocevic. I live 78 Peekskill Hollow Road, 15 yards from Marsh Hill Road. I don't know what kind of -- that Peekskill Hollow Road I think it's a Park Avenue that Peekskill Hollow Road. (Inaudible) I don't know what to tell

you. How many million people lives on that Peekskill Hollow Road. You can't turn left or right or vehicle or motor vehicle or truck or bus or I don't know -- really, I don't have any roads there except Peekskill Hollow Road. They're so noisy, so busy, morning especially with the buses, trucks. (Inaudible) my property when there's rain. When the rain on my property is all time is wet. Maybe that -- maybe one week, even two weeks the water on my property. I don't know where they came from. So that's my concern here. Plus -- another thing is my concern about the taxes. My house is not big, big house. It's a small old house. That was any concern also. And the biggest concern is the traffic concern, believe me, that Peekskill Hollow Road. It's so noisy. Unbelievable. Thank you.

THE CHAIRMAN: Thank you.

MR. YETTER: Thank you.

THE CHAIRMAN: In terms of people who signed up, that's it folks. Would you like to say something, Dan?

MR. ZARCONE: And who are you?

MR. RICCI: Dan Ricci, as last I recall. I almost said former Board member. I'd love to say that. I can't wait until I say that.

MR. ZARCONE: Where do you live?

MR. RICCI: Putnam Valley. 506 Peekskill Hollow Road in a home built by the first developer in this Town actually, if you want to get down to history.

MR. ZARCONE: There you go.

MR. RICCI: You know, I went up to the site and visited it recently. I was up there with Councilwoman Whetsel and I walked the property and read some of the documents here related to it and there's issues. There's issues, you know, with wetlands. Obviously Marsh Hill Road its a no brainer. Another issue is slope of that road. I was happy to hear from Billy Crowder that the Town adopted that road in 1949. That was 10 years before I was born folks, so I had nothing do with that decision even though it's substandard.

And actually, to remediate that, to move in a direction of fixing that road is a good thing. That's a hairpin turn. I could see

some serious problems occurring there, so that's a plus and I try to look at the pluses and the minuses. That's a plus. The idea that there's a great consideration going into the biodiversity of the environment, of the creatures and the other things that exist on the grounds up there.

In the minus column are again, the cost impact, you know, overall how its it going to effect us. I understood at one point it was four bedrooms. It's been reduced to three bedrooms.

THE CHAIRMAN: No.

MR. RICCI: Is that the discussion that we had --

THE CHAIRMAN: I said that the Town Planner did in his comment letter talk about what would happen if it was reduced.

MR. RICCI: I see. So four bedroom subdivision houses, that sounds like it's just --

THE CHAIRMAN: Four bedrooms, that's what it is.

MR. STEINMETZ: Yes.

MR. RICCI: So I misunderstood that information. So I guess really in the minus column I guess is, you know my fears are cost, overall cost. Second of all, I think Councilwoman Whetsel raised a good question about emergency services. Hopefully part of this process will be meeting with the fire department, the ambulance corps, their concerns, meeting with transportation with schools, concern about the bus. You know, buses in and out of there with kids. We've had issues with that, with our subdivisions and that's always a great concern of ours and we certainly wouldn't adopt a road until, you know, it's up to the standards that we would request and certainly Earl Smith should be part of that process as well.

So again, I'd just like to think that things are working the way they can and should. I guess my biggest concern right now is I'm trying not to drift onto other issues like the moratorium or anything else. I really don't want to talk about those, it's not the form. I'm trying to remain as a

citizen in this discussion so I guess again the cost impact, the overall -- you know, how that is going to affect us, is it going to hit us in the purse, and we are getting closer to that build out number and I guess I might feel a little better if you know, any possible scaling back -- in other words, if we can get to a number -- you know, get to a number where it's not going to -- the overall impact isn't going to hurt us but at the same time you're going to get a reasonable return because I don't think it's fair that you should have to make the sacrifice so that you're not burdened, but we shouldn't have to be burdened either. And this is really what compromise to me is all about, is the idea that there is a middle ground, we can find it and it may take a little bit more work and there's certainly been a lot of work that's already been put into this project, but it's the idea, you know, what Mr. Santucci does here is what he does for a living, but what he does for a living shouldn't hurt the overall taxpayers of this Town and that's really, I guess, the

direction I'm trying to move in; that what he does doesn't hurt the taxpayers and certainly that it wouldn't hurt the environment. And I -- Mr. Barber has addressed some of those issues and I we should be mindful of them.

The whole biodiversity corridor thing is yet to be fully defined. You know, it is in a state of study right now. We're really not at a point, you know -- and it shouldn't be an arbitrary thing. It shouldn't just be where, you know, certain things are taking place. It should be, you know, where is the most critical places in this Town.

I can tell you right now, I'm not a wildlife expert, but I know that there are way too many -- too much wildlife wandering about in this Town right now. You know what I'm saying. They used to all hide in little dark corners and now it's, you know, making itself very well know. So somebody's very confused. I don't think the animals are protesting, I think they're confused.

MR. ZARCONE: They come to live at my house.

MR. RICCI: Whatever, but I mean, there's a real issue here. Something's afoot, something's out of place and that's a concern of mine too. I've been here long enough. John, you've been here long enough. Many of us have been here long enough to know, you know, that things have to at this point at a very close build out number have to be done in a really careful and cautious way and my commitments so long as I'm, you know, serving in any official capacity and after that as a citizen of this Town is going to be for the overall long term welfare of this Town. So this was again -- is an issue that came to mind.

3.16-30

It's at a time right now where tempers are hot. I can look around this room, I recognize most of the faces. I know where most of the point of views stand, but I also know that no matter what happens, when the dust settles we have to be able to live with whatever decisions are made. You know, whatever is -- and I'm a believer in the system. I'm a believer and the men and the

women that I appoint to positions to do the job, and I think that's how the government should be. The government should have faith in the system and the system should give then every reason to have faith in them.

So I mean my concerns, I think, are legitimate. I don't think I'm by myself with that and I think I'm asking really that all consideration be brought specifically with that financial number. Again, we should not be on the receiving end of, you know, something that was done, you know in a commercial way but that came back, you know, to haunt us years and years later. So that's really about all I have to say, and luckily because I'm not sitting up there I don't have to answer any questions.

3.12-8

MR. ZARCONE: Thank God.

THE CHAIRMAN: I think we have to -- you haven't talked yet.

MS. LeBLANC: Right.

THE CHAIRMAN: You want to say something?

MS. LeBLANC: May I?

THE CHAIRMAN: You have to.

MR. ZARCONE: You are?

MS. LEBLANC: My name is Michel LeBlanc, Putnam Valley. I live on Seifert Lane. I have two questions. The first speaker, the gentleman who lives adjacent to the property was talking about the things that he appreciated about the well testing specifically during construction and then two years after construction. My question is: If there's a problem with his water, if there's not enough water, if his well goes dry, if it is polluted, then what happens? Who remediates that?

3.3-16

MR. ZARCONE: I --

MS. LeBLANC: Let me finish. Okay. And I know that did happen on Mill Street -- well, I think it happened on Mill Street -- it did happen on Mill and after a development was put in, people's wells got dry -- went dry and in the construction phase or at some point the people that were building it said we'll put well monitors to make sure that, you know, that the water will be okay. But again, what happened after the well monitor found the

3.3-16

problem? Were the people -- you know, was it the Town's expense that, you know, we had to give them water or repair their wells or dig their wells.

And the second thing is about the impact to the Town on the costs. I know I've heard in the literature about the developers covering impact and I know other communities have done this and I'm sure it's researchable, but I would like to formally ask, because you said that that's what happens, we ask questions and we get an answer, right, to have a comparative study of other towns and how they ask or require the developers to cover any impacts like for the highway department or the school. Okay.

THE CHAIRMAN: Okay.

MS. LeBLANC: Thank you.

THE CHAIRMAN: Okay. If there's nobody else, I want to give other people a chance.

MS. VILLANOVA: Okay.

THE CHAIRMAN: If there are no --

UNIDENTIFIED SPEAKER: Can you answer the question about what happens if --

THE CHAIRMAN: Time out. I don't like to have -- I know that you people may not appreciate this, but I don't like to give answers to people's questions like that without giving some thought and study because anything you say here may sound great on television but it may not be implemented --

MR. ZARCONE: But on the other side of the coin, what she asked can be addressed.

MR. RICCI: -- is a question you can answer.

MR. ZARCONE: Okay. It can be addressed.

MS. LeBLANC: With no cost to the Town, you mean.

MR. ZARCONE: With no cost to the Town, yeah.

3.3.16

MS. LeBLANC: So who paid for it then?

MR. ZARCONE: The developer.

MR. RICCI: The homeowner.

MS. LeBLANC: Who?

MR. ZARCONE: Developer.

MR. RICCI: The homeowner paid on Mill Street.

MR. ZARCONE: No, but that was a

different animal. We're not talking about -- I'm talking about the other project where the well monitoring took place that she talked about, because if the damage done to a neighboring well that was shown through the well monitoring, the developer was responsible to pay for the cost of the well.

MR. STAUDOHAR: The development put money in escrow in that situation.

MR. ZARCONE: Correct, but the ultimate answer is the developer pays for it, not the Town.

MR. ZUTT: That's true only to the extent that (inaudible) imposed the subdivision approval. It is not automatically the case that the developer is responsible.

(Board member discussion.)

MR. ZARCONE: I just want to make that clear.

THE CHAIRMAN: We're not in the same situation in the same area we were back when Strawberry Knolls went in and it's the kind of

thing that needs some research. The issue has been brought up and we need to address the issue in terms of the response and how we address it may depend on a whole bunch of factors.

MS. VILLANOVA: I had a question too. Since these are new houses, I assume they going to come with a warranty, a six year warranty; is that the standard for your homes?

MR. STEINMETZ: That is somewhat outside the realm of a SEQRA hearing. If she's a marketing consultant for us yes, under New York State law the developer's required.

MS. VILLANOVA: Okay. Thank you. The other comment and question was this: This is a follow-up on something that Dan said. I don't think that the Town is under any obligation to ensure that a developer makes a profit when they come into this Town to try to do something.

3.12-8

You know, I know in the context we've heard this about the moratorium and that's not the place, but just in general, if a developer does come in here and tries to do something

like this and there's costs associated with it and they don't get to reap their full profits because of something that is done by our Planning or Zoning Board or our local government, you know, that's a risk that any business takes.

3.12-8

MR. ZARCONE: Just so you know, Patty, I think it was something that -- they acknowledged this on the onset in fact with certain aspects, so you know.

MS. VILLANOVA: Yes. I heard what Dan was saying and I've gotten a sense in listening to Mr. Steinmetz and some of the others that it's almost as though, hey if a developer comes in here and they can't make their full profit, well they can't do it. You know, you make an investment in the stock market, you have to watch your investment, that's all.

MR. ZARCONE: Right.

THE CHAIRMAN: Okay. I think if there are no -- your name and affiliation and address.

MS. JONES: Del Jones, resident Putnam

Valley, 126 Bryant Pond Road. From the discussions here tonight I have two questions.

I think the developer -- representative for the developer had mentioned this improved road would be able to accommodate something up to a UPS truck. I would like to know what accommodations would there be for tractor trailers making moving deliveries, fuel trucks making deliveries in terms of weight; whether that can also be accommodated by this type of road.

Secondly, I notice the white areas that we're calling the area of disturbance for the development and I assume that also has a secondary septic field as part of that --

MR. STEINMETZ: Expansion area.

MS. JONES: -- expansion area. Is there something that has been discussed or forwarded with the health department?

THE CHAIRMAN: The health department is still sticking to their guns about if fill is required, trees come down.

MS. JONES: If what it required?

THE CHAIRMAN: If fill is required on a

septic system, Putnam County Health Department still requires that the entire area including expansion area be cleared so the fill can be put into place.

THE WITNESS: Even if there's--

THE CHAIRMAN: I'm just telling you what --

MR. YETTER: Not if, that's it.

MS. JONES: They're not even looking at an option of having a bond --

MR. YETTER: That's it.

MS. JONES: -- for that because of septic failure --

THE CHAIRMAN: At the present time, no.

MS. JONES: -- or future situation so we still have --

THE CHAIRMAN: I'm just telling you what their policy is as we sit here and speak. Are we unhappy with it? Yes, very much.

MS. JONES: Well, could you ask them --

THE CHAIRMAN: Certainly will.

MS. JONES: -- to consider that issue as a bond versus clear cutting an environmentally sensitive area? Thank you. That's all.

THE CHAIRMAN: Okay. Any more? If not --

MR. YETTER: I'll move to close the public hearing.

UNIDENTIFIED BOARD MEMBER: Move to adjourn. In other words, you're not going to --

THE CHAIRMAN: Move to adjourn. The reason I want to adjourn is very simple. We still have -- because there's still issues that are brought up that are going to require environmental impact studies that aren't closed, namely the emergency access road. I mean the Planning Board has not seen anything in terms of detail engineering studies associated with that or the impacts it might have and we might as well get that done as part of this process; otherwise what we'll have to do is do a supplemental Draft Impact Statement, which I don't think is worth it.

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MR. STEINMETZ: Mr. Chairman, I certainly appreciate your comment. You're right, the details surrounding the emergency access were disclosed tonight in response to discussions

and ongoing discussions that we've had with the board. There is no basis that we see in accordance with SEQRA to keep the public hearing open as a result of that.

You're right, if we can forward and somehow your Board determines that we don't answer the questions --

THE CHAIRMAN: (Indicating.).

MR. STEINMETZ: If I can finish.

THE CHAIRMAN: Okay. Go ahead.

MR. STEINMETZ: If you want to interrupt me and modify the question go right ahead and I'll respond.

THE CHAIRMAN: My understanding, and I'm going to ask Bill Zutt for a verification, this is not just a public hearing on the Draft Environmental Impact Statement. New York State law requires that we return concurrent public hearings on the preliminary plat and the Draft Environmental Impact Statement.

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MR. STEINMETZ: If I can respond, because maybe that's where we missed one another. I perceived that what Gene was doing was making a motion to close the public hearing on the

DEIS. Absolutely we would have no objection if the public hearing on the preliminary subdivision remains open because we're not trying to start the 62 day clock. If you recall, what I believe I said to this Board at a prior month's meeting, we're very well aware that we can't ask you to take action on the preliminary subdivision as you alluded to earlier in accordance with the Sun Beach decision until such time as we've completed the SEQRA process. All we're trying to do at this point in time is to complete the SEQRA process, to proceed with the SEQRA process.

Right now we've conducted a public hearing. We've had seven, eight, nine comments in a rather unique fashion, three of those comments came from Town Board officials which is certainly a unique thing to have the active involvement of three of your Town Board members at a SEQRA public hearing. Nonetheless, they were here, they spoke, and their comments will have to be addressed like everyone else's.

There's no reason however, in light of a

subdivision design issue such as the proposed emergency access, to keep the DEIS hearing open. You've got 20 days from the closure of the public hearing for further written comments which I'm sure your Board is going to provide for. Let the applicant proceed with the preparation of the responses in the FEIS.

As you well know, Mr. Chairman, we're going to be here for a considerable period of time working with your Board on --

THE CHAIRMAN: What that means is that you're willing to, if we close the DEIS on what is before us, to start a supplemental impact statement relative to issues surrounding the emergency access.

MR. STEINMETZ: You would only be able to ask the applicant to prepare a supplemental environmental impact statement if in accordance with the SEQRA regulations, you determine that there was a new significant environmental impact that hadn't otherwise been addressed in the document.

THE CHAIRMAN: It's obvious.

MR. STEINMETZ: That issue is clearly

going to be addressed, discussed and presented in the FEIS. There's nothing unique about that. It's not unusual to get to this stage in the review process, have a Board like yours make a recommendation to us, have the applicant incorporate it into the design of the project and we're going to have to deal with it.

Our team is very well aware that we're going to have to look at the storm water impacts associated with the emergency access, the visual issues associated with the emergency access, the trees that are going to come down in connection with the emergency access, any wetland impact associated with it; it's all going to be address in the FEIS. If you don't feel we've adequately addressed it in the FEIS, then I'm sure we're going to have this discussion again.

THE CHAIRMAN: I need to ask our attorney.

MR. ZUTT: First of all, I'm assuming now that this has become the principal application. This is not an alternative, this

is the principal application; this layout with the emergency access route?

MR. STEINMETZ: I wasn't sure if you were asking me or you're just telling me it's your assumption.

MR. ZUTT: Well, either way it's a question.

MR. STEINMETZ: Okay. Yes, it is, Bill.

MR. ZUTT: So that's now been the principal proposal before the Board, it would appear since the Board has not seen this before this evening, nor have the public nor have the consultants, at least in any formal sense, it seems to me that the Chairman is suggesting that the public hearing be posted so that review can occur, makes perfect practical sense, and it seems to me that if this is now the principal proposal, which you've said it is, that -- failing that, that the appropriate next step is a supplemental impact statement or maybe, and I'll go back and check the regs myself and be sure that this does or doesn't fit in one of those categories, but as a practical matter, it

seems to be beneficial to you, to the Board, to the consultant and to the public to simply postpone the hearing so the details of this could be studied, and to the extent any supplemental material in your EIS is needed, then it could be incorporated.

There may be environmental impacts associated with this proposed land disturbance that haven't yet been explored. There may be operational aspects of this that may be discussed in EIS in terms of ownership, access, maintenance and use, all of which are appropriate for inclusion, seems to me, in the EIS -- the DEIS.

MR. STEINMETZ: I would agree with you if the modification that was before the Board was something new that our development team had come up because we thought we wanted or needed. For example, if we came before you tonight and added a 25th or 26th new lot and said we'll deal with the impacts of that in the FEIS, I think Mr. Zutt's comment would be entirely appropriate.

However, what we've have done is we've

presented to you tonight a mitigation measure specifically designed to address an issue of concern that you folks articulated. You folks articulated the concern about the length of the road. We told you in our opinion we complied with the subdivision regulations of the Town because there is no mandate in the Town law about the length of a road. There is a statement of what is required, quote, in general, quoting from your subdivision regulations. So what you've got in front of you tonight, with all due respect, Bill, is a mitigation proposal that was asked for, in effect, by the Town. To now penalize the applicant in the SEQRA review precisely for doing precisely what SEQRA requires, which is mitigate after identifying an environmental impact, makes no sense.

If however, the mitigation issue that we suggested promised all kinds of new environmental concerns that Josh and Keith can't deal with in the FEIS, then we know we're going to have to come back with some further study, but I mean, maybe the question

is ask John, ask Todd if they at this point -- proposing a 16 foot minor emergency access route which you guys have asked us to explore is somehow going to turn this project upside down. I don't think your professionals are going to tell you anything different from what our professionals have told us and that is, this is (inaudible), it's achievable and any potential impact can be mitigated.

The issue that you guys have to struggle with is do we really want emergency access or not? You asked us to explore an alternative to the 5,100 linear feet of roadway which --

THE CHAIRMAN: And by the way, that was a recommendation made by the Town Planner in October of 2004.

MR. STEINMETZ: And I'm not going to debate that.

MR. ZARCONE: Still, it was taken to a vote with the Board and the Board agreed to accept it without the emergency access and if we go back over the past history of the subdivision --

THE CHAIRMAN: No. I'm just talking

about --

MR. ZARCONE: Let me finish please.

THE CHAIRMAN: I'm not trying to --

MR. ZARCONE: Let me finish, please.

MR. CHAIRMAN: I'm not trying to --

MR. ZARCONE: Let me finish. I have to make this statement. If we can go over the prior subdivisions and we look at them, you had (inaudible), Putnam Chase, Strawberry Knolls, neither one of those three right there -- Timberline, Trading Post, none of them had emergency road accesses.

MR. CARANO: How long were those roads?

MR. ZARCONE: It was one road in and one road out. They were 12 -- over 1,200 feet.

MR. CARANO: But not 5,400 feet.

MR. ZARCONE: 5,400 feet is calculated into Peekskill Hollow Road when the code does not specifically state --

MR. CARANO: These examples you gave, how long were those roads --

(Board member discussion.)

THE CHAIRMAN: Hold on, guys, you're not addressing the issue. The issue is whether or not to close the public hearing on the DEIS and what impact that has. Operationally, I do understand your point. I'm just thinking operationally at some point you do need to have, whether you put it in a FEIS that has to be circulated --

MR. STEINMETZ: Which it will.

THE CHAIRMAN: Which it will. I guess from your perspective what are you gaining by our closing the DEIS at this stage since you've got pending activity in terms of wetland that have not been incorporated, you've got this which hasn't been incorporated, you've got the biodiversity studies which haven't yet been incorporated; what is -- what do you gain by our closing the public hearing tonight instead of leaving it open?

MR. STEINMETZ: That's a fair question. Mr. Santucci's development team has told him that they are prepared to move forward with the preparation of the FEIS. As far as the

biodiversity and wetlands, we're not going to go back on an agreement that we have previously reached with you. We agreed that the biodiversity would be folded into the FEIS. That was discussed with your Board and agreed to at that meeting. We agreed that Mr. Barber, having gotten involved in the project towards the middle, would have an opportunity to go back and revisit the Town's prior wetlands consultant delineations. Remember, the wetlands were delineated by your Town consultant. We have relied upon that and we've now been asked to work with Mr. Barber to see if there are any changes. We've already agreed to do that and as you heard, Bruce is going to be out there this week with your own consultant.

So the answer to your question; what do we get? We get the opportunity to proceed with the Final Environmental Impact Statement. Our team is ready to do so. We're anxious to move forward and address the meaningful comments that we've gotten tonight. That's part of the open and deliberate process that

SEQRA mandates. If you feel that an FEIS is incomplete and doesn't address the questions that have come up, we're going to hear that from you. If you're concerned about the impact associated with the mitigation measure of the emergency access, we're going to hear about that in the finding statement. I'm not going to get to the finding statement and --

THE CHAIRMAN: In other words, you guys aren't (inaudible) anything that comes in in a fixed period of time. You want us to close out so the public comment can also come in so you can start preparing the FEIS.

MR. STEINMETZ: Discussing that.

THE CHAIRMAN: And you understand that there might be some issues relative to.

MR. SANTUCCI: We'll deal with it.

THE CHAIRMAN: Okay.

MR. STEINMETZ: Absolutely and we understand that.

MR. ZUTT: It's easy to say let's put it in the FEIS. My understanding of SEQRA is that the purpose of the FEIS is to provide a document that's responsive to public comment

and other comment on the DEIS and at this point in time you've no comment on this particular aspect of this plan which seems to be a very key component of the plan and David, it's certainly not my purpose to penalize, as you say, the developer in suggesting that the public hearing be postponed. I just asked the Town engineer if he had seen any of the design details of this emergency access road and his answer was no.

Now ordinarily, that's the kind of issue that the consultants would say I've seen it, it's been adequately described in the DEIS and ready for prime time, ready for public comment. We haven't even gotten to that point and it seems like a fairly important consideration with respect to this project. That's the reason I suggested that the public hearing be postponed, so that this could be made part of the Board's review and distribution so when you do get to the FEIS you've already substantive comment, substantive review on that aspect of the project.

MR. STEINMETZ: Let me just start with an analogy that I think Bill has witnessed in other communities because I know he's at most of the planning board meetings that I attend elsewhere, certainly in one community in particular. It is not unusual for there to arise at a DEIS and preliminary subdivision layout joint public hearing, a comment either from the Board, from the professional consultants or from the members of the public to actually make a change to a development. It is very normal in my experience, and I can't imagine you haven't seen it Bill, whereas part of the FEIS for the first time there is a new modified alternative. It's studied in the FEIS in response to the process that's been ongoing. Again, it's incomplete, it's insufficient. There's something to be an SEIS, the document won't be accepted, a finding statement won't be adopted. By here, in effect we're one step ahead of that. We're one step better then that. We actually came in to tonight's meeting though as not to change the DEIS with a recommendation for an

emergency access route. We didn't come here tonight with nothing here, listened to your Board tell us, you guys, you need an emergency access route here. You need to look into another alternative configuration and then for the first time we put it in front of you in the FEIS. No, we came tonight, we illustrated it graphically. We presented -- Keith (inaudible) your other plan. He presented both the enlarged version and we gave everybody, your consultants, your Board, the public a chance to comment on it. We know we have got to study it. I haven't heard anyone tonight say gee, Mr. Santucci, this looks like a really bad idea, this is going to work.

MR. DAVIS: Can I say something?

THE CHAIRMAN: Right now we're talking procedural issues that are straight forward not -- these aren't public.

MR. YETTER: There's actually a motion on the floor.

THE CHAIRMAN: Was there a second to the motion?

MR. ZARCONE: I'll second it.

UNIDENTIFIED BOARD MEMBER: Now we can discuss it.

MR. YETTER: I just wanted to add I thought it was a very good recommendation. (Inaudible) planner if there is any significant issues even at eyesight without detailed information that might lead you to believe that there might be significant impacts from this proposed change versus what's already been put on the table.

MR. JOHANNESSEN: I don't have a problem with identifying the impacts, mitigating them in the FEIS. My concern is the public had an opportunity to understand that that was an option until now. David's right, the FEIS can be used as a tool to identify impacts and mitigate appropriately.

THE CHAIRMAN: It will be subject to public hearing.

MR. STEINMETZ: Thank you.

(Board member discussion.)

MR. YETTER: I want to hear Todd's comment.

MR. ATKINSON: Probably about three weeks ago the idea of an access road, 16 foot, we also mentioned looking at 22 foot. He looked at it, brought it out to us. A formal review was not completed. That's what I was referring to when Bill brought it up, but I have really no issues with it either like Jan does.

UNIDENTIFIED SPEAKER: It also depends on what the Board's looking for. You said you did both a 16 and a 22 foot design. Is that showing a 16 right now or the 22?

MR. STAUDOHAR: That's the 16.

MR. ATKINSON: What's the grading aspect of the 22?

MR. STAUDOHAR: I'm just saying, this 22 requires just a little more grading up in this area and --

MR. ATKINSON: Any retaining wall?

MR. STAUDOHAR: No.

MR. ATKINSON: No. And the grade is 15 percent, correct?

MR. STAUDOHAR: Not the whole way, like a section here to here and this section here

(indicating).

MR. ZARCONE: But the other thing, we still as a Board haven't said do we want to maintain and have them put in this road or keep it the original way as what the Board studied. That's another thing.

MR. ZUTT: Let me just add. I'm not disagreeing that you can manage most of this exactly as David Steinmetz has described in the FEIS. My principal concern is primarily what Jan said, which is that this is being presented tonight for the first time in a public setting, and it would seem that the public ought to be afforded an opportunity to comment with respect to it after seeing the details on it. It hasn't been submitted before tonight.

MR. ZARCONE: There are also items that could be addressed in the FEIS.

THE CHAIRMAN: There are also, by the way, just so the public is aware, obviously the Planning Board is going to have to have a period where we look at the details and (inaudible) associated with this and that will

in fact be in a public setting, and so the public will have an opportunity to see what impacts, if any, there are that are not --

UNIDENTIFIED SPEAKER: Is there no room for comment anymore from the public?

THE CHAIRMAN: You can send written comments. What we're talking about now is a procedural issue.

UNIDENTIFIED SPEAKER: Will there be any more opportunity for that?

THE CHAIRMAN: Absolutely.

MR. ZARCONE: That's where the FEIS comes in.

THE CHAIRMAN: Just for everybody's edification, even after this is closed and we have a motion on the floor, it stays in effect, open for written comments for --

MR. ZARCONE: Ten days.

MR. STEINMETZ: 20 days. Is it 10 or 20?

THE WITNESS: Who are the written comments sent to?

THE CHAIRMAN: Planning Board.

MR. ZARCONE: And then they're sent to the --

MR. STEINMETZ: It's a minimum of 10 --

MR. JOHANNESSEN: The notice of completion identified that there be a 14 day written comment period.

THE CHAIRMAN: Okay. So 14 days is what is in the notice.

MR. JOHANNESSEN: I didn't know if there would be any pattern for closing the public hearing on the DEIS and keeping the preliminary plat open. I don't know if that's something that's typically --

MR. ZUTT: Yeah. You have to. You can't close on the preliminary plat until you get the FEIS. So that's got to be closed.

MR. JOHANNESSEN: That's generally kept open and one's closed and the other one's --

MR. STEINMETZ: You're supposed to keep it open.

MR. ZARCONE: So --

MR. ZUTT: I have one question and this is not on the motion specifically. Who owns the bridge over the Hollow Brook?

MR. ZARCONE: Which bridge?

MR. ZUTT: It's the one that would be

used in connection with the emergency access road.

MR. STEINMETZ: The property owner who would be granting the emergency access easement.

MR. ZUTT: Valencia (ph.). So it's not publicly owned --

MR. ZARCONE: No.

MR. JOHANNESSEN: This might be (inaudible) conceptual basis that they're using an existing traveled way and expanding it as Keith is suggesting, you know, that may be a desirable alternative for a secondary access. However, it does entail disturbance apparently of the Peekskill Hollow Brook buffer as well as the change or modification to the crossing perhaps. We don't know the condition of the bridge and will it need some repair work to accommodate this new alternative route.

So not seeing that and not being able to judge the impacts, it's difficult to give it a seal of approval, but from a conceptual basis I don't see an issue because we're using the

2-2

existing area. I just don't have enough information to share with the Planning Board with respect to impact.

MR. STEINMETZ: We're going to take you out there this week.

MR. BARBER: I figure that will cover that.

MR. ZARCONE: That's why --

THE CHAIRMAN: Any more discussion relative -- from planning board members relative to the motion? If not --

MR. YETTER: Call the question, Mr. Chairman.

MR. ZARCONE: Do a roll call.

SECRETARY: Tom Carano.

MR. CARANO: Nay.

SECRETARY: Eugene Yetter.

MR. YETTER: Aye.

SECRETARY: Richard Tully.

MR. TULLY: Aye.

SECRETARY: John Zarcone.

MR. ZARCONE: Aye.

SECRETARY: Billy Crowder.

THE CHAIRMAN: Aye.

MR. STEINMETZ: Thank you, members of the Board. We look forward to seeing you on continued discussions.

THE CHAIRMAN: The motion was to close the public hearing associated with the DEIS. I need a motion to adjourn the public hearing on the preliminary plat and associated documents.

MR. ZARCONE: I will make that motion.

THE CHAIRMAN: I have that motion.

MR. YETTER: I second for discussion. Mr. Zutt, can we do that before we grant a sketch?

MR. ZUTT: I'm sorry.

MR. YETTER: Can we do that before we grant a sketch.

MR. ZUTT: Yes, you can.

MR. YETTER: Okay. Thank you.

(Continued on next page.)

MR. ZARCONE: So we've got a motion --

MR. YETTER: Call the question.

THE CHAIRMAN: Okay. All in favor raise your hand.

(All members raise their hands.)

THE CHAIRMAN: That's it. Thank you once again.

(Time noted: 7:30 p.m.)

C E R T I F I C A T I O N

STATE OF NEW YORK)
) ss.
COUNTY OF WESTCHESTER)

I, MARCI LOREN DUSTIN, Court Reporter and Notary Public within and for the County of Westchester, State of New York, do hereby certify:

That I reported the proceedings that are hereinbefore set forth, and that such transcript is a true and accurate record of said proceedings.

AND, I further certify that I am not related to any of the parties to this action by blood or marriage, and that I am in no way interested in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand.

MARCI LOREN DUSTIN

Court Reporter

Appendix C

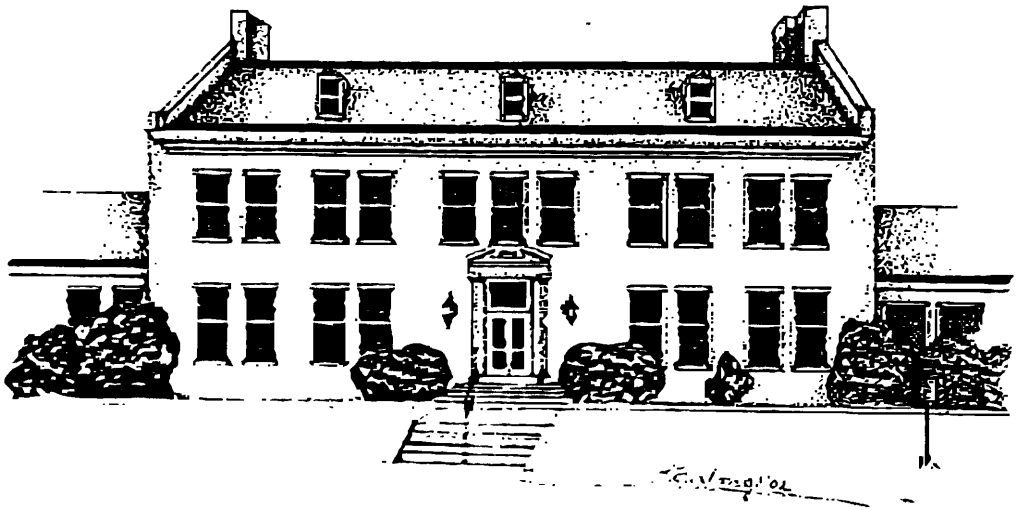
Putnam Valley Central School District
2006-2007 Proposed Budget

FINAL

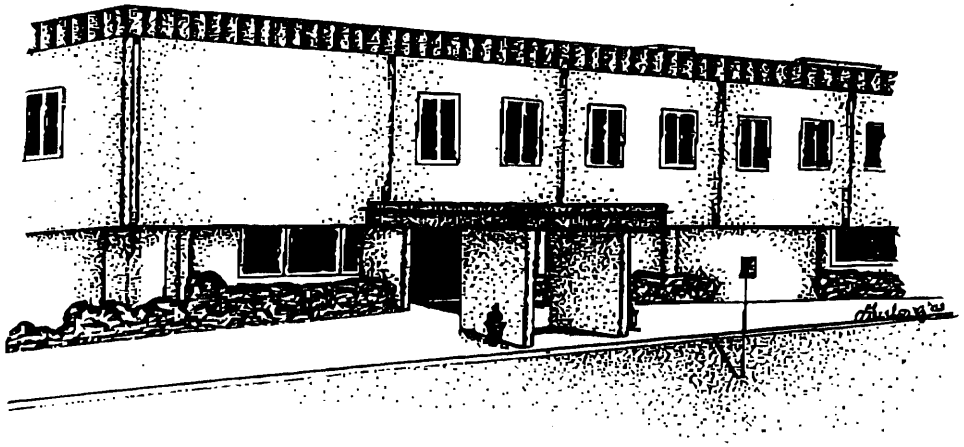
June 20, 2006

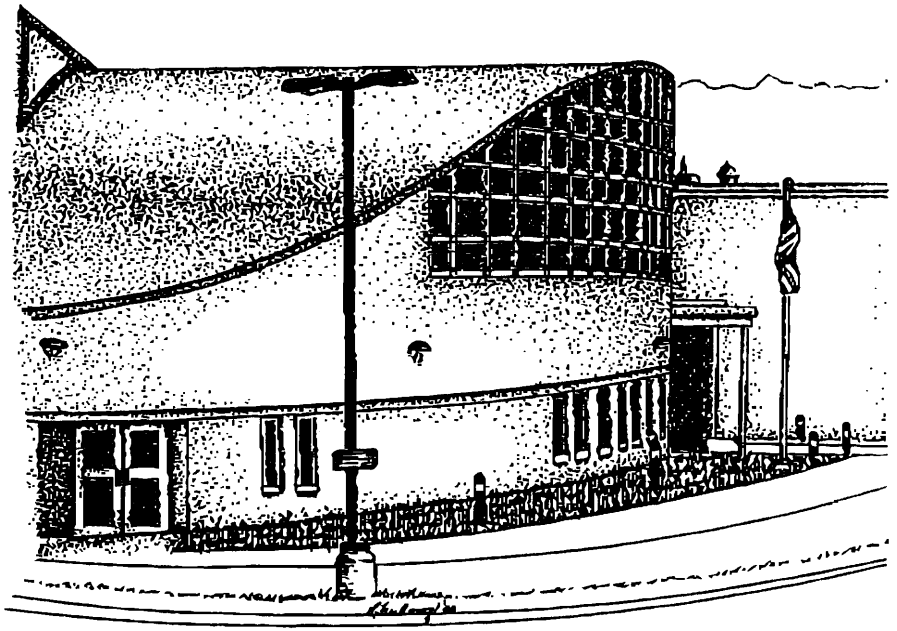
FINAL

Nov-27-2006 02:52pm From-



Putnam Valley Central Schools
2006-07 Proposed Budget





T-709 P.001 F-870

REVENUES	BUDGET 2005-06	BUDGET Administration 2004-05	BUDGET Instruction 2004-05	BUDGET Capital 2004-05	PROPOSED 2006-07	PROPOSED Administration 2006-07	PROPOSED Instruction 2006-07	PROPOSED Capital 2006-07	BUDGET TO BUDGET CHANGES	Percent Differences
Appropriated Fund Balance	150,000				250,000				100,000	66.67%
Real Property Tax Levy Less STAR	26,789,470				26,679,140				-110,330	-0.41%
School Tax Reimbursement (STAR)	4,137,132				4,137,132					
Local Non-Tax Sources	310,000				491,502				181,502	58.59%
State Sources	5,850,254				7,314,156				1,463,902	25.02%
Total	$37,236,856				$38,871,930				1,635,074	4.39%

EXPENDITURES	BUDGET 2005-06	BUDGET Administration 2004-05	BUDGET Instruction 2004-05	BUDGET Capital 2004-05	PROPOSED 2006-07	PROPOSED Administration 2006-07	PROPOSED Instruction 2006-07	PROPOSED Capital 2006-07	BUDGET TO BUDGET CHANGES	Percent Differences
GENERAL SUPPORT										
Board of Education	25,250	25,250	0	0	27,000	27,000	0	0	1,750	6.93%
Central Administration	371,338	371,338	0	0	373,288	373,288	0	0	1,950	0.53%
Finance	429,700	429,700	0	0	468,776	468,776	0	0	39,076	9.09%
Staff	225,811	225,811	0	0	226,973	226,973	0	0	1,162	0.51%
Central Services	2,178,731	0	0	2,178,731	2,276,898	0	0	2,276,898	98,167	4.51%
Special Items	380,267	355,267	0	25,000	408,654	383,654	0	25,000	28,387	7.47%
	3,611,097	1,407,366	0	2,203,731	3,781,589	1,479,691	0	2,301,898	170,492	4.72%
INSTRUCTION										
Instructional Improvement	1,635,949	1,473,673	162,276	0	1,686,956	1,531,261	155,695	0	51,007	3.12%
Teaching: Regular School	11,273,130	0	11,273,130	0	11,447,546	0	11,447,546	0	174,416	1.55%
Special Apportionment Programs	5,874,279	158,054	5,716,225	0	6,063,522	161,615	5,901,907	0	189,243	3.22%
Instructional Media	1,309,874	0	1,309,874	0	1,234,458	0	1,234,458	0	-75,416	-5.76%
Pupil Services	2,115,586	79,984	2,035,602	0	2,091,543	81,020	2,010,523	0	-24,043	-1.14%
	22,208,818	1,711,711	20,497,107	0	22,524,025	1,773,896	20,750,129	0	315,207	1.42%
TRANSPORTATION										
Pupil Transportation	2,062,882	0	2,062,882	0	2,201,799	0	2,201,799	0	138,917	6.73%
COMMUNITY SERVICES										
Community Services	0	0	0	0	0	0	0	0		
UNDISTRIBUTED										
Employee Benefits	6,833,561	571,364	5,908,572	353,625	7,398,175	631,925	6,377,654	388,596	564,614	8.26%
Debt Service	2,520,498	0	0	2,520,498	2,966,342	0	0	2,966,342	445,844	17.69%
Interfund Transfers	0	0	0	0	0	0	0	0		
	9,354,059	571,364	5,908,572	2,874,123	10,364,517	631,925	6,377,654	3,354,938	1,010,458	10.80%
TOTAL: GENERAL FUND	$37,236,856	$3,690,441	$28,468,561	$5,077,854	$38,871,930	$3,885,512	$29,329,582	$5,656,836	1,635,074	4.39%
Percentage of Budget		9.91%	76.45%	13.64%		10.00%	75.45%	14.55%		

Nov-27-2006 02:55pm From-
T-709 P.030/030 F-870

Appendix D

Town of Putnam Valley Preliminary
2007 Budget

			TOWN OF PUTNAM VALLEY											
		2007	PRELIMINARY		10/31/06									
					2007	2006								
			LESS	LESS	AMOUNT	AMOUNT	%	2007	2006	DIFF	%CHG	2007	2006	
		APPROP	EST.	APPROPRI	RAISED	RAISED	CHANGE	AV	AV	AV	AV	TAX RATE	TAX RATE	
FUND			REVENUE	FUND BAL	BY TAXES	BY TAXES						PER 1000	PER 1000	%CHANGE
A	TOWN GENERAL	4,975,469	2,320,500	700,000	1,954,969	1,620,155	20.67	1929612785	1808971118	120641667	6.67	1.013141	0.8956	13.12%
DA	HIGHWAY	3,711,257	457,500		3,253,757	2,673,220	21.72	1929612785	1808971118	120641667	6.67	1.686223	1.4778	14.11%
SD01	PUTNAM CHASE	2,061	100	0	1,961	1,996	-1.75	20	20			98.050000	99.8000	-1.75%
SD02	STRAWBERRY KNOLLS	2,061	100		1,961	1,996	-1.75	15	15			130.733333	133.0667	-1.75%
SF01	FIRE PROTECTION	750,000		0	750,000	664,900	12.80	1979506401	1840231907	139274494	7.57	0.378882	0.3858	-1.78%
SM1	LAKE PEEKSKILL	767808	23,000	26,700	718,108	696,825	3.05	251219583	221775129	29444454	13.28	2.858487	3.142034	-9.02%
SM02	BROOKDALE GDNS	12957	350	0	12,607	13,279	-5.06	6582299	5839899	742400	12.71	1.915288	2.273841	-15.77%
SM03	HILLTOP	40,743	750	1,200	38,793	37,276	4.07	21384630	20059830	1324800	6.60	1.814060	1.858241	-2.38%
SM04	ABELE	47,499	1000	1,000	45,499	45,070	0.95	22426971	20931071	1495900	7.15	2.028763	2.153258	-5.78%
SM05	LOOKOUT	56,947	1,100	0	55,847	54,758	1.99	44033976	41182676	2851300	6.92	1.268271	1.329637	-4.62%
SM06	WILDWOOD	44,572	2,200	0	42,372	41,860	1.22	25063248	23166998	1896250	8.19	1.690603	1.806881	-6.44%
SM07	NORTHVIEW	7,752	250	0	7,502	7,275	3.12	6896042	6279642	616400	9.82	1.087870	1.158506	-6.10%
SM08	ROARING BROOK	173,449	5,250	2,500	165,699	164,565	0.69	141390713	131664313	9726400	7.39	1.171923	1.249883	-6.24%
SM09	GLENMAR	31,939	900	2,500	28,539	28,640	-0.35	7900500	7429200	471300	6.34	3.612303	3.855058	-6.30%
SM10	BARGER POND	10,207	250	500	9,457	9,425	0.34	26108624	24960820	1147804	4.60	0.362217	0.377592	-4.07%
SM11	OSCAWANA	60,635	8,000	0	52,635	52,539	0.18	278649498	269974048	8675450	3.21	0.188893	0.197546	-4.38%
	TIER 1A	0			0			7717255	7209355	507900	7.05		0.101229	
	TIER 1	0			0			170315967	158816867	11499100	7.24		0.134972	
	TIER 2	0			0			24015639	22630989	1384650	6.12		0.202458	
	TIER 3	0			0			81316837	76600637	4716200	6.16		0.33743	
SM12	PUTNAM ACRES	2119	75		2,044	2057	-0.63	25508600	24004800	1503800	6.26	0.080130	0.085691	-6.49%
SP20	CONTINENTAL VILL	13709			13,709	13709	0.00	31689562	29948860				0.457747	
SS02	SEWER DISTRICT	121430	3500		117,930	115915	1.74							
SW01	MILL PONDS	55552	40250		15,302	14335	6.75	41	41			373.219512	349.63	6.75%
	AND TTL													

Appendix E

Revised Drainage District Engineer's Report

EMERALD RIDGE DRAINAGE DISTRICT

ENGINEER'S REPORT

EMERALD RIDGE SUBDIVISION

TOWN OF PUTNAM VALLEY, PUTNAM COUNTY

DECEMBER 09, 2005
REVISED NOVEMBER 17, 2006

GENERAL

The proposed Emerald Ridge Drainage District will consist of fourteen single family residential lots (lots 1-14) as described on the Subdivision Plat known as "Emerald Ridge", which plat is to be filed at the Putnam County Clerk's Office, Division of Land Records.

The Emerald Ridge Drainage District shall be established prior to the filing of the subdivision plat and shall be as approved by the own of Putnam Valley Town Board. All lots within the Emerald Ridge Subdivision will be included in the District. A tax will be levied on each lot to be used by the Town for the maintenance of the stormwater faclities.

The Emerald Ridge Subdivision consists of 1,875 linear foot of proposed road way and 2,025 linear feet of the existing Marsh Hill Road. The new road will be dedicated to the Town of Putnam Valley and upon successful construction will become a public road owned by the Town. As part of the road construction, a drainage infrastructure is required to collect and convey stormwater runoff. The drainage infrastructure discharges to three separate stormwater quality basins prior to exiting to natural drainage ways on the site proper or conveyed off site. The drainage improvements within the proposed road right of way will be dedicated to the Town as part of the road dedication and will be in the ownership of the Town.

For drainage structures (pipes, catch basins, water quality basins, etc.) outside of the public right of way, easements are provided for the benefit of the Town of Putnam Valley and these easements shall also be dedicated to the Town. The easements are described as follows:

Lot 1 drainage easement in favor of the Town for the location, maintenance and repair of the micro-pool extended detention basin and appurtenances.

Lot 5 drainage easement in favor of the Town for the location, maintenance and repair of the micro-pool extended detention basin and appurtenances.

The third stormwater basin is located inside the loop of the proposed road and is located within the right of way proposed to be dedicated to the Town of Putnam Valley.

All stormwater leaving any portion of the site have eventual flows to the Peekskill Hollow Brook that then discharges into the Hudson River. Reference is made to the map prepared by this office entitled "District Map, Plan and Description for Emerald Ridge Drainage District" dated December 09, 2005 and revised November 17, 2006.

STORMWATER BASINS

As part of the drainage infrastructure, three water quality detention basins are proposed to collect the stormwater runoff associated with the development improvements. The basins are single stage micro-pool extended detention basins that will provide both water quality treatment as well as increase the detention time of the stormwater. All of the basins will allow for the removal of stormwater pollutants. The pollutants will be removed primarily through settling and infiltration into the surrounding soils. The settling will enable pollutants such as suspended sediments, phosphorous, nitrogen, organic matter, and trace metals to settle out at varying rates. Additional removal rates may be achieved with the implementation of various plant types planted within the basin.

The micro-pool extended detention basins will have a control structure that has the low level outlet above the basin bottom elevation. All stormwater up to these levels will discharge through an underdrain. The underdrains will be 30" deep gravel trenches with a 6" perforated pipe. The drains will discharge at the basin control structure discharge points.

This design will ensure that during storm events, the runoff from the roads will be collected in the basins and detained for a period of up to 24 hours.

The subdivision plans propose an integrated landscaping plan that will provide not only an aesthetic appearance of the basins from the roadways and individual lots, but will also provide plantings designed for nutrient uptake that will aid in the pollutant removal process.

Where control structures are provided for the outflow basins, protection from clogging will be required. This will be accomplished with the use of steel grates being placed in front of the structures, forming a steel mesh box, which will increase the surface area for water to enter the structure. In the event the low level openings get clogged, each structure will have a high flow weir which will accommodate the flows. Additionally, if there is a failure with a control structure, the pond will fill up to the level of the emergency weir, at which point stormwater will flow over the berm to a designated discharge point.

STORMWATER CONVEYANCE

As a result of the reduced subdivision scope down to fourteen lots and the desire to maintain the rural character of the local community, the road design has been revised. The new road will be 18 feet wide with two foot wide grassed shoulders and each side of the road will have a rip rap swale/infiltration trench for the full length. There will be only several pairs of catch basins and pipe conveyances. All stormwater will be conveyed to the swales, which in turn will convey stormwater to the stormwater basins or to level spreaders for dispersal into wooded areas or existing drainage ways..

MAINTENANCE PROGRAM

While the stormwater structures and appurtenances have been designed to accommodate anticipated stormwater flows, maintenance of these structures is required to ensure that they function as designed and to ensure longevity. The maintenance schedule for the proposed stormwater infrastructure shall be implemented by the Town of Putnam Valley with either Town employees or subcontracted to a person or corporation. Following is a suggested stormwater maintenance plan for the Emerald Ridge Drainage District:

1. The catch basin grates and sumps shall be checked four times per year (once every three months). The grates should be cleaned free of any debris and the sumps cleaned out of silt and debris at this time.

2. The extended detention basin control structures shall be checked four times per year (once every three months). The structure inlets should be cleaned of any debris, silt removed from the front of the control structure inlets, and the interior and sump should be cleaned of debris and silt at this time.

3. The extended detention basin shall be checked four times per year (once every three months). The underdrains shall be cleaned free and clear of debris and the basin bottom cleaned of debris and silt at this time. The interior and exterior side slopes should be checked for any soil breach or failure and repaired as necessary. All plantings should be checked and replaced if found to be dead or in a dying condition at this time.

4. Each pipe outfall shall be checked four times per year (once every three months). The pipe end sections, rip rap dissipation pads, and level spreaders shall be cleaned of any debris and silt build up and the dissipation pads shall be checked for any breach or erosion down slope. Any breach in the pad where water would concentrate shall be replaced with stone to ensure proper functioning.

5. In the event major storm events are forecast, i.e. greater than 2" rainfall / 24 hours, the above inspections should be performed and any necessary repairs or clean up shall be performed to ensure the stormwater management system will function properly during such a storm. Similarly, after a major storm event, the same inspections and necessary repairs, replacement or clean up shall be performed so the system will be in proper condition prior to the next storm event.

6. The areas in and around both stormwater quality basins shall be kept in a neat and free of debris with the landscape plantings kept in a vigorous growing fashion so their appearances do not become unsightly.

7. All drainage easement areas shall be checked four times per year (once every three months). These areas shall be kept clear of any obstructions (fallen trees, logs, personal property, etc.) and any plant growth other than grass or landscape items shall be removed or cut down at this time.

8. The road swales shall be checked four times per year (once every three months) and any obstructions (debris, branches, leaf piles, etc.) should be removed to ensure stormwater conveyance.

PREPARED BY:

Cronin Engineering, P.E., P.C.
2 John Walsh Blvd.
Peekskill, NY 10566
914.736.3664

Appendix F

Revised Rock Removal and Blasting Program

EMERALD RIDGE

Rock Removal, Blasting and Trucking Program

This blasting mitigation plan identifies the procedures involved for the proper removal of rock, potential blasting protocols and trucking routes to ensure all work is performed in an environmentally sensitive way. The Emerald Ridge subdivision has been modified since the time of the DEIS submission and now proposes only 14 lots (1 existing house to remain and 13 new home sites) and a reduced road infrastructure. As a result of the significant reduction in the project scope, there is only one identified blast site, located on the loop section of the proposed road.

The rock removal and blasting program presented herein is a guide for the removal of ledge rock and bedrock from those areas of the proposed development where rock is believed to interfere with the construction. The intent of this program is to enable the applicant to safely, systematically, and environmentally accomplish the removal of the rock to prepare the site for the construction of the road and infrastructure as well as the individual home sites, if any. The rock removal for this project is required only to complete the proposed development and is not a vehicle for the production of material items for sale or use elsewhere.

Rock removal may be required for the construction of a portion of the road and infrastructure. This is primarily based on numerous site inspections of the property, extensive exploratory deep test hole borings conducted for the placement of separate sewage treatment systems, survey stakeout of the road and lot corners and exploratory excavations in those areas deemed to have potential for rock removal. Based on these, a map has been prepared indicating the potential blast zone and is presented as Figure 1. The blast zone location for the road construction is where the proposed cut is generally greater than four feet deep and is identified as containing rock at or near the surface. Areas of cut not included in the potential blast zones are believed to contain deep soil profiles based on the deep test hole borings, visual observations and topography.

It is believed that rock removal will be required for the construction of a portion of the proposed roadway only. This location can also be seen on Figure 1.

Rock removal does necessarily mean blasting. It is not the intent of the developer to blast rock to achieve the desired grade. Blasting is costly with potential liability. In addition, the lots are large enough such that the developer may shift the location of the house slightly to avoid rock, if encountered, to avoid removing rock and increasing costs. The developer will also attempt other, less intrusive methods to remove the rock including the use of a large excavator to rip or pull the rock or the use of a hydraulic ram hoe (hammer). These two methods will be primarily used to exhaustion to extricate the rock from the ground and if these methods prove ineffective, then blasting will be utilized as the last option. The developer will utilize the most efficient and cost effective method to remove the rock, with blasting being the last resort.

Potential Blast Zones

The area identified as a potential blast site generally consists of glacial till soils over crystalline metamorphic bedrock consisting mainly of amphilobite and gneiss (Fisher et al, 1970). The blast site has an overburden of the glacial till mixed with large boulders overlying the bedrock and some areas the bedrock crops out at the surface.

The potential blast site is generally located around the road loop. This area is a considerable distance from any existing structures as evidences by the table below. The potential blast zone has been labeled as blast zone 1

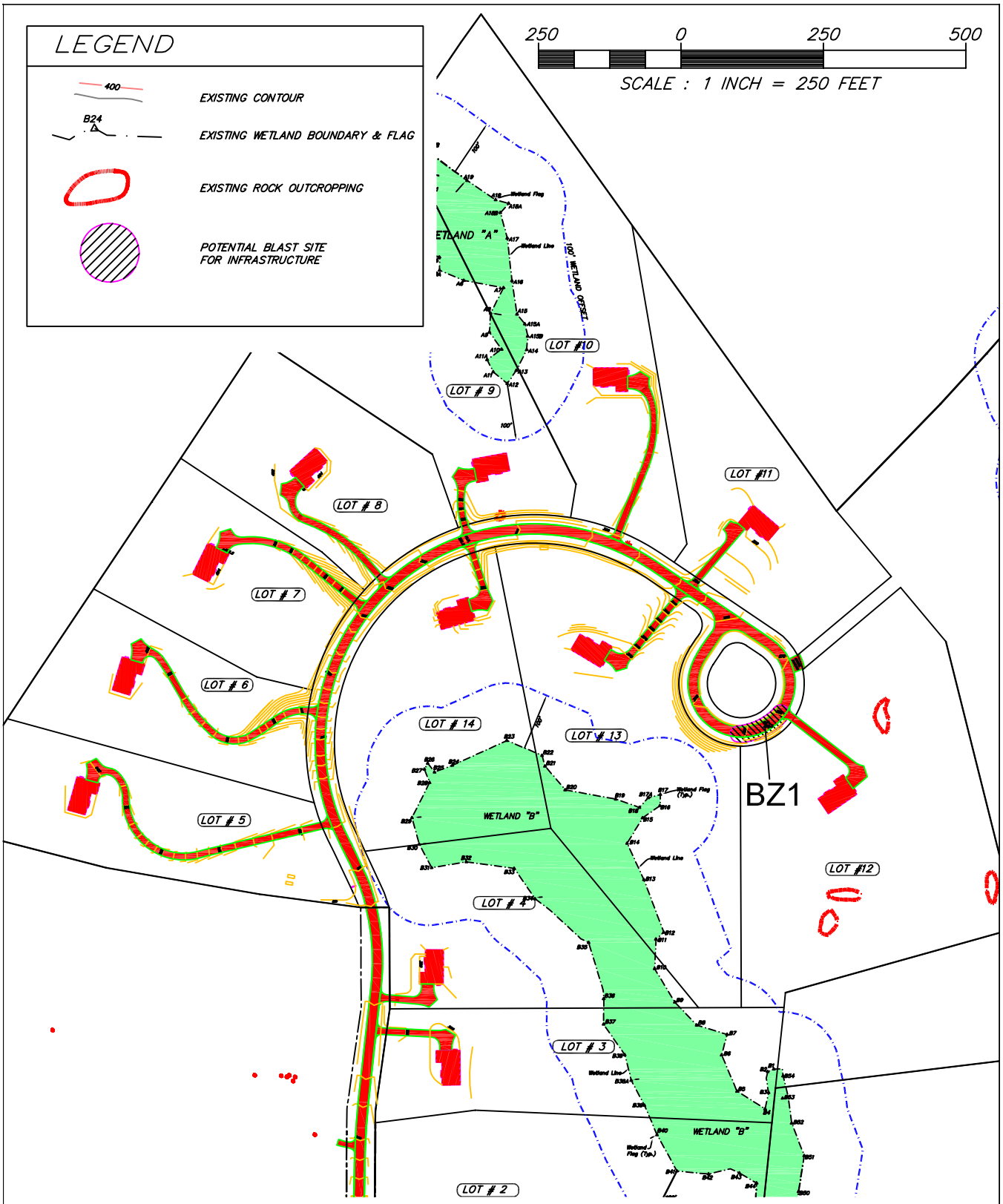


Figure 1: POTENTIAL ROCK BLASTING SITES

Emerald Ridge Subdivision FEIS

Town of Putnam Valley, Putnam County, New York

Source: Cronin Engineering, P.E., P.C., November 17, 2006

Scale: 1 inch = 250 feet

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

FIG 1, 2/15/2007 2:23:55 PM

Table 1 – distances from blast zone to on-site structures

blast zone	description	distance to nearest on-site structure (ft)	structure description
1	road station 37+00	700	Existing residence lot 2*

* Existing residence on lot 2 is owned by the subdivision applicant

Table 2 – distances from blast zones to off-site structures

blast zone	description	distance to nearest on-site structure (ft)	structure description
1	road sta 37+00	1,100	Mandelbaum residence

The above distances exceed the minimum recommended distance of 500 feet to perform a pre-blast survey and nearly all of the off-site structures are double the minimum distance of 500 feet. While blasting will occur in the identified area, it is strongly believed that there will be no impacts to any on-site or off-site structure.

Since the construction of the subdivision improvements will occur in phases and phase 1 will involve the completion of the road system and drainage system, the potential blasting will occur in phase 1, prior to the construction of any new homes on site. Therefore, there are not likely to be any impacts to the new residences.

Based on the identified blast zone, field reconnaissance was performed and some exploratory holes were dug to assess the areas. The amount of rock removal has been estimated and is shown in table 3 below.

Table 3 – estimated rock removal

blast zone	description	total cut (cy)	rock amt (cy)	25% exp (cy)	total rock (cy)	
1	road sta 37+00	600	600	750	750	
total		600	600	750	750	

Pre-Construction Schedule

Prior to any construction of the development, the developer shall comply with the following schedule:

1. Satisfy all applicable conditions of Development Plan Approval by the Planning Board and identify what other applicable permits for site development are required.
2. File pertinent documents with the County Department of Health, County Department of Highways and Facilities, affected utility companies, the Town of Putnam Valley, NYSDEC, and any other involved agency, for necessary reviews and approvals.
3. Obtain the services of a Site Engineer, licensed in the State of New York and as approved by the Town of Putnam Valley for the construction of the road and infrastructure.
4. Post all necessary Performance Bonds for the proposed site work and pay all required fees.
5. Submit all required insurance riders to the appropriate authorities.
6. Stake the property lines as necessary, flag the work limits, identify trees to be protected, if any, and establish elevation reference points (bench marks) on site as necessary.
7. Meet with representatives from the appropriate Town Departments, and Putnam County Department of Highways and Facilities to establish the construction protocol.
8. Contact the Underground Line Location Service (Code 53) at 800-245-2828.
9. Secure the site with required fencing and gates, as necessary.
10. Confirm utility mark outs with the Site Engineer and Contractor.

With the completion of the Pre-Construction Schedule, the on-site construction of the development may proceed pursuant to the construction sequencing program prepared for the project. In the event, during the course of construction, blasting is required the following protocol shall be followed by the developer:

Quantities, Trucking and Hours of Operation

The area delineated as a potential blast zone for the road and infrastructure has been quantified. For the potential blast zone, it is estimated that approximately 750 cubic yards of rock will be generated. This includes using an expansion factor of 25%.

It is the intent of the developer that all of the rock removed will be utilized on site for the construction of the roadway (fill sections) and/or for fill sections required on individual lots. It is not believed that the developer will remove the material from the site. Doing so is an additional cost and is not necessary. Additionally, rock may be crushed on site with the use of a mobile crusher. The crushed rock will be used for road base and or driveway bases. Due to the small amount of rock expected, it is unlikely that crushing will be performed and that the material will be used for the road construction in the loop where fill is required.

In the event material (rock or soil) is removed from the site, it will take place during the established hours of operation. All trucks used for the transport of material from the site shall meet all the necessary requirements of the New York State Department of Transportation and shall have the necessary permits to do such work. All trucks shall have covers (for the material for transportation) and the truck exteriors shall be clean and free of all loose material (rocks, dirt, mud, etc.) prior to leaving the site. The trucks shall be cleaned or hosed down as necessary to comply with this requirement. The contractor, at the end of each day is required to inspect Peekskill Hollow Road and travel routes for any material that may have fallen off the trucks (rocks, dirt, mud clods, etc.) and shall clean the road accordingly.

It is anticipated that some combination of 10-wheel dump trucks, with a capacity of 20 cubic yards and 18-wheel tractor trailers with a capacity of 35 cubic yards will be used to remove material from the site, if removed at all. There may be any combination of truck types used on a daily basis.

Trucking routes to and from the site will be limited to mitigate any potential impacts of truck loads of material leaving the site. To that end, the trucking routes are identified below:

- from Site to Peekskill Hollow Road north to Mill Street south to Route 6* Permitted always*
- from Site to Peekskill Hollow Road south to Oscawana Lake Road Limited use**
- from Site to Peekskill Hollow Road north of Mill Street Limited use**
- from Site to Peekskill Hollow Road north to Church Street to all other local roads Limited use**
-

*Trucks will not be permitted to exit the site onto Peekskill Hollow Road before 9:00 am and after 3:00 p.m. to minimize the project's construction impact on this location during the busy evening hours.

*The applicant has a site location for the deposit of material (rock or earth) on Curry Street off of Route 6 in the Town of Yorktown. This site will be the destination should material leave the site.

*Tractor trailers (18 wheel trucks) are not permitted to leave the site north to Mill Street (left out) as these trucks cannot negotiate the turn. As such, any tractor trailer (or other vehicle unable to exit left out of the site) leaving the site must exit right, south on Peekskill Hollow Road to Oregon Road and travel through the Town of Cortlandt to get to Route 6.

**Limited use indicates that these roads are not to be used unless a specific destination on or via these roads is required. Trucks are not to utilize these roads as short cuts or a matter of convenience. The primary route for trucks shall be Mill Street south to Route 6.

Rock removal either by blasting or hammering shall only take place between the hours of 8:00 am and 5:00 pm, Mondays through Fridays. There shall not be any blasting on Saturdays or Sundays or any holiday recognized by the Town of Putnam Valley.

Project Equipment

Below is an estimated equipment list for the construction of the development. The exact type and number may vary depending on the rate of construction and time of year. However, the list is provided to indicate the anticipated equipment required to facilitate the construction of the project.

1. Two bulldozers
2. Three to four excavators (325 or larger)
3. One hydraulic ram hoe (hammer)
4. Two front end loaders (track or rubber tire)
5. Four tri-axle dump trucks (20+ yards) for on site use to move material
6. One rubber tire backhoe
7. One Uke (large articulated dump truck for on site use to move material)
8. One mobile crusher (temporary for rock crushing)

Explosives And Blasting

In the event blasting is required to achieve the necessary final grades, blasting operations shall strictly adhere to the following requirements:

1. Prior to any drilling or blasting, a pre-blast survey must be prepared and shall include all structures (houses, garages, sheds, individual water wells, or other structures) within 600 feet of any proposed blast site. The pre-blast survey shall include photos, video, sketches, detailed notes and a written report to completely document the affected properties and shall be conducted by qualified personnel. Every structure shall be carefully examined for cracks, deformation from any cause, and other damage that could be claimed.
2. It shall be the responsibility of the blaster to ensure that the particle velocity of the blasts shall be kept to a minimum (2 in/sec) with a 'scaled distance' of 8 or larger. A seismograph shall be provided for each blast and placed in an appropriate location for best measurements. All seismograph readings shall be recorded an maintained as part of the record.
3. All blasting and blasting operations shall be in conformity with the Code of Federal Regulations, Title 29-Labor, Part 1926, Section 1926.900
4. The provisions of Article 16 of the labor Law of the State of New York, as well as Industrial Code Rules contained in Title 12, Part 39 of the New York Code of Rules and Regulations are recognized as applicable to the possession, handling, storage and transportation of explosives and shall be complied with by all blasters.
5. No person, firm or corporation shall detonate explosives unless it is licensed pursuant to Section 458 of the Labor Law of the State of New York, and in addition to such licensing, has obtained a permit for such blasting from the Building Inspector of the Town of Putnam Valley.
6. No person shall blast or cause to be blasted any rock or other substance with any explosive or store explosives in the Town of Putnam Valley without having first obtained a permit therefor from the Building Inspector upon written application on an approved form.
7. Before a permit is issued, the persons shall submit evidence in the form of a certificate of insurance issued by an insurance company authorized to do business in the state of New York and in a form acceptable to the Town of Putnam Valley Town Attorney, guaranteeing that the applicant has in full force and effect a policy of public liability insurance.
8. No person shall use in a blasting operation a quantity of explosives greater than necessary to properly start the rock or other substances or use such an amount as will endanger persons or property.

9. All blasts scheduled to take place within 600 feet of any roadway or structure, including residential structures and individual water wells, before firing, shall be covered with metal matting or other suitable screens of sufficient size, weight and strength to prevent the escape of broken rock or other material in a manner liable to cause injury or damage to persons or property. No person shall fire or explode or direct or cause to be fired or exploded any blast in or near any highway or public place in the Town of Putnam Valley unless competent men, carrying a red flag, shall have been placed at a reasonable distance on all sides of the blast to give proper warning thereof at least three minutes in advance of the firing.
10. No person shall conduct blasting operations within the Town of Putnam Valley after the hour of 5:00 pm and before 8:00 am, or at any time on Sunday or any holiday recognized by the Town of Putnam Valley.
11. Whenever blasting is to occur within 600 feet of any structure, including residential dwellings and individual water wells, the inhabitants of such structure or residential dwelling shall be personally notified of the date and approximate time that blasting will occur. Said notice shall be received no less than 24 hours prior to blasting.
12. All blasting operations shall be in accordance with the Town of Putnam Valley requirements.
13. No person shall conduct blasting operations without a seismograph located at the property lines and all blast locations shall be provided with steel mats or similar material, as approved by the Town of Putnam Valley.
14. Blasting operations in the proximity of overhead power lines, communication lines, utility services, or other services shall not be carried on until the operators and/or owners have been notified and measures for safe controls have been taken.
15. When blasting is done within 600 feet of any structure (house, shed, water well, etc.), the blaster shall take special precautions in the loading, delaying, initiation and confinement of each blast with steel mats or similar approved method.
16. All blast holes shall be stemmed to the collar or to a point that will confine the charge.
17. No loaded holes shall be left unattended or unprotected.
18. The blaster shall keep an accurate, up-to-date record of explosives, blasting agents and blasting supplies used in a blast and shall keep an accurate running inventory of all explosives and blasting agents stored on the site, if any.
19. Any storage of blasting material (explosives, blasting caps, etc.) shall comply with the American Table of Distances for Storage of Explosives and shall be stored in a suitable container and properly barricaded with an earthen berm or other similar method. In no event shall explosives be stored within 300 of any residence or structure.

Air and Noise

All operations of the project, blasting, rock ripping, rock crushing and trucking (if applicable) shall be in accordance with the Town of Putnam Valley Town Code, Chapter 82, Noise Ordinance. No work shall be performed on Saturdays or Sundays or any holiday recognized by the Town of Putnam Valley. All work on site shall take place between the hours of 7:00 am and 4:00 pm, Monday through Friday, except for the above days.

Reclamation

Following the rock removal in those areas of the proposed road right of way or at driveway entrances where there are exposed rock faces, the rock faces, if any, shall be cleaned of all loose material and stable. Areas where the rock is not stable, the loose rock shall be ripped out or re-blasted to achieve a stable side slope.

All areas of exposed rock with a slope less than 1 foot vertical to 3 foot horizontal (1:3) shall be provided with a minimum 4" layer of loamy soil, covered by a minimum of 4" of top soil prior to seeding and mulching. Areas of exposed rock greater than a 1:3 slope may be left exposed. The rock however shall be clean of dirt and loose rocks shall be removed such that the rock is stable and attractive. All other areas of rock removal (i.e., trench rock, foundation rock) will be covered as required to complete the applicable construction.

The topsoil used shall be free of stones >2", trash, debris, and have less than 10% gravel by volume. The soil shall have > 6% by weight fine textured stable organic material, muck soil will not be considered top soil. The topsoil shall not be placed in a frozen or muddy condition. Topsoil shall be uniformly distributed over the target areas and evenly spread to a depth of 4". After the topsoil installation is complete, ground limestone (calcium carbonate) shall be spread uniformly and thoroughly over the top soil at a rate of approximately 100 lbs per 1000 square feet or to achieve a soil ph of 6.0. Upon completion of the lime, the site soil shall be fertilized with 600 lbs of 5-10-10 or equivalent per acre. Immediately after the soil has been prepared, permanent seeding shall be applied. The seed mix shall contain the following ratios:

Kentucky Blue Grass	65%
Perennial Rye Grass	20%
Fine Fescue	15%

This seed mixture shall be applied at a rate of 175-200 lbs per acre within a day of the completion of the soil placement. Upon placement of the seed mixtures, the entire seeded area shall be mulched. The mulch shall consist of hay or straw and shall be applied at a rate of 2 tons per acre or 100-200 bales per acre.

The erosion controls in place for the construction of the development shall remain until a stable vegetative (grass) cover is established. The removal of the erosion control barriers shall be at the direction of the site engineer only. The above described critical area seeding as well as the establishment of trees and shrubs shall be in conformance with the approved subdivision plans and the standards presented in current edition of "New York Guidelines for Urban Erosion and Sediment Control".

Complete reclamation of the site will occur upon completion of all construction and landscaping as per the approved subdivision plans.

Prepared by:

Cronin Engineering, P.E., P.C.
2 john Walsh blvd.
Peekskill NY 10566
914.736.3664

Appendix G

Building Area and Open Area Calculations

EMERALD RIDGE SUBDIVISION - CONVENTIONAL LAYOUT (14 RESIDENTIAL LOTS & 1 CONSERVATION PARCEL)

Old Lot	Lot #	Gross Lot Area (sf)	Gross Lot Area (ac)	Roadway, Easements (sf)	Net Lot Area (sf)*	Net Lot Area (ac)	Wetlands (sf)	Lakes, Ponds & Watercourses (sf)	Slopes 20%+ (sf)	Rock Outcroppings >20,000 (sf)	Building Area (sf) **	Impervious Area Total (sf)	Minimum Open Area (%)
	Minimum	**n/a**	**n/a**	**n/a**	**87,120**	**2.00**	**n/a**	**n/a**	**n/a**	**n/a**	**30,000**	**n/a**	**75%**
17	1	188,307	4.32	24,274	164,033	3.77	0	0	58,104	0	105,929	4,509	98%
18	***2	144,184	3.31	0	144,184	3.31	18,440	0	36,993	0	88,751	8,762	94%
19	3	132,247	3.04	0	132,247	3.04	36,634	0	8,360	0	87,253	2,755	98%
20	4	127,606	2.93	0	127,606	2.93	41,846	0	2,181	0	83,579	4,378	97%
1	5	128,280	2.94	15,196	113,084	2.60	0	0	2,890	0	110,194	9,446	93%
2	6	104,392	2.40	0	104,392	2.40	0	0	8,860	0	95,532	8,150	92%
3	7	101,085	2.32	0	101,085	2.32	0	0	1,324	0	99,761	6,647	93%
4	8	106,998	2.46	0	106,998	2.46	0	0	0	0	106,998	6,308	94%
5	9	169,115	3.88	0	169,115	3.88	10,947	0	0	0	158,168	4,585	97%
6	10	212,656	4.88	0	212,656	4.88	23,803	0	24,048	0	164,805	6,967	97%
7	11	127,223	2.92	0	127,223	2.92	0	0	9,292	0	117,931	4,614	96%
8, 15, 16, 24 & 25	12	236,755	5.44	0	236,755	5.44	0	0	80,570	0	156,185	5,392	98%
22 & 23	13	213,943	4.91	0	213,943	4.91	28,390	0	20,881	0	164,672	5,476	97%
21	14	144,432	3.32	913	143,519	3.29	30,954	0	16,042	0	96,523	4,675	97%
8 thru 16, 24 & 25	Conservation Parcel	1,350,592	31.01	0	-	-	66,755	0	412,421	0	-	0	-
-	Right of Way	103,481	2.38	-	-	-	0	0	18,133	0	-	33,475	-
	TOTALS	**3,591,296**	**82.44**	**40,383**	**2,096,840**	**48.14**	**257,769**	**0**	**700,099**	**0**	**1,636,281**	**116,139**	**-**

NOTES

* Net Lot Area = Gross Lot Area - Right of ways & Easements

** Buildable Area = Gross Lot Area - Wetlands - Lakes, Ponds & Watercourses - Slopes > 20% - Rock Outcroppings > 20,000 sf

** Minimum contiguous building area indicates that each lot as a minimum contiguous buildable area > 15,000 sf

*** Existing house & driveway to remain

Appendix H

Attachments Supporting Wildlife Surveys

The contents of Appendix H have been moved to Appendix I

Appendix I

Biodiversity Study

Biodiversity Study Report

Project: Emerald Ridge Subdivision
Marsh Hill Road
Putnam Valley, NY

Prepared By:
TIM MILLER ASSOCIATES, INC.
10 North Street
Cold Spring, New York 10516
(845) 265-4400

January 30, 2007

Emerald Ridge Subdivision - Biodiversity Study Report

INTRODUCTION

The Emerald Ridge Subdivision project site is located north of Peekskill Hollow Road and east and north of Marsh Hill Road in the unincorporated area of the Town of Putnam Valley, Putnam County, New York. In compliance with the SEQRA Final Scope for the Emerald Ridge Subdivision, the staff of Tim Miller Associates (TMA) has conducted field surveys of the 85.5 acre property under the Town of Putnam Valley Wildlife Habitat and Biodiversity Assessment Guidelines (dated 11/16/04) and presented the methodology and results of the surveys in subsequent SEQRA documents (i.e., DEIS and FEIS reports) for the project. The surveys were directed towards determining baseline information on the ecology of the site and potential ecological impacts of the proposed project on biodiversity. This Biodiversity Study Report presents the methods and results of the surveys in a biodiversity reporting format requested by the Town of Putnam Valley Wetland Inspector.

The requested report format includes:

1. A presentation in tabular and summary form listing on-site and adjacent habitat types, using habitat descriptions provided in standard regional references;
2. A list of New York State Department of Environmental Conservation (NYSDEC) listed[1] threatened, endangered, special concern and Metropolitan Conservation Alliance (MCA) identified[2] development sensitive focal species that are associated with each of these habitats;
3. A description of study methodologies for each listed species, including areas of the site inspected, transect and point survey locations and the time, date and weather conditions for each survey.

Extensive baseline wildlife and habitat surveys were conducted on the project site over a substantial period, from March, 2005 through November, 2006. The site field investigations employed either stationary observation posts (used primarily for the bird surveys) or a series of random/zig-zag transects with observation, listening, and/or ground searches being conducted as site specific features changed along the walking transect route (e.g. upland hardwood forest slopes through wetlands to stream corridors). Search techniques for the smaller mammals, reptiles and amphibians included overturning deadfall timber, leaf litter and rock cover along each transect route, as described below. Identifications were made in the field and no voucher specimens were collected for any of the animal species.

The nature of the random transects allowed the investigators to observe and actively investigate features of interest across the property in a time efficient manner and for a greater variety of micro-habitats than might be achieved if either strict linear or quadrant surveying techniques were imposed. A handheld GPS unit was used to assist in the location of specific features and bounds of the property during the field activities.

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[1] NYS DEC. 2006. Endangered, Threatened and Special Concern Fish and Wildlife Species of New York State: http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/etsclist.html

[2] Miller, N.A. And M.W. Klemens. 2004. Croton-to-Highlands Biodiversity Plan - Balancing Development and the Environment in the Hudson River Estuary Catchment. MCA Technical Paper No. 7, Metropolitan Conservation Alliance, Wildlife Conservation Society, Bronx, New York.

The Croton-to-Highlands Biodiversity Plan, published in 2004, is a regional biodiversity assessment that has mapped large areas of both public and private lands of the towns of Cortlandt, New Castle, Yorktown and Putnam Valley and identified regional "areas important for biodiversity." These areas are identified in the plan as: "Canopus Hollow to Fahnestock", "North-central to Eastern Putnam Valley", and "East-central to Southern Putnam Valley." In this town-supported regional assessment process, additional large- to small-scale features were mapped, including biodiversity corridors, biotic planning units, habitat constriction points and habitat fragments whose protection would aid the towns in applying “landscape” scale planning to future developments within the region.

The subject site is not located within or immediately adjacent to any of these “biotic planning units” (BPU) or biodiversity corridors. Thus it is clear that this area was not determined by the MCA study to be an area with high potential to be “important for biodiversity.” The removal of upland forest vegetation will be limited to just over 14.23 acres of woodland. All impacts to the existing vegetated characteristics of the site will be limited to upland areas, outside of all identified wetlands.

1: On-site and Adjacent Habitat Types

Based on available aerial photography, the site has been relatively undisturbed and maintaining the same cover types since at least the early 1970's. The property is part of a contiguous, relatively undisturbed woodland that extends north and west to Town owned property and east and west to other undeveloped lands. These surrounding lands are forested and similar to the subject site in cover type. All of this land is undeveloped and is expected to remain that way for the foreseeable future.

The site is located within the Hudson Highlands ecozone, and the upland woods on the site approximates the broadly defined Appalachian oak-hickory and beech-maple forests distributed throughout the lower Hudson River valley. These ecosystem types are recognized as being apparently secure both globally and in New York State.

The project site includes three large-scale habitat/ecosystem features as broadly described in the NYS DEC publication "Ecological Communities of New York State[3]", which was prepared by the New York Natural Heritage Program[4] (Edinger et al, 2002):

1. successional northern hardwood forest;
2. hemlock northern hardwood forest, and;
3. palustrine forested wetlands.

These landscape scale associations and other smaller scale habitats as characterized by Edinger are tabulated in Table 1, below.

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[3] Edinger, G.J. Et al (Eds.) 2002. Ecological Communities of New York State. Second Edition. NY NHP, NYS DEC. Albany, NY. 136 pp.

[4] The Biodiversity Assessment Manual for the Hudson River Estuary Corridor (Hudsonia, 2001) utilizes different criteria for categorizing landscape scale habitat/ecosystem features and does not include consideration of lands within the Town of Putnam Valley.

Table 1
Existing Habitat Types*

Habitat Type	On-site Property	Adjacent Properties**
Successional northern hardwood forest	Present	Present
Hemlock northern hardwood forest	Present	Present
Palustrine forested wetland	Present	Present
Vernal Pool	Present	Absent
Reservoir/artificial impoundment	Absent	Present
Confined stream corridor	Present	Present
Shallow emergent marsh	Absent	Present
Brushy cleared land	Absent	Present
Stone wall	Present	Present
Mowed lawn with trees	Present	Present
Paved road/path	Present	Present
Rural structure exterior	Present	Present

* Habitat type classifications adapted from Edinger, et al 2002.
** Site walks were conducted on the adjacent properties as well as interpretation of aerial photos. Specific surveys and detailed habitat evaluations were not conducted.
Source: Tim Miller Associates, Inc., 2006

Photographs of each of the on-site habitat types were taken and are referenced in the sections below that discuss each habitat type. These photos are presented at the back of this report. Please note that three of the habitat types described in Table 1 (brushy cleared land, reservoir/artificial impoundment and shallow emergent marsh) were observed on adjacent properties, not on the subject site. “Brushy cleared land” is present as a small field that abuts the western edge of the subject site, north and east of an existing off site residence. “Reservoir/artificial impoundment” and “shallow emergent marsh” are associated with the DEC wetland to the north of the site.

Successional Northern Hardwood Forest

Successional northern hardwood forest, a deciduous forest type shown in Photo No. 1, covers most of the property (69.6 acres, or 81 percent). This association is dominated by red maple (*Acer rubrum*) and gray birch (*Betula populifolia*), and includes a significant number of American beech (*Fagus grandifolia*), tulip poplar (*Liriodendron tulipifera*), black cherry (*Prunus serotina*), yellow birch (*Betula lutea*), and shagbark hickory (*Carya ovata*). The shrub and herb strata includes spicebush (*Lindera benzoin*), bittersweet (*Celastrus scandens),* poison ivy (*Toxicodendron radicans*), garlic mustard (*Alliaria petiolata*) and honeysuckle vines (*Lonicera* spp.). These understory layers are not well-developed below the closed canopy of the large hardwoods. Based on field observations, there is a significant deer presence on this site, and the lack of well developed herb and shrub layers is likely the result of deer grazing.

In those areas of the site where shallow depth to bedrock is encountered, the dominant tree species are red oak, yellow birch and beech.

The successional northern hardwood forest areas contain mature tree species (beech, oaks, hickory) that provide mast for deer and other mammals, and cover in the upper canopy and in standing dead trees. The proximity of some of the forest areas to existing wetlands provides additional benefit to wildlife by offering a regular water source and additional forage opportunities. There is generally a lack of significant understory and thickets within these

woods, but some of these areas do exist in isolated pockets. These areas are valuable for use as cover for some smaller ground-based creatures.

A few of the species observed on the site require this type of closed canopy forest for nesting. Ovenbird, veery and hermit thrush were identified as bird species that typically utilize woodland habitat. The ovenbird, which builds nests on the ground in dense wooded areas, was heard in the northwestern corner of the site.

This on site habitat is also valuable as being part of a continuous woodland extending onto undeveloped land to all directions on adjacent properties.

Hemlock Northern Hardwood Forest

Portions of the northeast corner of the property are dominated by eastern hemlock (*Tsuga canadensis*) and represent a different cover type than the rest of the property as shown in Photo No. 2. Approximately 8.3 acres of the site are hemlock northern hardwood forest. Red maple and black birch are also observed in the canopy of this forest type. The soils in this area are acidic and very stony, resulting in a species composition different from the remainder of the site. There is very little in the way of understory in this area due to the density of the evergreen canopy. Starflower, wood fern, Christmas fern and wood sorrel are in the herbaceous layer, although the groundcover is very sparse.

These areas of dense evergreens are used as cover for many of the same species (i.e., wild turkey) that utilize the more open deciduous woodlands of the site. Some specialist species that prefer this cover type such as the pileated woodpecker and the black throated green warbler were observed on the site on occasion during the surveys.

Palustrine Forested Wetlands

Four wetlands have been identified on this site, as delineated by Steve Coleman, Putnam Valley Wetlands Inspector. Photo No. 3 depicts a representative section of palustrine forested wetlands on the site.

Wetland A is an approximately 0.64 shallow depressional (Magee and Hollands[5]) palustrine forested, broad-leaved deciduous, seasonally flooded/saturated (Cowardin, et al[6]) wetland located in the northwestern part of the site. Vegetation is dominated by red maple, sour gum and pin oak in the overstory, winterberry holly and spicebush in the shrub layer, and cinnamon fern, fringed sedge, tussock sedge and skunk cabbage in the herbaceous layer. Greenbriar (*Smilax rotundifolia*) is common in open areas where spring inundations are indicated, leaving a vegetative gap to be filled by the climbing vine where other plant species can not become established.

Wetland B is a slope (Magee and Hollands) palustrine forested, broad-leaved deciduous, seasonally flooded/saturated (Cowardin, et al) wetland that extends from the center of the site

[5] Magee, D. W., G.b G. Hollands (Magee and Hollands). 1998. A Rapid Procedure for Assessing Wetland Functional Capacity Based on Hydrogeomorphic (HGM) Classification, Normandeau Associates Incorporated and ENSR.

[6] Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe (Cowardin et al). 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C.

to the southern property edge, ultimately draining to Peekskill Hollow Brook. This wetland is 3.53 acres on site. Wetland B is densely vegetated, with several vegetative layers, periodic open areas and braided channels conveying storm flows and groundwater discharge from north to south. Vegetation species in the herbaceous layer include skunk cabbage, jewelweed, halberd leaved tearthumb, bedstraw, poison ivy, meadow rue and sensitive and cinnamon ferns. Spicebush, barberry and hornbeam are the dominant shrubs and small trees. American elm, tulip poplar, pin oak and red maple are the dominant tree species.

Wetlands C and D are depressional (Magee and Hollands) palustrine forested, broad-leaved deciduous, seasonally flooded/saturated (Cowardin, et al) wetlands in the northeast corner of the site, and were determined by NYSDEC to be hydrologically connected to the State mapped Wetland ML-3. These wetlands have hydrology that is consistent with vernal pool habitat. Both wetlands receive runoff from small surrounding watersheds.

Wetland C is the most open of the site wetlands, with about 25 percent of the wetland area having a closed canopy. Due to the seasonal inundation of the majority of the wetland, these open areas are generally unvegetated, with thick leaf litter on the surface. Small New York ferns are the dominant groundcover in this wetland, but only small patchy areas are vegetated. There are several treed islands within the wetland. Common wetland species include highbush blueberry, red maple, spicebush, fringed sedge, summersweet, winterberry holly, and a few swamp milkweed.

Wetland D is mostly wooded, with an open, seasonally inundated area at the south end of the delineated wetland. The wooded portion of the wetland has winterberry holly, red maple, American elm, tussock sedge and spicebush. In the open areas, vegetation is dominated by New York fern, fringed sedge, sensitive fern and a few buttonbush.

Of the larger species likely to use the site, deer and raccoon are known to utilize Wetland B and its stream corridors. Signs of both species were distributed throughout the site.

The wooded swamp also is likely to provide habitat for a number of other animal species. Wetland B provides cover, food and nesting sites for numerous species, typical of other large wetland tracts in Putnam County. This habitat type is not regionally unique to this site; it is also present on adjacent lands with other large wetlands located west, northwest and northeast of this site.

Vernal Pools

Effective vernal pool habitats are generally small in size, and have seasonal hydrology. The pools flood in late fall/early winter and remain wet until mid-summer, preventing the establishment of fish populations. The amphibian species that preferentially breed in vernal pools include the ambystomid or mole salamanders (e.g. Jefferson, blue spotted, marbled and yellow spotted salamanders) and several frog species (particularly wood frog and Spring peepers).

This ecological community is distributed throughout New York State and is ranked as "apparently secure" globally and "apparently secure" in New York State, though there is some concern about a relatively low number of known occurrences or "limited acreage" remaining (ranking of G4 and S3/S4).

Wetlands A, C and D have hydrology that is consistent with vernal pool habitat (Photo Nos. 4, 5 and 6). Maximum water depths of from 12 to 18 inches were observed in the pools at Wetlands C and D. Wetland A had shallower and less extensive pools that may have too short a flooding season to allow larval survival through metamorphosis for some of the vernal pool amphibian species.

Vernal pools are not known to be present on adjacent properties, however, due to the difficulty in remotely identifying potentially small ecological resources using available aerial photography or GIS imagery, it is possible that pools may be present in these offsite areas. None were observed in close proximity to the subject site.

Confined Stream Corridor

One stream corridor drains this property, through Wetland B (Photo 7). The corridor provides intermittent and perennial flow when not frozen, and varies in width from two to five feet in meandering channels. The stream channel has a stony substrate, and in some areas is flanked by stone walls that provide additional habitat. Small reptiles and amphibians living within the stream corridors (red-backed and two-lined salamanders have been observed) offer additional food source to some of the larger omnivorous mammals that may be present (i.e., raccoons, fox, skunk), and the undeveloped nature of the watershed draining to the central wetland/watercourse system ensures good water quality both for the semi-aquatic species and the larger mammals that feed on them. Tree coverage provides shade for both watercourses and moderates temperature fluctuations. Although no fish species have been observed on site, moderation of stream temperatures by the adjacent vegetation is important to fish survival in downstream areas.

Stone Walls

There are numerous stone walls distributed throughout the property and on adjacent lands. On the project site, the majority of the stone walls are located in the western half with the remainder in the southeastern portion (Photo 8). They were used in the past to mark the boundaries of old fields, pastures and farming roads. These stone walls offer nesting and cover area for a variety of species, including snakes, small mammals (chipmunks, mice, rabbits, voles, etc.) and various amphibian species. Newts and salamanders are particularly likely to find suitable habitat within the stone walls within or near wetlands and watercourses. Insect and worm populations that are likely to live within the walls provide a food base for many of these creatures. A total of 12,835 linear feet of stone wall has been identified on this parcel.

Mowed lawn with trees/Paved road/Rural structure exterior

In the southern part of the site, west of Wetland B, is an area that is currently used as a house site with maintained lawn (Photo 9). Marsh Hill Road borders the property below this house site (Photo 10). This portion of the site creates edge habitat that is not otherwise available on the property, and provides a niche for species that are well adapted to suburban environments. This area includes a variety of native as well as introduced landscape species.

On-site extent (acreage or lineal feet) of each of the large-scale habitat types described above is presented in Table 2. Some of the natural and cultural habitat types included in Table 1 are not present on the subject property, and thus are not presented in Table 2.

Table 2
Existing On-site Habitat Coverage

Habitat Type	Approximate Coverage
Successional northern hardwood forest	69.6 acres
Hemlock northern hardwood forest	8.3 acres
Palustrine forested wetland *	4.7 acres
Vernal pool	0.9 acres
Stream corridor	800 lf
Stone wall	12,835 lf
Mowed lawn with trees/Paved road/ Rural structure exterior **	2.0 acres
* includes Wetland B and areas of Wetlands A, C and D that are not parts of vernal pools. ** includes house site with maintained lawn	
Sources: Cronin Engineering P.E. P.C. and Tim Miller Associates, Inc., 2005	

Adjacent properties, as stated above, are part of a continuous wooded area that extends from Peekskill Hollow Road north through extensive areas of Putnam Valley. As on the project site, the ecotypes on adjacent properties consist primarily of upland forested areas of successional- and hemlock-northern hardwood forest with confined stream corridors as well as palustrine forested wetlands in depressional and flat areas, but also include significant areas of rural development. Other habitats listed in Table 1 that are also present on adjacent properties can be summarized as:

- Reservoir/artificial impoundment - including a large impoundment (incorporated within NYSDEC Wetland ML-3) on Oscawana Brook and small impoundments and artificial stormwater basins within the Peekskill Hollow Brook watershed;
- Shallow emergent marsh - along Oscawana Brook and Peekskill Hollow Brook;
- Brushy cleared land - Portions of adjacent residential properties;
- Mowed lawn with trees - Portions of adjacent residential properties;
- Paved road/path - Marsh Hill Road, Peekskill Hollow Road, Oscawana Lake Road and various residential roads;
- Rural structure exterior - Houses and ancillary buildings on adjacent residential properties.

Putnam Valley is known for areas of steep slope with rocky substrates that drain to depressional areas and drainageways within ridge and valley systems. The Applicant's consultants have walked the wooded areas north and west of the site for this and other projects, and found these forests to be consistent ecologically with the subject property. It is likely that the distribution of species observed in these areas would be similar to that expected or observed on the Emerald Ridge site, as described below.

Rare or Unusual Habitat

Correspondence from the New York State DEC Natural Heritage Program indicates that there are no known occurrences of rare or unusual habitat types on this parcel. A copy of this letter is attached with this report. However, three wetlands that have vernal pool characteristics were

investigated on the property, and have the potential to provide habitat for pool breeding amphibians, as described below.

2: Threatened, endangered, special concern and focal species

This section provides a list of NYS DEC threatened, endangered, special concern and MCA related development sensitive focal species[7] that are associated with each of the habitats identified in Section 1, and also provides lists of the wildlife species observed during the 2005-2006 field investigations on the project site. Table 3 presents the list of potential species that may be present on site or on adjacent properties, based on the defining DEC and MCA criteria applied.

While the list of focal species identifies certain species that indicate habitat and conservation value, surveys were not limited to just these species. Inventories and observations of all species in all groups were identified and recorded during site walks. Generic field data sheets and/or tape recordings were used for recording observations, with any and all species observed and identified being recorded. By using regular trails and transects through the site for general wildlife observations, all identified habitats on site were surveyed. An aerial photo indicating the general location of these transects is included with this report.

As described below, very specific surveys were provided for two focal groups. Vernal pool breeding amphibians and birds were surveyed during separate and distinct survey efforts. Both groups require special observation methods and timing when compared to the more general survey efforts for other groups.

[7] The MCA Croton to Highlands Biodiversity Plan identifies focal species as “well-established, locally indigenous species,” excluding from consideration “likely migrating individuals, vagrants, or otherwise outlier” species in an area.

Table 3
State Listed Species or MCA Focal Species Potentially Present in On-Site and Adjacent Habitats

Common name	Status	Habitats
Eastern box turtle	NYS special concern	Forests, wooded wetlands
Eastern hognose snake	NYS special concern	Forests, stone walls or rocky surface
Worm snake	NYS special concern, MCA focal species	Moist forest areas with sandy or rock substrate
Jefferson salamander	NYS special concern, MCA focal species	Wetlands, hardwood forests, vernal pools
Blue-spotted salamander	NYS special concern, MCA focal species	Wetlands, hardwood forests, vernal pools
Spotted salamander	MCA focal species	Wetlands, hardwood forests, vernal pools
Marbled salamander	NYS special concern, MCA focal species	Wetlands, hardwood forests, vernal pools
Red-spotted newt	MCA focal species	Forests, wetlands
Dusky salamander	MCA focal species	Confined stream corridors
Slimy salamander	MCA focal species	Old second growth forests
Wood frog	MCA focal species	Wetlands adjacent to hardwood forests, vernal pools
Spotted turtle	NYS special concern, MCA focal species	Ponds, meadows, impoundments
Wood turtle	NYS special concern, MCA focal species	Wetlands adjacent to hardwood forests and meadows, confined stream corridors
Fence lizard	NYS threatened, MCA focal species	Rugged terrain with open areas of rocky ledges for basking
Five-lined skink	MCA focal species	Steep, open rocky terrain in deciduous forests
Timber rattlesnake	NYS threatened, MCA focal species	Rugged terrain with open areas of rocky ledges for basking
Black racer	MCA focal species	Forests, meadows and brushy cleared land
Rat snake	MCA focal species	Forests, meadows and brushy cleared land
Ribbon snake	MCA focal species	Forests, meadows and brushy cleared land
Cooper's hawk	NYS special concern, MCA focal species	Upland woods and forests
Sharp shinned hawk	NYS special concern, MCA focal species	Upland woods and meadows
Eastern bluebird	MCA focal species	Upland woods and meadows
Indigo bunting	MCA focal species	Upland woods and meadows
Interior forest bird species *	MCA focal species	Upland forests, wetlands, confined stream corridors

* Includes: barred owl, pileated woodpecker, least flycatcher, common raven, Eastern towhee, yellow-throated vireo, black-and-white warbler, worm-eating warbler, blue-winged warbler, chestnut-sided warbler, black-throated green warbler, ovenbird, northern waterthrush, Louisiana waterthrush, Kentucky warbler, hooded warbler, Canada warbler, brown thrasher, wood thrush, veery.
Sources: New York State DEC; Westchester County Department of Planning; MCA Tech. Paper No. 7.

3: Description of Study Methodologies

This section provides a description of the survey methodologies used for the focused extended biodiversity studies of each wildlife group presented in Table 4. The descriptions provided

include areas of the site inspected, transect and point survey locations and the time, date and weather conditions for each survey.

Table 4
Extended Biodiversity Study Schedule and Methods - 2005/6

Focus Group	Focus Group Habitats	Focus Group Species	Focus Group Survey Season	Survey	
				Time of Day	Techniques
Vernal Pool Amphibians	Vernal Pools in Wetlands A, C and D	Jefferson salamander Blue-spotted salamander Spotted salamander Marbled salamander Wood frog	March 15 to April 30	Warm rainy evenings for breeding, late afternoon to dusk for observation of larvae and counting of egg masses; minimum of three visits	Flashlight and dip-net searches at night, observation and photographing of egg masses and larvae
Reptiles, Non-Vernal Pool Amphibians	Site-wide	Eastern box turtle Eastern hognose snake Worm snake Red-spotted newt Black racer Rat snake Ribbon snake	May 1 to June 30, and Mid-summer	Late morning to mid-afternoon; minimum of three visits	Turning of cover objects, 15 minute observations at specific points along transects
Breeding Birds	Site-wide	Cerulean warbler Worm-eating warbler Red-headed woodpecker Breeding Bird Atlas species	Early May to Early July	6:00 am through 9:30 am for at least two dates, two hours before sunset to one hour after sunset for at least one date	Direct observation, nest identification, song recognition
Mammals	Site-wide	Any regional species	March 1 to October 31 for direct observation; year round for observation of tracks, scat, etc.	6:00 am through 10:00 am for at least two dates, two hours before sunset to one hour after sunset for at least one date	Turning of cover objects, 15 minute observations at specific points along transects; observation of tracks, scat

4: Description and Results of Field Surveys

A variety of wildlife species were observed on the project site during the course of multiple site visits through 2005-2006 and site specific lists of the species observed are provided on the following pages in Table 6a (Mammals), Table 6b (Reptiles and Amphibians) and Table 6c (Birds). The wildlife lists include all wildlife species that were observed during the site visits and field surveys. Small animals noted on site include rabbits, raccoons, squirrels, chipmunks, and various amphibians. Deer also utilize the property. The project site is used by numerous species of birds, particularly those species that utilize closed canopy hardwood forests.

During 2005, site visits were conducted in clear weather on March 17, March 29, April 15, May 19, July 11 and July 20. On four of these days the survey observations were dedicated specifically to wildlife and bird observation. An amphibian breeding survey was conducted for the wetlands in rainy weather on the night of April 15, 2005. A site specific bird survey was first

conducted on July 11, 2005. Field survey dates assigned during 2005 were consistent with times of increased wildlife activity. The late spring dates were chosen for observation of nesting birds, breeding salamanders and other amphibians, spring movement of turtles from winter hibernaculum and increased activity by mammals during spring mating and rearing of young. Winter dates were chosen to evaluate the resident bird population and to observe winter signs of resident mammals. The absence of certain species during field observations does not mean that those species do not utilize the site.

During 2006, additional habitat assessments and biodiversity surveys for breeding birds and amphibians were performed according to protocols set forth in the Town of Putnam Valley "Wildlife Habitat and Biodiversity Assessment Guidelines". During these surveys, additional observations were made to document the presence of development-sensitive wildlife species. These site surveys followed the schedule provided in Table 4, in order to be consistent with the biodiversity guidelines and appropriate seasonal presence for focal species. The field investigation methodology included a consideration of available on site habitats to determine the possible use of the property by State-listed and MCA-focal species. Late Spring dates were chosen that would coincide with behaviors such as nesting birds, breeding salamanders and anurans, dispersion of turtles from Winter hibernaculum and the mating and parenting activities of mammals.

Additional site visits were conducted at least monthly through November of 2006, thus providing observations of the site over nearly a two-year period beginning in March of 2005.

Table 5
Listing and Description of Survey Dates
Emerald Ridge Subdivision

Date	Temp. (°F)	Weather Conditions	Survey Type	Area of Site Surveyed
3/17/2005	Not recorded	Not recorded	Wildlife/Birds	Wildlife Survey Transects
3/29/2005	Not recorded	Not recorded	Wildlife/Birds	Wildlife Survey Transects
4/15/2005	Not recorded	Showers	Amphibians	Vernal Pools
5/19/2005	Not recorded	Not recorded	Wildlife/Birds	Wildlife Survey Transects
7/11/2005	Not recorded	Not recorded	Birds	Wildlife Survey Transects
7/20/2005	Not recorded	Not recorded	Wildlife/Birds	Wildlife Survey Transects
3/6/2006	40's	Dry, sunny	General wildlife	Wildlife Survey Transects
3/13/2006	Not recorded	Showers	Amphibians	Vernal Pools
3/28/2006	Not recorded	Showers	Amphibians	Vernal Pools
3/30/2006	50's	Dry, sunny	General wildlife	Wildlife Survey Transects
4/3/2006	Not recorded	Showers	Amphibians	Vernal Pools
4/14/2006	50's	Showers	Amphibians	Vernal Pools
4/26/2006	60's	Dry, sunny	General wildlife	Wildlife Survey Transects
5/19/2006	55-65	Dry, sunny	Breeding Bird	Bird Survey Points
5/24/2006	70's	Dry, sunny	General wildlife	Wildlife Survey Transects
5/30/2006	60's	Dry, sunny	Snakes	Wildlife Survey Transects
6/14/2006	55-65	Showers, overcast	Breeding Bird	Bird Survey Points
6/29/2006	90's	Showers, overcast	General wildlife	Wildlife Survey Transects
7/24/2006	Not recorded	Dry, sunny	General wildlife	Wildlife Survey Transects
8/31/2006	60's	Showers, overcast	General wildlife	Wildlife Survey Transects
9/27/2006	70's	Dry, sunny	General wildlife	Wildlife Survey Transects
10/25/2006	60's	Dry, sunny	General wildlife	Wildlife Survey Transects
11/20/2006	40's	Dry, sunny	General wildlife	Wildlife Survey Transects

Mammals

Observations of mammals were recorded throughout the period of the various site walks, particularly during those listed in Table 5 as "general wildlife inventory". Observations were recorded along the identified transects except when random observations were made in other areas of the site. As described above, search techniques included overturning deadfall timber, leaf litter and rock cover as well as identification of tracks, scat, fur remnants and other species indicators. Table 6a lists the mammals observed during the study period.

Table 6a
Mammals Observed at Emerald Ridge, 2005 - 2006

		Habitat Type				
Common name	**Scientific name**	**U**	**FW**	**W**	**SC**	**SW**
Whitetail deer	*Odocoileus virginianus*	X	X			
Raccoon	*Procyon lotor*	X	X		X	
Eastern chipmunk	*Tamias striatus*	X				X
Gray squirrel	*Sciurus carolinensis*	X	X			
Eastern cottontail	*Sylvilagus floridanus*	X				
Striped skunk	*Mephitis mephitis*	X				
Eastern mole	*Scalopus aquaticus*	X				

Habitat type: U - Upland Hardwood Forest, FW - Forested Wetland, W - Standing Water, SC - Stream Corridor, SW - Stone Walls

Source: Tim Miller Associates, Inc.; 2005, 2006

Reptiles and Non-Vernal Pool Amphibians

Survey activities for reptiles and non-vernal pool amphibians were conducted in Spring and Summer months and included the turning over of rocks and fallen wood litter or the disruption of leaf litter, duff and brush piles, and prolonged observation from several fixed locations within the site. During the wetlands piezometer surveys, conducted monthly throughout the year, additional observations of birds and mammals were made. In excess of 40 man-hours were spent on the site making these observations, which occurred during daylight hours, generally between 8 am and 6 pm.

Supplemental field observation methods used on the Emerald Ridge site included walking of transects through the site and observation of biological indices (scat, prints, carcasses, etc.). Site surveys did not include trapping, mist netting or other means of live animal collection. Generally the surveyor used zigzag patterns off of various pathways and ATV trails that crisscross the site. In this way all gross habitat types throughout the site were covered. Special emphasis was given to breaks in the overhead canopy that occur along the trails and associated rock walls on the site where reptiles could bask while remaining within the vicinity of sheltering rock crevices, as well as in the area of the wetlands where saturated ground could concentrate amphibians. For example, the flowing streambed portions of Wetland B were specifically searched during August for stream salamanders, such as juvenile two-lined salamanders (*Eurycea bislineata*) that may be commonly observed within perennial streams in this region during mid- to late Summer. Several hours were dedicated solely to a search for snakes in June of 2006, but none were observed. One box turtle was observed on the trail

between wetlands A and B during the taking of routine piezometer measurements on June 29, 2006

A list of all reptiles and amphibians observed on the site during the 2005-2006 surveys is provided in Table 6b.

Table 6b
Reptiles and Amphibians Observed at Emerald Ridge, 2005 - 2006

		Habitat Type				
Common name	*Scientific name*	U	FW	W	SC	SW
Box turtle	*Terrapene carolina*	X	X			
Northern red-backed salamander	*Plethodon cinereus*	X	X		X	
Northern two-lined salamander	*Eurycea bislineata*		X		X	
Spotted salamander	*Ambystoma malculatum*	X	X	X	X	X
Red-spotted newt	*Notophthalmus virdescens*	X	X	X	X	X
Marbled salamander	*Ambystoma opacum*	X	X		X	X
American toad	*Bufo americanus*	X			X	X
Wood frog	*Rana sylvatica*	X	X	X		X
Green frog	*Rana clamitans*			X	X	
Spring peeper	*Pseudacris crucifer*		X		X	
Pickerel frog	*Rana palustris*		X	X	X	

Habitat type: U - Upland Hardwood Forest, FW - Forested Wetland, W - Standing Water, SC - Stream Corridor, SW - Stone Walls

Source: Tim Miller Associates, Inc.; 2005, 2006

Breeding Birds

Breeding bird surveys were conducted on May 19 and June 14, 2006 between the hours of 5:00 AM and 10:30 AM to identify avian species using the project site. Weather on the dates of the surveys was fair with mostly sunny skies and temperatures ranging from the high fifties to the mid-sixties.

Breeding Bird Survey Methodology

In preparation for the breeding bird survey, the Town Wetland inspector was contacted to discuss survey methodologies. The Town's consultant recommended the use of the Cornell Lab of Ornithology's "Birds in Forested Landscapes" (BFL) survey protocol. This protocol calls for two separate site visits during which recorded calls of target species are played between an initial "Observation Period" and a subsequent "Behavior Watch Period". Recorded calls are played for one minute followed by one minute of observation then another minute of call playback followed by a two minutes of observation. While the protocol focuses on target species, the ten minute Observation and Behavior Watch Periods were used to record all avian species observed.

The protocol correlates defined forest types and regions with a single "Highest-Priority Species" and two to three "Other Priority Species". The site is best classified as an "Eastern Deciduous

Forest". The Highest-Priority Species associated with this forest type is the cerulean warbler. The worm-eating warbler, Eastern wood-pewee and red-headed woodpecker round out the "Other Priority Species" of the BFL designated Eastern Deciduous Forest. Other resources, including the Westchester County Endangered Species List, the Breeding Bird Atlas, the Putnam Valley Biodiversity Assessment Guideline, the NYSDEC list of Endangered, Threatened and Special Concern species and the United States Fish & Wildlife Service (USFWS) list of Threatened and Endangered Species were consulted to determine the possibility that the BFL identified species could use the habitat on the site as well as their state and local status. As a result of cross referencing the lists provided by each of these organizations it was determined that the bird survey would target the cerulean warbler, worm-eating warbler, and red-headed woodpecker. The Eastern wood-pewee was not included as it had been observed on site during an earlier survey.

Based on existing ecological community data from previous site visits including a bird survey conducted on July 11, 2005 as well as knowledge of alternate bird survey techniques, eight representative survey points were selected across the site. These points were chosen to provide data that would represent bird use in all ecological community types found on the property.

During the surveys, point counts were performed at a total of nine locations, one more than originally planned. The extra survey point was added to increase the probability of observing additional bird species. Point 1 is located near the northwest corner of proposed Lot #4. Point 2 is located in the northwest corner of the Proposed Conservation Easement Parcel south of proposed Lot #14. Point 3 is located near a northeast property line by proposed Lot #11. Point 4 is located in Wetland C. Point 5 is located in the Proposed Conservation Parcel south of Wetland C. Point 6 is located in the Proposed Conservation Parcel east of proposed Lot #12 in the vicinity of Existing Test Well #4. Point 7 is located in the northern end of Wetland B. Point 8 is located in the Proposed Conservation Parcel south of Lot #12. Point 9 is located west of Wetland A in Lot #9. Photographs were taken from each of the Bird Survey Points to document the habitat present near each point. These photos are presented at the back of this report.

At each of the data collection points, bird surveys were conducted per the required protocol. The surveyor recorded all birds heard and/or seen during the Observation and Behavior Watch Periods of the point counts. Recorded calls and songs of the "Target Species" were played at each survey point and observations documented. In addition, as the surveyor traveled between point locations and through the different habitats incidental observations of birds were documented. The additional data gathered while walking over the site was added to the list of species observed during the point counts. Birds on the wing were also included in the counts as "Flyby" to indicate that these individuals were observed passing overhead.

Breeding Bird Survey Observations

A total of 43 bird species were identified either on, adjacent to, or "flying by" the project site during the formal bird surveys. Of the Target Species, only the worm-eating warbler was observed on the project site.

Bird species were identified by their calls and/or by visual observation. This typically results in the recording of a higher proportion of those birds that are more vocal and/or have a loud call

(e.g. red-eyed vireo and ovenbird) and a lower proportion of those that are not as vocal and/or have softer or high pitched calls (e.g. black and white warbler and cedar waxwing).

Vocal birds may also be counted in habitats they do not typically use because their calls can carry for long distances, making it difficult to accurately place their location. During the surveys, there were occasions on which calling birds were not identified due to such factors as similarities in the calls of different species, duration of the call or song, or loss of song characteristics due to distance from the calling or singing bird.

Empidonax flycatchers were observed during the formal surveys. Identification of these flycatchers using visual observation alone is extremely difficult due to the fact that all five are almost identical in appearance. The Peterson Field Guide for Eastern Birds recommends that surveyors "[i]dentify by habitat and voice." The empidonax flycatchers observed during the surveys were not heard calling.

Of the birds identified during the survey, none are listed by the NYSDEC as protected.[8] According to the USFWS's website of listed threatened and endangered species, none of the observed species are afforded protection at the federal level.[9]

Table 6c presents the list of birds observed on the site throughout all surveys conducted during 2005-2006. The table is updated from the information provided in the DEIS based on the more formal breeding bird survey conducted during 2006. Five of these species were not observed during the formal bird survey but were incidentally identified during other wildlife and habitat surveys performed on the site. These species are included in Table 6c and marked with an asterisk.

[8] NYS DEC. 2006. Endangered, Threatened and Special Concern Fish and Wildlife Species of New York State: http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/etsclist.html

[9] http://www.fws.gov/endangered/wildlife.html

Table 6c
Birds Observed at Emerald Ridge, 2005 - 2006

		Habitat Type				
Common Name	***Scientific Name***	FW	HF	ED	FB	SF
American Crow	*Corvus brachyrhynchos*	X		X	X	X
American Goldfinch	*Carduelis tristis*				X	X
American Robin	*Turdus migratorius*	X				X
Baltimore Oriole	*Icterus galbula*	X		X		X
Black-and-white Warbler	*Mniotilta varia*					X
Black-capped Chickadee	*Parus atricapillus*	X	X	X	X	X
Black-throated Green Warbler	*Dendroica virens*					X
Blue Jay	*Cyanocitta cristata*	X		X	X	X
Brown-headed Cowbird	*Molothrus ater*			X		
Canada Goose	*Branta canadensis*				X	
Cedar Waxwing	*Bombycilla cedrorum*				X	X
Common Grackle	*Quiscalus quiscula*			X		
Downy Woodpecker	*Picoides pubescens*		X			X
Eastern Bluebird	*Sialia sialis*					X
Eastern Phoebe	*Sayornis phoebe*			X		
Eastern Towhee	*Pipilo erythrophthaslmus*					X
Eastern Wood-Pewee	*Contopus Virens*	X	X			X
Empidonax flycatcher	*Empidonax sp.*	X				
Gray Catbird	*Dumetella carolinensis*			X		
Hairy Woodpecker	*Picoides villosus*	X		X		X
Hermit Thrush	*Catharus guttatus*					X
House Finch*	*Carpodacus mexicanus*			X		
House Wren*	*Troglodytes aedon*			X		
Indigo Bunting	*Passerina cyanea*			X		
Mourning Dove	*Zenaida macroura*			X		
Northern Cardinal	*Cardinalis cardinalis*			X		
Northern Flicker	*Colaptes auratus*		X	X	X	X
Northern Mockingbird	*Mimus polyglottos*			X		
Ovenbird	*Seiurus aurocapillus*	X	X			X
Pileated Woodpecker	*Dryocopus pileatus*		X		X	X
Red-bellied Woodpecker	*Melanerpes carolinus*	X	X	X	X	X
Red-eyed Vireo	*Vireo olivaceus*	X	X	X	X	X
Red-winged blackbird	*Ageliaus phoeniceus*	X	X			
Red-tailed Hawk	*Buteo jamaicensis*	X		X		X
Rose-breasted Grosbeak	*Pheucticus ludovicianus*					X
Scarlet Tanager	*Piranga olivacea*					X
Slate-colored Junco*	*Junco hyemalis*	X				X
Song Sparrow	*Melospiza melodia*			X		
Tree Swallow*	*Tachycineta bicolor*				X	
Tufted Titmouse	*Parus bicolor*	X	X	X	X	X
Turkey Vulture	*Cathartes aura*				X	
Veery	*Catharus fuscescens*	X	X	X	X	X
Warbling Vireo*	*Vireo gilvus*			X		X
White-breasted Nuthatch	*Sitta carolinensis*	X	X			X

Table 5c continued on following page.

Table 6c continued
Birds Observed at Emerald Ridge, 2005 - 2006

		Habitat Type				
Common Name	***Scientific Name***	FW	HF	ED	FB	SF
Wild Turkey	*Meleagris galloparvo*					X
Wood Thrush	*Hylocichla mustelina*	X	X	X		X
Worm-eating Warbler	*Helmintheros verivorous*					X
Yellow Warbler	*Dendroica petechia*	X	X			

Habitat type: ED = Edge Habitat, FB = Fly by, FW = Palustrine Forested Wetland, HF = Hemlock Northern Hardwood Forest, SF = Successional Northern Hardwood Forest.
Habitat Type by Survey Point: Point #1 = ED, Point #2 = SF, Point #3 = HF, Point #4 = FW, Point #5 = ED/SF, Point #6 = SF, Point #7 = FW, Point #8 = SF, Point #9 = SF.

* Species observed during site visits other than the formal bird surveys.
Source: Tim Miller Associates, Inc., 2006

Vernal Pool Amphibians

Spring vernal pool breeding surveys were conducted in on site Wetlands A, C and D during the late afternoon and evenings of March 13, March 28, April 3 and April 14, 2006, at a time when several other sites in Orange, Ulster, Westchester and Putnam Counties were being surveyed and it was known that both salamanders and frogs were actively breeding within the lower Hudson River Valley. Surveys were conducted by personnel equipped with flashlights and dip nets and wearing knee high boots to allow the participants to readily access the full perimeter of the wetland pools. In addition to observations of adults, the mating calls of frogs and the identification of egg masses or salamander spermatophores were also reported for each visit.

Four species of pool breeding amphibians were identified during the course of the Spring surveys, and one species during Fall surveys, as listed in Table 7. Three of these species are dependent on vernal hydrology for successful breeding; spring peepers will also utilize permanently ponded wetlands. Two of these species were mole salamanders, a family of terrestrial, burrowing salamanders that includes several common to uncommon species throughout New York and across the United States.

Table 7
Observed Pool Breeding Species at Emerald Ridge

Common Name	Scientific Name	Breeding Period	Location Observed	Method of Identification
Wood frog	*Rana sylvatica*	Spring	Wetlands A, C and D	Direct observation of adults, or mating calls, or egg masses
Spring peeper	*Hyla crucifer*	Spring	Wetlands A, C and D	Direct observation of adults, or mating calls
Spotted salamander	*Ambystoma maculatum*	Spring	Wetlands A, C and D	Direct observation of adults and egg masses (one egg mass observed in Wetland A)
Marbled Salamander	*Ambystoma opacum*	Fall	Wetlands C and D	Direct observation of Fall nesting female; larvae during Winter and Spring surveys

Source: Tim Miller Associates, Inc., 2005-2006.

Wetland A

In Wetland A, sporadic calls of wood frogs and Spring peepers were noted, although no breeding individuals were observed. One wood frog egg mass and one spotted salamander egg mass were observed in Wetland A on April 3, 2006. By way of reference, vernal pools that were surveyed during the same period (including Wetlands C and D on the Emerald Ridge site, as well as in southern Ulster and Orange County) had readily observable aggregations of breeding spotted salamanders and multiple egg masses present, so the surveyors are confident that the timing of the surveys at Emerald Ridge was appropriate for this year. While some evidence of vernal hydrology at Wetland A was observed during the March and April surveys, no evidence of amphibian activity was observed.

As described below in the discussion of the hydrology study performed for the site, Wetland A has only one small area where significant pooling occurs (an area approximately six feet by twelve feet), and the surface wetland hydrology dries up well before the requisite time period for maturation of the larvae to a terrestrial phase. In the two years of observations, Wetland A had only marginal hydrology for the needs of the target species (ambystomid salamanders), and the standing surface water had dried up by mid-May. Thus it is the conclusion of this study that Wetland A does not have suitable hydrology to support a viable population of ambystomid salamanders, although it was observed that one individual did attempt egg laying in the isolated pool.

Further indirect evidence of the lack of mole salamander larvae in Wetland A during these surveys was the high density of mosquito larvae that occupied the pools until they dried up in late Spring. Had mole salamander larvae been present, it would be expected that their predation could have maintained the population of mosquito larvae at lower densities. Notably lower densities of mosquito larvae were observed in the pools of water at Wetlands C and D where some breeding success of both spotted salamanders and marbled salamanders was observed this year.

Wetland B

In Wetland B, isolated pockets of water were observed adjacent to the main stream flow in this flowing wetland, however, no breeding amphibians were noted during the Spring surveys. During subsequent site walks by early- to mid-May, the water pockets were dry indicating that the hydroperiod for these small pools was not long enough to sustain egg laying, hatching and larval development for vernal pool amphibians.

Wetland C

In Wetland C, a single seasonal pool of water was present during periods of high water table. This pool was confined narrowly within the delineated boundary of the lower portion of this wetland and was the observed site for adults and larvae of several vernal pool breeding species (Table 7). This pool had up to 14 separate wood frog egg masses during the 2006 survey. The main pool, with a maximum estimated depth of up to 18-24 inches, was persistent from late Fall through early Summer, although it fragmented into numerous smaller pools as the water table descended. During the 2006 surveys, some eggs masses were observed to be stranded and to dry up as some of the fragmented pools became desiccated. More than 25 individual spotted salamanders were observed during the two April surveys, with numerous egg masses observed

before and after these dates. In addition, marbled salamander larvae were observed in the pools on all survey dates. The marbled salamander is a state listed species of special concern.

Wetland D

In Wetland D, a single seasonal pool of water was present that was confined broadly within the delineated boundary of the lower portion of this wetland. This pool, also with an estimated depth of up to 18-24 inches, was persistent from late Fall through early Summer and was the observed site for adults and larvae of the same vernal pool breeding species observed in Wetlands C (Table 7), including marbled salamanders. Spotted salamander adults, seen in this wetlands only on the final night of the 4-day survey, were observed in greatest numbers within this wetlands during the Spring 2006 surveys. Fewer egg masses were observed within this pool than within adjacent Wetlands C and, of the four wood frog egg masses observed here in 2006, three became stranded on dry ground and desiccated during the transient low water levels observed in late March. Specimens of an invertebrate vernal pool inhabitant, the fingernail clam (Family Sphaeriidae) were found in the surface sediment of this wetland as it dried.

5: Specific Analysis for Potential Use by Rare or Endangered Wildlife Species

According to the NYSDEC Natural Heritage Program, there are no records or rare or endangered wildlife species known to inhabit the site or nearby areas. On-site observations are consistent with this assessment, with some caveats as described below.

The USFWS has identified the potential for the Federally- and State- listed endangered Indiana bat to occur within the proposed project area as it "...is approximately 16 miles of known roost sites and approximately 37 miles from known hibernacula...". In addition, the Federally threatened and State endangered bog turtle may be found in the vicinity of the project site.

Bog Turtle

A thorough visual inspection of the site was performed to determine the presence or absence of the three (3) criteria identified as key indicators of bog turtle habitat in the USFWS Phase I habitat assessment protocols[11], namely: suitable hydrology, suitable soils, and suitable vegetation.

Definitions of Suitable Criteria for Bog Turtle

The various indicators used to assess the presence or absence of the three criteria are based in part on information provided in the USFWS habitat assessment protocols. However, these indicators were expanded based on the surveyor's experience with this species and its habitat.

Definitions of suitable criteria are as follows:

- SUITABLE HYDROLOGY: Suitable hydrology is considered to be present if the wetland contains clear, cold surface water typically between 0.5 to 6 inches deep (may be

[11] "Guidelines for Bog Turtle Surveys" *In* U.S. Fish and Wildlife Service. 2001. Bog Turtle (*Clemmys muhlenbergii),* Northern Population, Recovery Plan. Hadley, Massachusetts. 103 pp.

greater than 6 inches deep in some areas). This surface water occurs in small pools and hollows between tussocks and in slow-moving rivulets. These rivulets may be natural topographic features or the result of repeated travel by larger animals (i.e. deer runs). In many sites, these small hydrological features coalesce to form small discharge streams. In southeastern New York, ideal bog turtle habitat is frequently associated with the discharge of alkaline (calcareous) groundwater. In drier months, much of the wetland may contain only saturated soils with standing water confined to spring heads.

- SUITABLE SOILS: Suitable soils are considered to be present if the soil is soft, deep and mucky enough to permit burrowing by the bog turtle. Soils can be either mineral soils that have a mucky surface horizon or highly organic (muck and peat) soils. Suitable soils are typically classified as somewhat poorly drained, poorly drained, or very poorly drained. In southeastern New York, suitable soils are frequently derived from calcareous (lime rich) glacial till and outwash and have a circumneutral to alkaline pH between 6.6 and 8.4. Typical soil series found at known bog turtle sites in the Hudson Valley include: Sun silt loam, Wayland silt loam, Canandaigua silt loam, Palms muck, and Carlisle muck. A deep, soft substrate is critical for winter time hibernation and aestivation during extreme summer time heat.

- SUITABLE VEGETATION: Suitable vegetation is considered to be present if the wetland has an open canopy formed by low growing plants that allow sunlight to reach basking surfaces. The dominant species include tussock forming grasses, sedges, and moss. In ungrazed wetlands, short shrubs less than two (2) feet tall may be relatively abundant and areas of taller shrubs and young trees can occur in small patches. Bog turtle habitat often occurs within a wetland complex comprised of forested or shrub swamp and open emergent plant communities. These open, tussocky plant communities are crucial for bog turtles as they provide key spring time basking and nesting habitats.

In the mid-Hudson valley, bog turtles are frequently (but not always) associated with the rich sloping fen, rich graminoid fen, and rich shrub fen plant communities[12]. Bog turtle habitat may also include other plant communities such as wet sedge meadows, shallow emergent marshes, inland poor fens and openings within shrub bogs. What each of these communities has in common is a relatively open canopy with at least some areas dominated by low, tussock forming graminoid species.

None of the wetlands within the project area meet these specific criteria and thus no habitat in the project area would be designated as “critical habitat” pursuant to the Endangered Species Act. The current field surveys found no bog turtle habitat on the site.

Indiana Bat

The site does contain limited potential roosting/maternity trees (trees with exfoliating bark and/or split branches or trunks) and limited potential foraging habitat (upland forest canopy) that could accommodate Indiana bats. Potential roosting/maternity trees are few and far between on the subject site (this species generally roosts in several trees in relatively close proximity over the summer months) and have little direct exposure to solar radiation (roosts warmed by sunlight are preferred to those in the shade) with the exception of the trees along the extreme

[12] For descriptions see: Reschke, C. 1990. Ecological Communities of New York State. New York Natural Heritage Program. NYS Department of Environmental Conservation. 96pp.

southwest property boundary. Although not preferred habitat, Indiana bats do forage in upland forest canopies, with which the site is over 75% covered. Additional foraging habitat in the immediate vicinity of the project site includes the early successional old field immediately adjacent to the extreme southwest property boundary.

During a habitat assessment in March of 2006, detailed observations were made regarding the numbers of potential maternity/roosting trees on the Emerald Ridge property, and their location relative to solar exposure and other habitat requirements. Special care was taken to search for black locust (*Robinia pseudoacacia*), shagbark hickory (*Carya ovata*) and standing dead trees, which are the preferred trees used due to the overhanging or peeling bark.

Only a very small number of shagbark hickories were observed (n=21), with five of the trees being less than 6 inches in nominal diameter. No black locusts were observed, and standing dead trees are uncommon. The conclusion of this site evaluation is that the site has a very low probability of supporting Indiana bats, but that some potential roosting trees do exist. Most of these trees lie outside of the proposed limits of disturbance, as described below.

New York State Listed Species

In addition to the two species discussed above, habitat assessments for other state listed species were also conducted. The habitat and wildlife investigations employed a series of random/zig-zag transects with observation, listening, and/or ground searches being conducted as site specific features changed along the walking transect route (i.e. upland hardwood forest to forested wetland, to stream corridor, etc.). The route of the transects generally followed the existing trail network on the site.

The random nature of these transects allowed the investigator to observe and actively investigate features of interest along the way. This tactic also allowed data to be collected from a greater variety of micro-habitats.

The site was examined for potential use by a number of rare, endangered or protected species, as listed by the NYS DEC. Based strictly on the wooded nature of the property and the existence of identified wetland areas, habitat potential for the following species listed by the State as endangered or threatened was analyzed:

- Bog turtle - Endangered
- Mud turtle - Endangered
- Tiger salamander - Endangered
- Northern cricket frog - Endangered
- Fence lizard - Threatened
- Timber rattlesnake - Threatened

Habitat potential for the following species and groups of special concern and regional development-sensitive focal species was also evaluated:

- Spotted turtle
- Wood turtle
- Eastern box turtle
- Eastern hognose snake

- Worm snake
- Black racer snake
- Rat snake
- Ribbon snake
- Jefferson salamander
- Blue spotted salamander
- Dusky salamander
- Slimy salamander
- Five-lined skink
- Cooper's hawk
- Interior forest bird species.

Several of these species were eliminated from consideration due to the lack of known populations in Putnam Valley specifically or Putnam County generally:

- Mud turtle - north of its known range, lack of open field areas, lack of suitable open water
- Tiger salamander - north of its known range, confined to eastern Long Island
- Northern cricket frog - requires a sunny pond, known only in the Hudson Highlands and Shawangunk area (Catskills)
- Timber rattlesnake - known in higher altitudes, rugged terrain with open areas of rocky ledges for basking

Habitat conditions available on the site (forested upland and wetland, stream corridors, stone walls) were then considered and several species eliminated from consideration.

- Spotted turtle - lack of suitable open water and basking areas
- Wood turtle - lack of suitable stream corridors with sandy banks and overhangs, open meadows for nesting and foraging. Wood turtles are known to occur in the Peekskill Hollow Brook corridor
- Fence lizard - similar to Timber rattlesnake for terrain and basking, does not prefer closed canopy woodlands
- Dusky salamander - Not found on site, lack of suitable stream habitat
- Slimy salamander - Not found on site, lack of suitable forested habitat
- Five-lined skink - Not found on site, lack of suitable steep rocky habitat

Regarding the potential presence of bog turtles, as described above the closed canopy of the forested wetlands on site and the lack of open fen habitat would not provide the necessary basking and nesting opportunities for this well-studied and surveyed species. There are no suitable corridor connections to other sites that may support bog turtles.

Evaluations of site specific requirements were then conducted for the remaining State listed species (Eastern box turtle, Eastern hognose snake, worm snake, marbled salamander, Jefferson salamander, blue-spotted salamander) and MCA development-sensitive focal species.

Snakes

There is the possibility that habitat on-site could support the Eastern hognose snake (*Heterodon platyrhinos*). This species is listed by New York State as being a species of special concern (NYSDEC, 2001), although it is identified as being locally common in Westchester County. It is a highly secretive species that may utilize the stone walls and wooded areas of the site for cover and feeding. Since this species also is adaptable to new fields, pastures and suburban areas, the proposed residential development, which will impact approximately 16 percent of the property, should not result in a significant adverse impact to the hognose snake, if in fact it is present on this site.

A similar situation exists for the Eastern worm snake (*Carphophis amoenus*). The worm snake inhabits moist wooded areas with sandy or rocky substrate, often burrowing underground for long periods to avoid dry surface conditions. Its main food sources are earthworms and salamanders, which are plentiful on this site along the stream corridors and within the existing stone walls. If there is a population of worm snakes on this site, they are likely to avoid the areas of new development but should otherwise be unaffected by site development in the long term. In the short term, site excavation and blasting may cause some individuals close to areas of disturbance to relocate temporarily. Large open space areas will remain around the perimeter of the site, adjacent to the stream corridors and on the parcels to the north, providing space for temporary movement if required. No worm snakes were observed during on-site field investigations.

There is the possibility that habitat on-site could support black racer, rat or ribbon snakes, although none were observed during the on-site field investigations for reptiles, nor observed incidental to the other surveys.

Mole Salamanders

Detailed description of surveys for ambystomid salamanders are described above.

Turtles

As noted above, one Eastern box turtle was observed on the site, between Wetlands A and B. Eastern box turtles occupy the woods of this site although the population may be low, as reflected by the single observation over two years of survey activity. It is primarily a terrestrial turtle, although it may use stream beds or shallow ponds during the hot summer months. The major threat to box turtles appears to be pesticide poisoning and collection as pets and it has only recently been listed as a State species of special concern

Birds

Of the NYS listed birds cited in the MCA Croton-to-Highlands Biodiversity Plan, only one species, Cooper's hawk might be expected to occupy the habitats present on the project site. The species was not observed during the on site field investigations. The MCA general list of development-sensitive species provided in the Biodiversity Plan does include twenty-two interior forest species that also might occupy the project site forests and wetlands areas. Of these twenty-one species, 9 were observed during the 2005-2006 field investigations (Table 6c).

Table 8 and Table 9 present the state listed and/or MCA Focal species that were observed on the site throughout the two years of wildlife survey activities.

Table 8
State Listed and other Focal Species Observed - Non-Avian Species

Common Name	Scientific Name	Dates Observed	Location Observed
Wood frog	*Rana sylvatica*	April 2006	Wetlands A, C and D
Eastern Box Turtle	*Terrapene carolina*	June 2006	North end of Wetland B
Red-spotted Newt	*Notophthalmus virdescens*	May, August 2006	Wetland A
Spotted salamander	*Ambystoma maculatum*	March/April 2006	Wetlands A, C and D
Marbled Salamander	*Ambystoma opacum*	January, March, April, September 2006	Wetlands C and D

Source: Tim Miller Associates, Inc., 2005-2006.

Table 9
State Listed and other Bird Focal Species Observed

Common Name	Scientific Name	Dates Observed	Observed at Bird Survey Point
Black-and-white Warbler	*Mniotilta varia*	7/11/05 & 6/14/06	6
Black-throated Green Warbler	*Dendroica virens*	5/19/06	6
Eastern Bluebird	*Sialia sialis*	5/19/06	1
Eastern Towhee	*Pipilo erythrophthaslmus*	6/14/06	6
Empidonax flycatcher*	*Empidonax* sp.	5/19/06	7
Indigo Bunting	*Passerina cyanea*	5/19/06	1
Ovenbird	*Seiurus aurocapillus*	7/11/05, 5/19/06 & 6/14/06	2, 3, 4, 8 and 9
Pileated Woodpecker	*Dryocopus pileatus*	5/19/06 & 6/14/06	5 Flyby and 8
Veery	*Catharus fuscescens*	5/19/06 & 6/14/06	1, 3, 4, 5, 6, 7, 8 and 9
Wood Thrush	*Hylocichla mustelina*	7/11/05, 5/19/06 & 6/14/06	1, 2, 3, 4, 5, 6, 7, 8 and 9
Worm-eating Warbler	*Helmintheros verivorous*	6/14/06	8

Habitat type: ED = Edge Habitat, FB = Fly by, FW = Palustrine Forested Wetland, HF = Hemlock Northern Hardwood Forest, SF = Successional Northern Hardwood Forest.

Habitat Type by Survey Point: Point #1 = ED, Point #2 = SF, Point #3 = HF, Point #4 = FW, Point #5 = ED/SF, Point #6 = SF, Point #7 = FW, Point #8 = SF, Point #9 = SF.

* Includes the MCA Focal Species least flycatcher.
Source: Tim Miller Associates, Inc., 2005 and 2006

6: Habitat Management Plan

In summary, the biodiversity study completed for the proposed Emerald Ridge subdivision identified 11 bird species and 5 non-avian animal species that are listed as focal species or New York State listed species of special concern.

The non-avian species include three species that are vernal pool breeders, a terrestrial newt and a terrestrial turtle. These species are listed above. Of the vernal pool dependent species, all three were observed within wetlands C and D, which will not be disturbed and will be preserved within a large open space parcel. Wood frogs and one spotted salamander were observed within Wetland A, which will also be preserved within a conservation easement. It is noted that the spotted salamander, while a focal species on the MCA lists, is not a state listed species of special concern. Eastern newts were also observed in Wetland A.

The Eastern box turtle was observed on the north edge of Wetland B on a late spring day. As shown on the accompanying aerial photo, this individual was located outside of the limits of disturbance for the proposed development. However, the box turtle is a highly mobile animal, and will not be restricted to only those areas shown as outside of the limits of disturbance. Thus mitigating measures for the preservation of habitat and wildlife corridors are proposed as described below.

For the bird species, nine species identified as preferring interior forest habitats were observed. Of these species, four were observed throughout the site (ovenbird, veery, pileated woodpecker and wood thrush), including the eastern portion that will be preserved in the open space parcel. Four species (worm-eating warbler, black and white warbler, black throated green warbler and eastern towhee) were only observed once, in areas of the site that will not be disturbed. The least flycatcher was observed along the eastern edge of Wetland B, which will also be preserved within a conservation easement. Since the largest part of the site that is to be preserved, more than 31 acres in the eastern part of the site, is suitable habitat for the interior species, and large areas of woodlands will remain on the adjacent parcels, it is not expected that there will be a long term impact to avian focal species as a result of this development. While certain individuals might be displaced, the populations using this site will not be affected by the proposed development.

The two remaining focal species, eastern bluebird and indigo bunting, were observed along the edge of the meadow area west of the site, which will not be disturbed.

Based on the findings of this ecological assessment, the applicant has revised the proposed subdivision layout to preserve important areas of wildlife habitat and maintain corridors between similar habitat types.

This site is part of a continuous wooded area that extends from Peekskill Hollow Road north through extensive areas of Putnam Valley. The ecotypes consist primarily of upland forested areas with stream corridors, as well as the formation of wooded swamps in depressional and flat areas. Putnam Valley is known for areas of steep slope with rocky substrates that drain to depressional areas and drainageways within ridge and valley systems. The Applicant's consultants have walked these wooded areas north and west of the site for this and other projects, and found these forests to be consistent ecologically with the subject property, so it is

likely that the distribution of species is similar to that observed or expected on the Emerald Ridge site, as described above.

The proposed project as revised will result in the loss of approximately 12 acres of the roughly 77 acres of forested habitat on-site and hundreds of acres of contiguous adjacent habitat off-site. Long term impacts to wildlife species on this site as a result of the project relate to fragmenting of the existing closed canopy of the site and the disturbance of possible wildlife corridors. With the reduction in overall site disturbance, and the large expanses of open space that will be preserved, fragmentation is not expected to be a concern except in that area between Wetlands A and B. Several measures are proposed to mitigate these potential impacts.

As noted above, the project site is not located within or immediately adjacent to any of the "biotic planning units" (BPU) or biodiversity corridors identified in the Croton-to-Highlands Biodiversity Plan. The vast majority of recommendations for land preservation and local land use planning made in the plan focus on the steps and procedures municipalities can take to promote the protection of biodiversity. One of the recommendations for land preservation made in that plan, the use of conservation easements, has been proposed as part of the project.

With the revised plans, large areas of conservation easement and dedicated open space are proposed for portions of the site that contain wetlands and wetland buffer areas, as well as entire wooded upland that makes up the eastern part of the site. These conservation easements are proposed to accommodate the movement of wildlife within the project site as well as to the adjoining open space lands to the north, east and west. These wildlife corridors would allow for ease of movement for indicator species between areas that contribute to the biodiversity of this area of the Town, including Peekskill Hollow Brook and the large wetland area that extends off-site to the north of the project site. The land to the north that would continue the system of open space on the project site is part of the Floradan Estates community and provides habitat for a variety of species. The boundaries of these conservation areas where they exist on individual parcels will be demarcated with split rail fencing, boulders or other manner as deemed appropriate by the Planning Board.

As part of the plan to provide easements for preservation of important site habitat, an open space parcel will be preserved in the eastern part of the site. This parcel will be 31 acres in size, and include all of Wetlands C and D as well as extensive buffer areas around these wetlands.

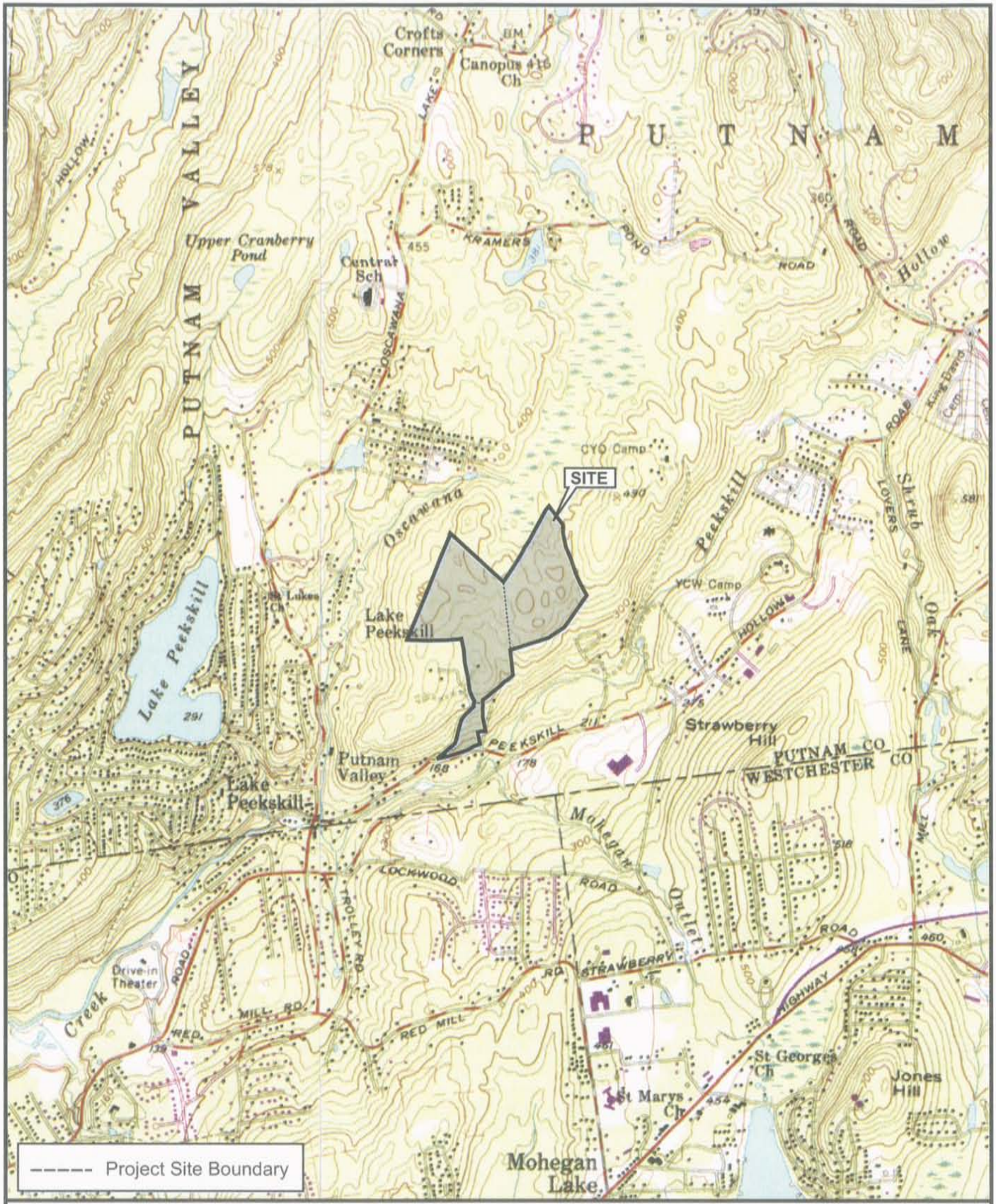
Wetland B will also be preserved within an easement area, with a connection to the open space parcel for continued wildlife movement. Buffers are also preserved, and in some areas expanded within the easement.

At Wetland A, the entire wetland and majority of the adjacent area will be preserved in conservation easement. One boundary of that easement area is an existing stone wall that will be preserved, thereby also preserving this habitat feature known to be used by amphibians, reptiles and small mammals. The easement extends to the "point" at the northern property boundary, ensuring a long term connection to the off site woodlands and wetlands to the north.

In addition, areas between houses will remain undisturbed wherever possible, thereby affording species more tolerant of disturbance and development the ability to travel between remaining

suitable habitat. These routes would require landbound wildlife to cross the lightly used residential road. With the revisions to the subdivision plan and the elimination of all the eastern lots, a corridor more than 300 feet wide will be maintained between Wetland B and the preserved wooded interior on the new open space parcel. This does not account for the additional off-site wooded areas just south of this connection, which makes the total corridor more than 600 feet wide. Regarding the connection between Wetland B and the wetlands and wooded areas off site to the north, there will be alterations in this area, as shown on the subdivision plans. Approximately 800 linear feet of road and five residences will be constructed in this area. This is unavoidable, particularly with the overall reduction of the project, and this is prime upland area for residential development. The potential impacts for this construction will be mitigated with the use of “Cape Cod” style curbing, which will allow for the passage of smaller wildlife without interruption by hard, steep granite or asphalt curbing.

The individual residences are placed more than 200 feet apart, and the road will not be lit, so that wildlife moving at night will not be distracted or intimidated by artificial lighting. With only seven houses using this section of road, there will not be enough traffic to create a significant impediment to wildlife movement, and not a long enough stretch of straight road for vehicle speed to be an issue.



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Regional Location Map

Emerald Ridge Subdivision

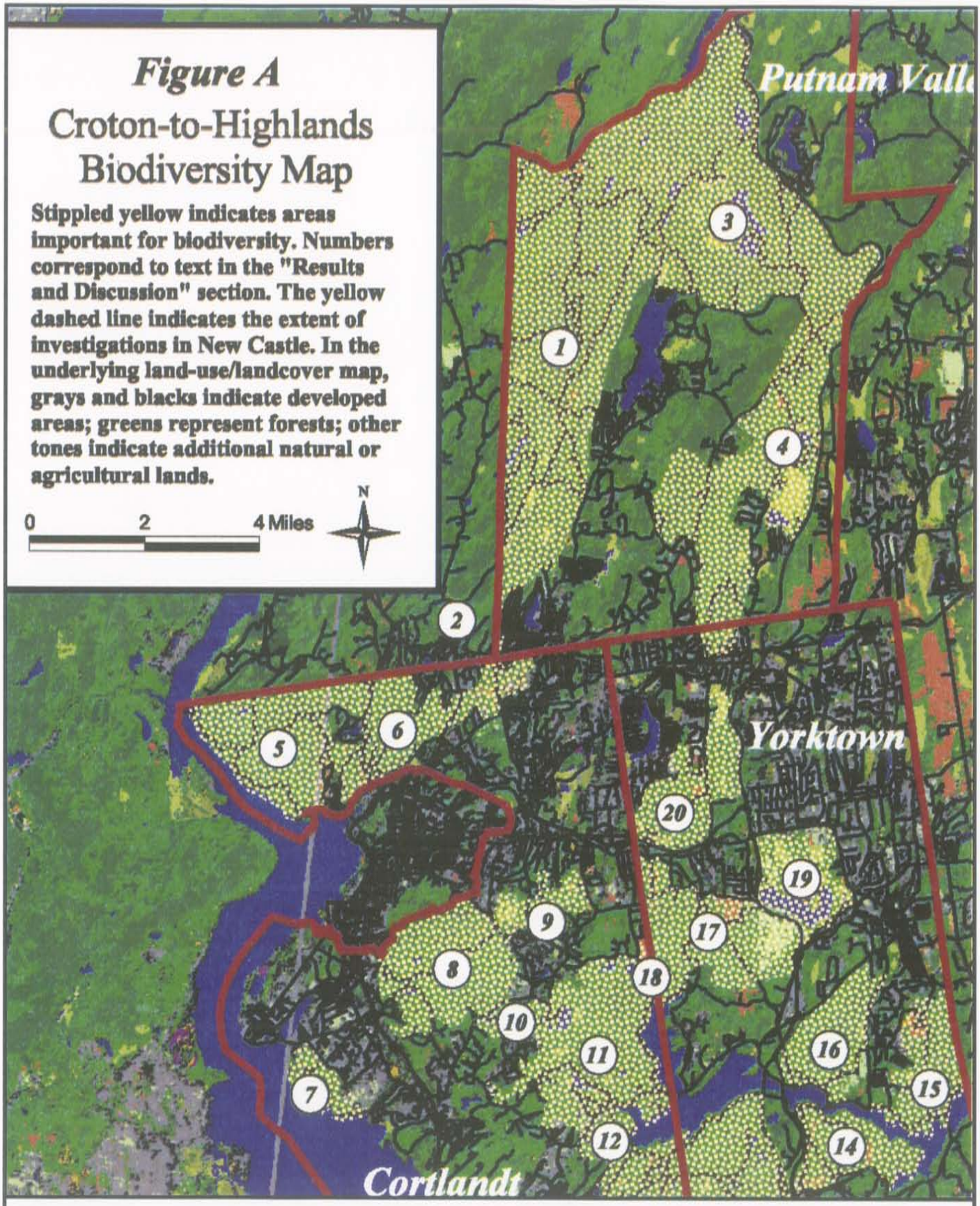
Town of Putnam Valley, Putnam County, New York

Base Map: USGS Topographic Map, Mohegan Lake Quad (1981)

Scale: 1 inch = 2,000 feet

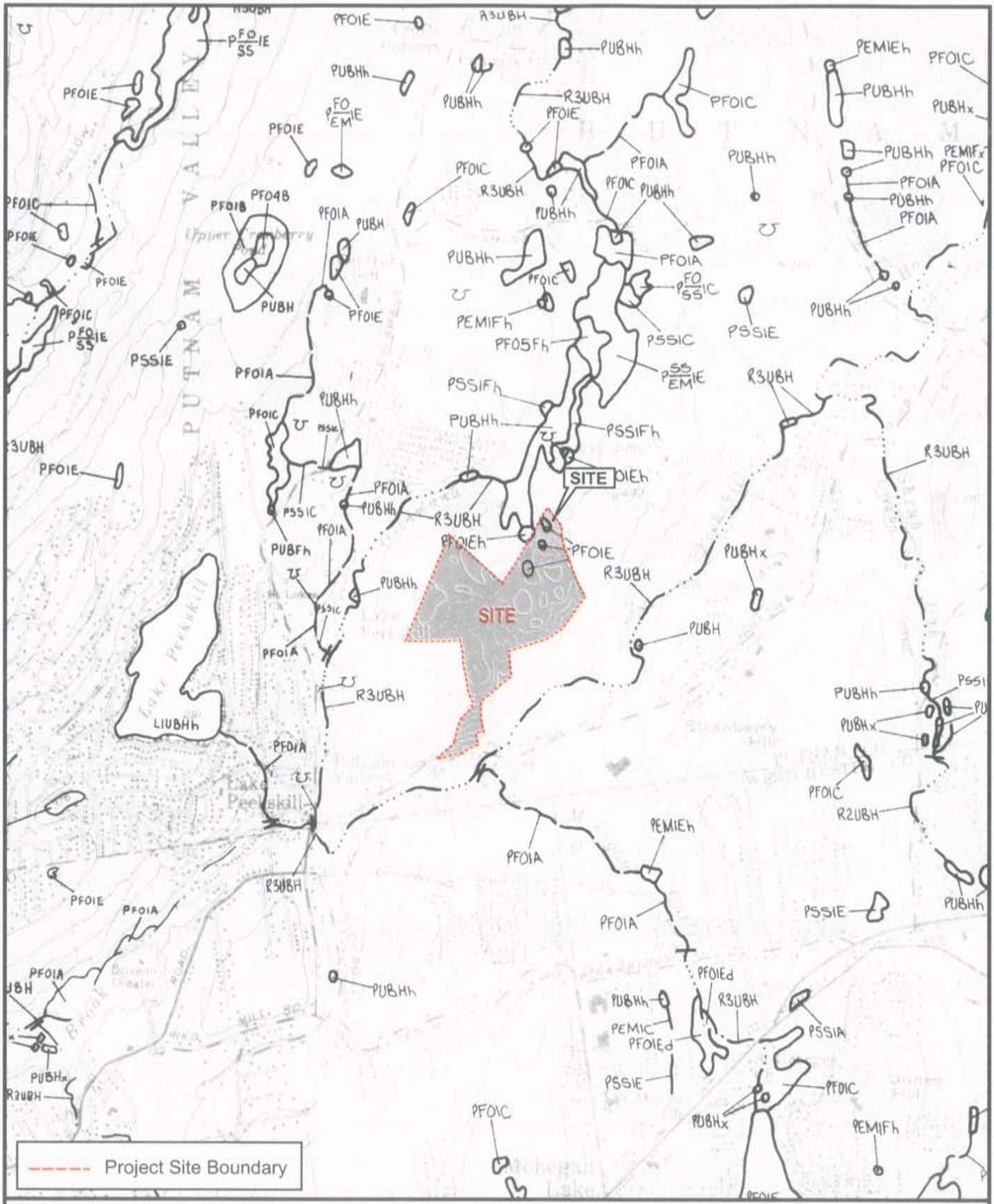
File 04010 04/27/05
JS:\04010\Site Location Map.cdr

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418



Croton to Highlands Biodiversity Map
Emerald Ridge Subdivision
Town of Putnam Valley, Putnam County, New York
Source: Croton to Highlands Biodiversity Plan
Metropolitan Conservation Alliance
Scale: Graphic

File 04010 08/15/05
JS:\04010\Fig Fig 3.6-3.cdr
Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418



NWI Map

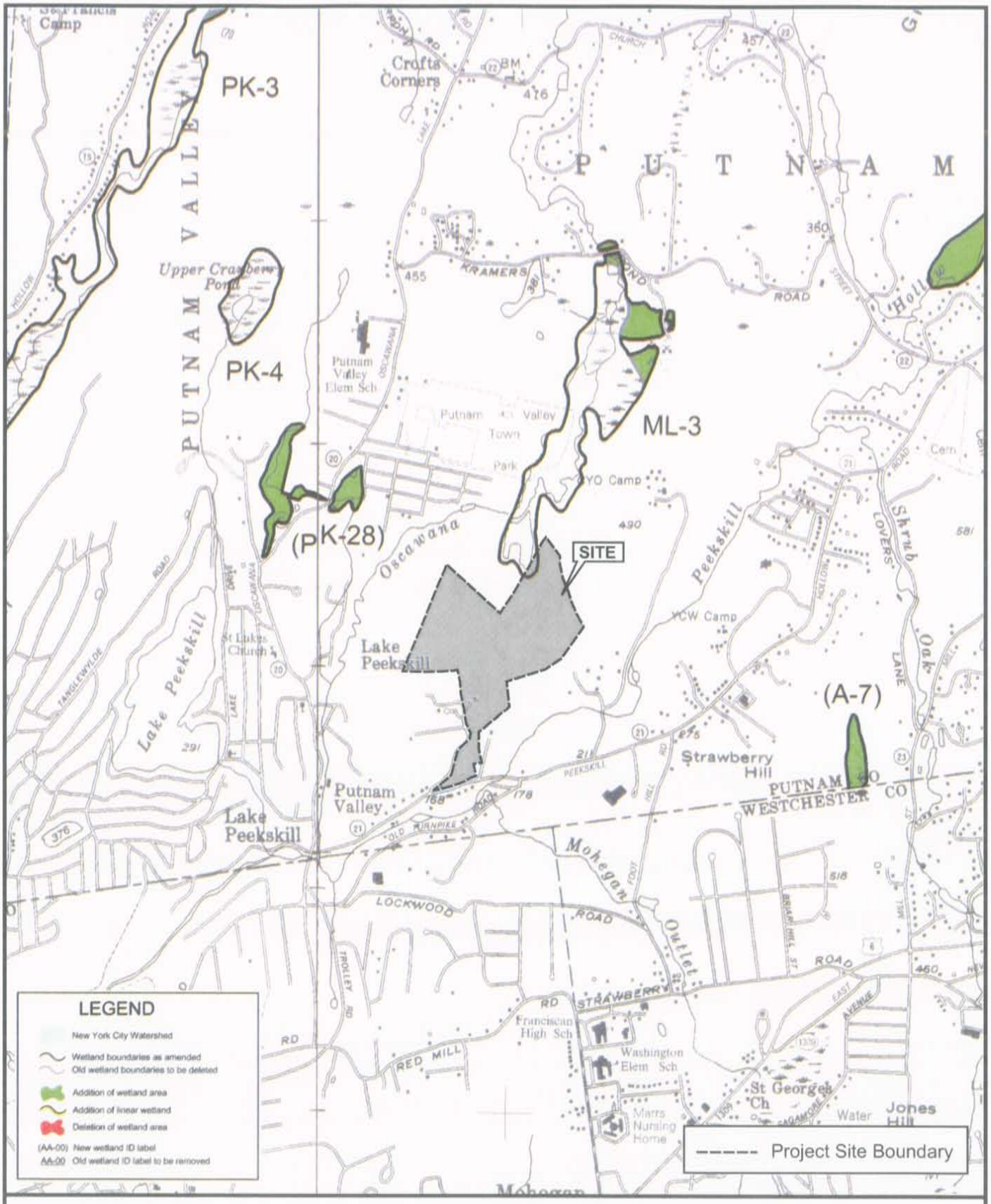
Emerald Ridge Subdivision

Town of Putnam Valley, Putnam County, New York

Base Map: National Wetlands Inventory Map
U.S. Dept. of the Interior, Fish and Wildlife Service
Scale: 1 inch = 2,000 feet

File 04010 08/12/05
JS:\04010\Fig 3.2-2.cdr

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418



DEC Wetlands Map

Emerald Ridge Subdivision

Town of Putnam Valley, Putnam County, New York

Base Map: NYSDEC Wetlands Map, rev. 2004

Scale: 1 inch = 2,000 feet

File 04010 08/16/05
JS:\04010\Fig 3.2-1.cdr

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

File 04010 08/15/05
JS:\04010\Fig Fig 3.6-2.cdr

Aerial Photo of Site

Emerald Ridge Subdivision
Town of Putnam Valley, Putnam County, New York
Source: NYS GIS Clearinghouse, 2004 Aerial Photo
Approx. Scale: 1 inch = 425 feet

Tim Miller Associates, Inc.,10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

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Vegetative Associations
Emerald Ridge Subdivision
Town of Putnam Valley, Putnam County, New York
Source: NYS GIS Clearinghouse, 2004 Aerial Photo
Approx. Scale: 1 inch = 475 feet

File 04010 12/28/05
JS:\04010\

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Distance to Off-site Wetland ML-3
Emerald Ridge Subdivision
Town of Putnam Valley, Putnam County, New York
Source: NYS GIS Clearinghouse, 2004 Aerial Photo
Approx. Scale: 1 inch = 475 feet

File 04010 12/28/05
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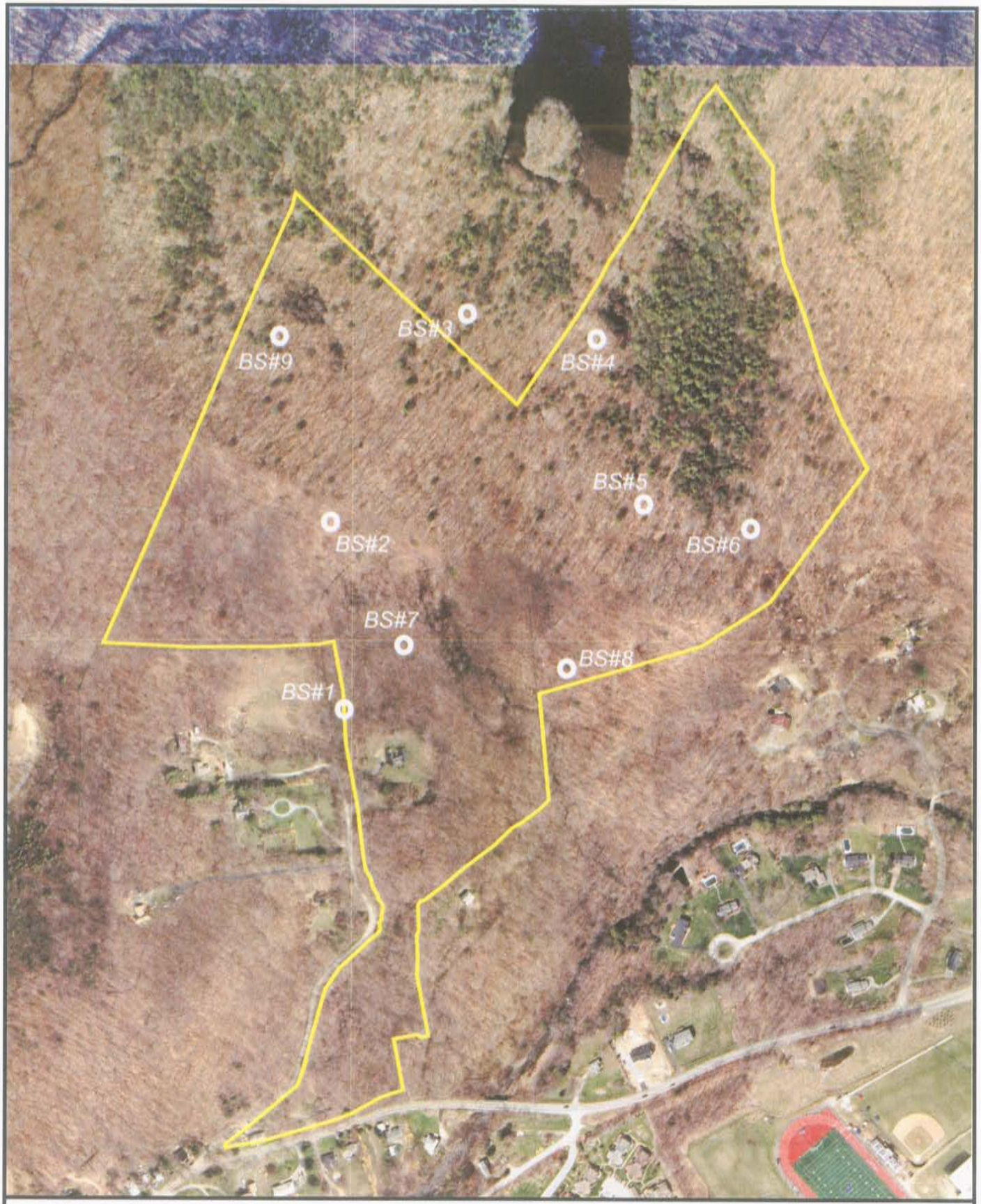

Location of Bird Survey Points

Emerald Ridge

Town of Putnam Valley, Putnam County, New York

Source: NYS GIS Clearinghouse, 2004 Aerial Photo

Approx. Scale: 1 inch = 475 feet

File 04010 12/28/05
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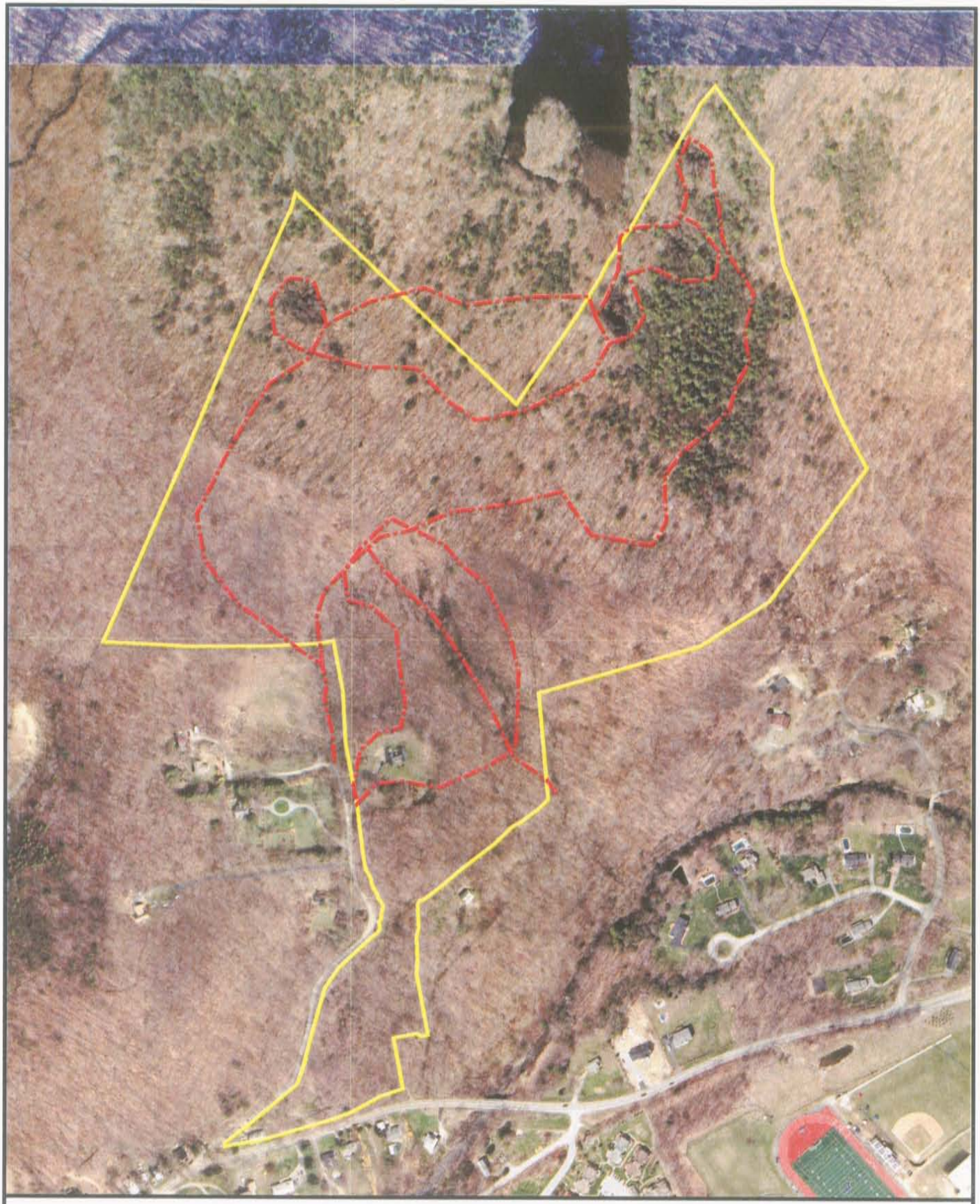


General Location of Wildlife Survey Transects
Emerald Ridge
Town of Putnam Valley, Putnam County, New York
Source: NYS GIS Clearinghouse, 2004 Aerial Photo
Approx. Scale: 1 inch = 475 feet

File 04010 12/28/05
JS:\04010\

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

LEGEND

UNDISTURBED WOODLANDS

PROPOSED AREA TO BE PRESERVED VIA CONSERVATION EASEMENT

300 0 300 600

SCALE : 1 INCH = 300 FEET

Undisturbed Woodlands

Emerald Ridge Subdivision

Town of Putnam Valley, Putnam County, New York

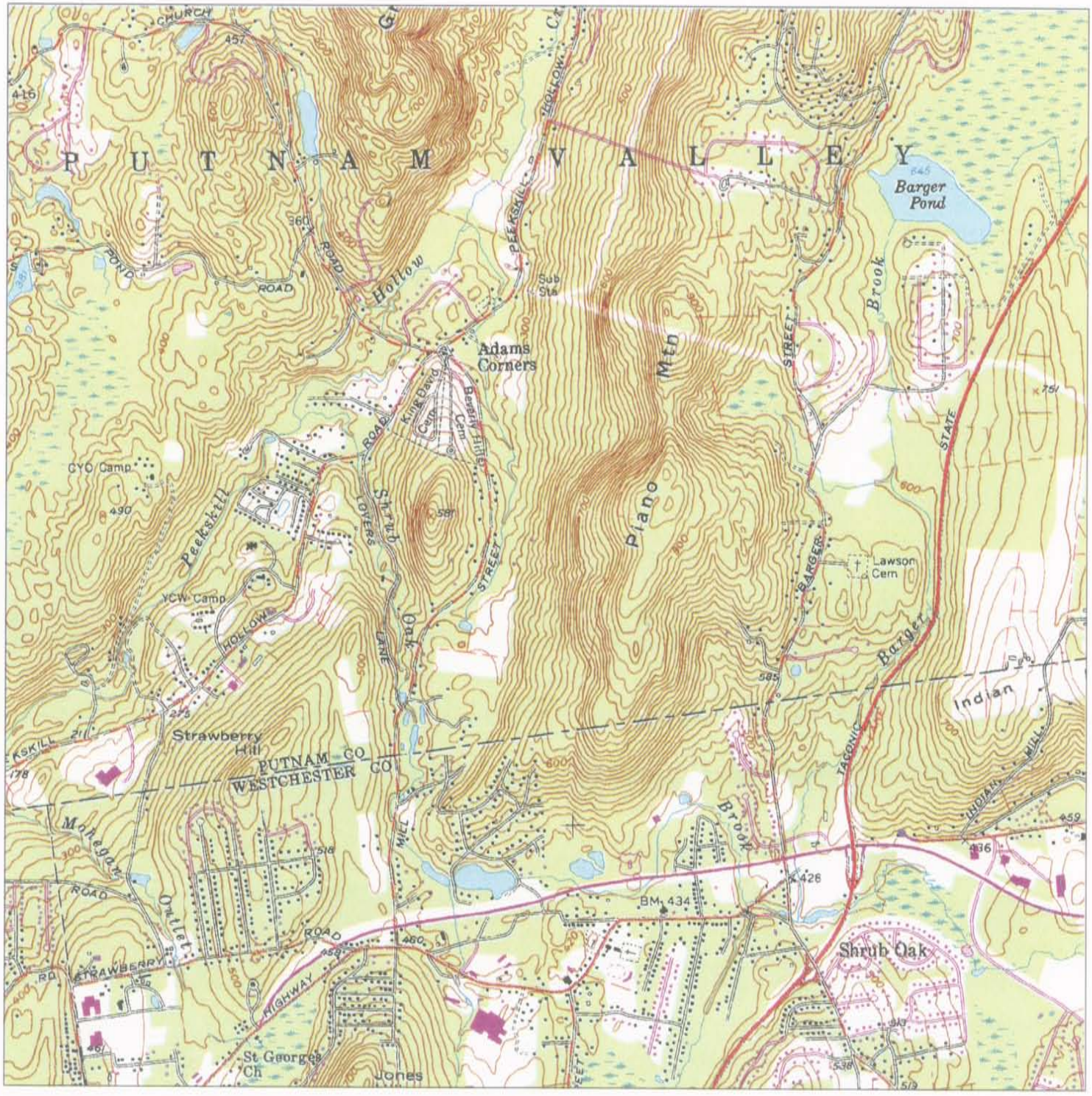
Source: Cronin Engineering, P.E., P.C., November 17, 2006

Scale: 1 inch = 300 feet

File: 04010 11/20/06

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

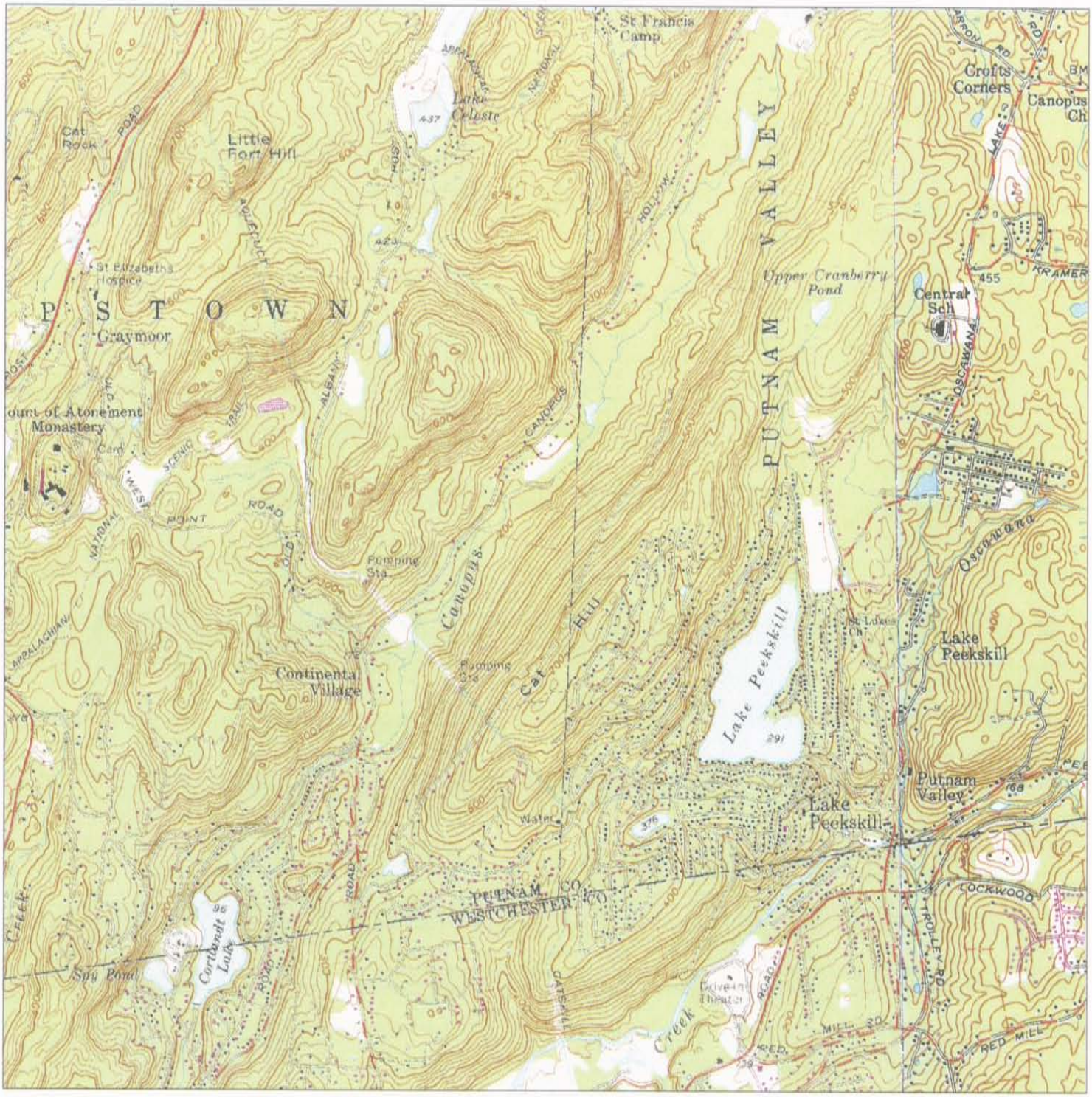
Breeding Bird Atlas Block 5957A



1 Mile

Scale is approximately 1:25,000, but may vary on your printer.

Breeding Bird Atlas Block 5857B



1 Mile

Scale is approximately 1:25,000, but may vary on your printer.

New York State Department of
Environmental Conservation

NYS Breeding Bird Atlas

ATLAS 2000

2000-2005

Navigation Tools
Perform Another Search
Show All Records
Sort by Field Card Order
Sort by Taxonomic Order
View 1985 Data

Block 5857B Summary	
Total Species:	58
Possible:	32
Probable:	9
Confirmed:	17

Click on column heading to sort by that category.

Common Name	Scientific Name	Behavior Code	Date	NY Legal Status	Vo
American Crow	*Corvus brachyrhynchos*	X1	6/17/2005	Game Species	SF
American Goldfinch	*Carduelis tristis*	X1	6/17/2005	Protected	SF
American Redstart	*Setophaga ruticilla*	X1	6/17/2005	Protected	SF
American Robin	*Turdus migratorius*	FY	6/17/2005	Protected	SF
American Woodcock	*Scolopax minor*	X1	6/17/2005	Game Species	SF
Baltimore Oriole	*Icterus galbula*	FY	6/16/2005	Protected	SF
Barn Swallow	*Hirundo rustica*	X1	6/17/2005	Protected	SF

Black-capped Chickadee	*Poecile atricapillus*	X1	6/16/2005	Protected	SF
Blue Jay	*Cyanocitta cristata*	X1	6/16/2005	Protected	SF
Blue-gray Gnatcatcher	*Polioptila caerulea*	S2	6/17/2005	Protected	SF
Brown-headed Cowbird	*Molothrus ater*	X1	6/16/2005	Protected	SF
Canada Goose	*Branta canadensis*	FL	6/17/2005	Game Species	SF
Carolina Wren	*Thryothorus ludovicianus*	S2	6/17/2005	Protected	SF
Cedar Waxwing	*Bombycilla cedrorum*	X1	6/17/2005	Protected	SF
Chimney Swift	*Chaetura pelagica*	ON	6/17/2005	Protected	SF
Chipping Sparrow	*Spizella passerina*	FY	6/17/2005	Protected	SF
Common Grackle	*Quiscalus quiscula*	FY	6/17/2005	Protected	SF
Common Yellowthroat	*Geothlypis trichas*	P2	6/17/2005	Protected	SF
Double-crested Cormorant	*Phalacrocorax auritus*	X1	6/17/2005	Protected	SF
Downy Woodpecker	*Picoides pubescens*	FY	6/17/2005	Protected	SF
Eastern Bluebird	*Sialia sialis*	FL	6/17/2005	Protected	SF
Eastern Kingbird	*Tyrannus tyrannus*	P2	6/17/2005	Protected	SF
Eastern Phoebe	*Sayornis phoebe*	NE	6/17/2005	Protected	SF
Eastern Wood-Pewee	*Contopus virens*	X1	6/17/2005	Protected	SF
European Starling	*Sturnus vulgaris*	ON	6/17/2005	Unprotected	SF
Gray Catbird	*Dumetella carolinensis*	FY	6/17/2005	Protected	SF
Great Blue Heron	*Ardea herodias*	X1	6/17/2005	Protected	SF
Great Crested Flycatcher	*Myiarchus crinitus*	X1	6/17/2005	Protected	SF
Green Heron	*Butorides virescens*	X1	6/16/2005	Protected	SF

House Finch	*Carpodacus mexicanus*	X1	6/17/2005	Protected	SF
House Sparrow	*Passer domesticus*	ON	6/17/2005	Unprotected	SF
House Wren	*Troglodytes aedon*	X1	6/17/2005	Protected	SF
Indigo Bunting	*Passerina cyanea*	S2	6/17/2005	Protected	SF
Killdeer	*Charadrius vociferus*	P2	6/17/2005	Protected	SF
Mallard	*Anas platyrhynchos*	FL	6/17/2005	Game Species	SF
Mourning Dove	*Zenaida macroura*	X1	6/17/2005	Protected	SF
Northern Cardinal	*Cardinalis cardinalis*	P2	6/16/2005	Protected	SF
Northern Flicker	*Colaptes auratus*	X1	6/16/2005	Protected	SF
Northern Mockingbird	*Mimus polyglottos*	X1	6/17/2005	Protected	SF
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	X1	6/17/2005	Protected	SF
Ovenbird	*Seiurus aurocapilla*	X1	6/17/2005	Protected	SF
Pileated Woodpecker	*Dryocopus pileatus*	X1	6/17/2005	Protected	SF
Red-bellied Woodpecker	*Melanerpes carolinus*	X1	6/17/2005	Protected	SF
Red-eyed Vireo	*Vireo olivaceus*	X1	6/17/2005	Protected	SF
Red-winged Blackbird	*Agelaius phoeniceus*	FY	6/17/2005	Protected	SF
Rock Pigeon	*Columba livia*	X1	6/17/2005	Unprotected	SF
Scarlet Tanager	*Piranga olivacea*	X1	6/17/2005	Protected	SF
Song Sparrow	*Melospiza melodia*	X1	6/17/2005	Protected	SF
Tree Swallow	*Tachycineta bicolor*	ON	6/17/2005	Protected	SF
Tufted Titmouse	*Baeolophus bicolor*	FL	6/17/2005	Protected	SF
Turkey Vulture	*Cathartes aura*	X1	6/17/2005	Protected	SF
Veery	*Catharus fuscescens*	X1	6/16/2005	Protected	SF
White-breasted	*Sitta carolinensis*	X1	6/17/2005	Protected	SF

Nuthatch					
Wild Turkey	*Meleagris gallopavo*	FL	6/17/2005	Game Species	SF
Wood Thrush	*Hylocichla mustelina*	X1	6/17/2005	Protected	SF
Worm-eating Warbler	*Helmitheros vermivorus*	X1	6/17/2005	Protected	SF
Yellow Warbler	*Dendroica petechia*	S2	6/17/2005	Protected	SF
Yellow-throated Vireo	*Vireo flavifrons*	S2	6/17/2005	Protected	SF

Current Date: 5/4/2006

New York State Department of
Environmental Conservation

NYS Breeding Bird Atlas

ATLAS 2000

1980-1985

Navigation Tools
Perform Another Search
Sort by Field Card Order
Sort by Taxonomic Order
View 2000 Data

Block 5857B Summary	
Total Species:	74
Possible:	8
Probable:	15
Confirmed:	51

Click on column heading to sort by that category.

Common Name	Scientific Name	Behavior Code	Date	NY I Sta
American Black Duck	*Anas rubripes*	FL	1984	Game S
American Crow	*Corvus brachyrhynchos*	P2	1984	Game S
American Goldfinch	*Carduelis tristis*	FY	1984	Protecte
American Kestrel	*Falco sparverius*	P2	1984	Protecte
American Redstart	*Setophaga ruticilla*	FY	1984	Protecte
American Robin	*Turdus migratorius*	NY	1983	Protecte
Baltimore Oriole	*Icterus galbula*	FY	1983	Protecte
Bank Swallow	*Riparia riparia*	NE	1984	Protecte
Barn Swallow	*Hirundo rustica*	NY	1983	Protecte
Belted Kingfisher	*Ceryle alcyon*	S2	1984	Protecte
Black-and-white Warbler	*Mniotilta varia*	FY	1984	Protecte

Black-capped Chickadee	*Poecile atricapillus*	FL	1982	Protecte
Blue Jay	*Cyanocitta cristata*	FY	1984	Protecte
Blue-winged Warbler	*Vermivora pinus*	FY	1984	Protecte
Brown Creeper	*Certhia americana*	X1	1982	Protecte
Brown Thrasher	*Toxostoma rufum*	FY	1984	Protecte
Brown-headed Cowbird	*Molothrus ater*	X1	1982	Protecte
Canada Goose	*Branta canadensis*	FL	1983	Game S
Carolina Wren	*Thryothorus ludovicianus*	S2	1984	Protecte
Cedar Waxwing	*Bombycilla cedrorum*	S2	1983	Protecte
Chestnut-sided Warbler	*Dendroica pensylvanica*	S2	1984	Protecte
Chimney Swift	*Chaetura pelagica*	ON	1982	Protecte
Chipping Sparrow	*Spizella passerina*	FY	1984	Protecte
Common Grackle	*Quiscalus quiscula*	FY	1984	Protecte
Common Yellowthroat	*Geothlypis trichas*	FY	1984	Protecte
Downy Woodpecker	*Picoides pubescens*	FY	1984	Protecte
Eastern Kingbird	*Tyrannus tyrannus*	FY	1984	Protecte
Eastern Phoebe	*Sayornis phoebe*	NE	1983	Protecte
Eastern Screech-Owl	*Megascops asio*	X1	1983	Protecte
Eastern Towhee	*Pipilo erythrophthalmus*	FY	1983	Protecte
Eastern Wood-Pewee	*Contopus virens*	S2	1984	Protecte
European Starling	*Sturnus vulgaris*	FY	1983	Unprote
Field Sparrow	*Spizella pusilla*	FL	1983	Protecte
Gray Catbird	*Dumetella carolinensis*	FY	1983	Protecte
Great Crested Flycatcher	*Myiarchus crinitus*	S2	1984	Protecte
Hairy Woodpecker	*Picoides villosus*	P2	1984	Protecte
House Finch	*Carpodacus mexicanus*	FL	1983	Protecte
House Sparrow	*Passer domesticus*	FL	1983	Unprote
House Wren	*Troglodytes aedon*	NE	1983	Protecte
Indigo Bunting	*Passerina cyanea*	FY	1982	Protecte
Killdeer	*Charadrius vociferus*	P2	1984	Protecte
Least Flycatcher	*Empidonax minimus*	S2	1984	Protecte

Louisiana Waterthrush	*Seiurus motacilla*	S2	1984	Protecte
Mallard	*Anas platyrhynchos*	FL	1984	Game S
Mourning Dove	*Zenaida macroura*	FY	1983	Protecte
Northern Cardinal	*Cardinalis cardinalis*	FY	1983	Protecte
Northern Flicker	*Colaptes auratus*	ON	1982	Protecte
Northern Mockingbird	*Mimus polyglottos*	FY	1984	Protecte
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	P2	1984	Protecte
Ovenbird	*Seiurus aurocapilla*	FY	1984	Protecte
Prairie Warbler	*Dendroica discolor*	X1	1984	Protecte
Red-bellied Woodpecker	*Melanerpes carolinus*	FL	1985	Protecte
Red-eyed Vireo	*Vireo olivaceus*	FY	1984	Protecte
Red-tailed Hawk	*Buteo jamaicensis*	X1	1983	Protecte
Red-winged Blackbird	*Agelaius phoeniceus*	FY	1983	Protecte
Rock Pigeon	*Columba livia*	FL	1984	Unprote
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	FL	1982	Protecte
Ruby-throated Hummingbird	*Archilochus colubris*	X1	1984	Protecte
Scarlet Tanager	*Piranga olivacea*	NE	1984	Protecte
Song Sparrow	*Melospiza melodia*	FY	1984	Protecte
Spotted Sandpiper	*Actitis macularia*	FL	1984	Protecte
Tree Swallow	*Tachycineta bicolor*	FL	1984	Protecte
Tufted Titmouse	*Baeolophus bicolor*	FL	1982	Protecte
Turkey Vulture	*Cathartes aura*	X1	1984	Protecte
Veery	*Catharus fuscescens*	S2	1982	Protecte
Warbling Vireo	*Vireo gilvus*	FY	1984	Protecte
White-breasted Nuthatch	*Sitta carolinensis*	FY	1984	Protecte
Willow Flycatcher	*Empidonax traillii*	S2	1984	Protecte
Wood Duck	*Aix sponsa*	FL	1984	Game S
Wood Thrush	*Hylocichla mustelina*	FY	1984	Protecte
Worm-eating Warbler	*Helmitheros vermivorus*	FY	1984	Protecte
Yellow Warbler	*Dendroica petechia*	FY	1983	Protecte

Yellow-billed Cuckoo	*Coccyzus americanus*	X1	1982	Protecte
Yellow-throated Vireo	*Vireo flavifrons*	FY	1984	Protecte

Current Date: 5/4/2006

Wetland D

Wetland C

Mating wood frogs

Mating wood frogs with egg mass

Spotted salamander egg masses

Spotted salamanders breeding in Wetland D

Single pool in Wetland A

Spotted salamander egg mass at Wetland A

Red backed salamander

Determining location of off site wetland

Wildlife Observation List

Project Name: Church Road Date: 5/19/06

Mammals		Reptiles		Birds			Other
white-tail deer	✓	garter snake		turkey 2		crow 1, 9, 5 FS	Red Wee 1, 2, 3, 5, 7 par
coyote		milk snake		ruffed grouse		blue jay 1, 9, 5, 6	Red-bel 1, 7, 8
raccoon		hognose snake*		wood thrush 1, 2, 3, 9, 7, 8		scarlet tanager 1 pair	Tuf 1
red fox		brown snake		pileated woodpecker 5, 6, 3		American goldfinch 5 FS	TT Tow 1, 4, 5
gray fox		ringneck snake		hairy woodpecker 2, 1, 7, 3		downy woodpecker 2, 3, 8	Yell 1, 2, 3, 4
opossum		eastern racer		cardinal 1		chipping sparrow	E Bl 1, 2
eastern chipmunk	✓	copperhead		yellow shafted flicker 1		yellow-billed cuckoo	Rw 3, 4 par
gray squirrel	✓	wood turtle*		ovenbird 2, 1, 4, 3		junco	Jun 1, 9 5 pair
short-tailed shrew		box turtle		towhee		mourning dove	BT Gr 1, 6
eastern mole		spotted turtle		red-tailed hawk 5		chickadee 1, 2, 3, 7, 4, 5, 6, 7, 8	Eas Sp 1
woodchuck		*Amphibians*		robin 3		nuthatch 2, 3, 7	Mo 1
common shrew		newt		catbird		turkey vulture F3	
little brown bat		Jefferson salamander		mockingbird		E. screech owl	
red bat		slimy salamander		flycatchers 7		great horned owl	
flying squirrel		spotted salamander		American redstart		common yellowthroat	
cottontail rabbit		dusky salamander		eastern phoebe		red-eyed vireo 1, 3, 2 pair, 1, 9, 5, 6, 7, 8	
striped skunk		red-backed salamander		veery 1, 3, 9, 4, 7		barred owl	
white-footed mouse		American toad					
New York weasel		gray treefrog					
deer mouse		wood frog					
house mouse		green frog					
meadow vole		spring peepers					
starnosed mole		pickerel frog					

Habitat type: U - Forested upland, FW - Forested wetland, SS - Scrub-shrub swamp, Ed - Edge habitat, W - Open water, ML - Managed landscape, SC - Stream Corridor, SW - Stone walls

Wildlife Observation List

Project Name: Emerald Ridge Date: 6/14/06

Mammals		Reptiles		Birds				Other
white-tail deer	✓	garter snake		turkey		crow 1, 3, 4	FB	
coyote		milk snake		ruffed grouse		blue jay 2, 4		
raccoon		hognose snake*		wood thrush 8, 7, 5, 1, 2, 3, 4		scarlet tanager 5	FB	
red fox		brown snake		pileated woodpecker 3, 5	FB	American goldfinch 7/6		
gray fox		ringneck snake		hairy woodpecker 3, 7, 5, 9, 3, 4		downy woodpecker 3 pair		
opossum		eastern racer		cardinal	FB	chipping sparrow		
eastern chipmunk	✓	copperhead		yellow shafted flicker 5, 5, 3		yellow-billed cuckoo		
gray squirrel	✓	wood turtle*		ovenbird 1, 2, 3, 4		junco		
short-tailed shrew		box turtle		towhee		mourning dove		
eastern mole		spotted turtle		red-tailed hawk 4		chickadee 1, 8, 7, 5, 6, 9, 3, 4		
woodchuck		*Amphibians*		robin 8		nuthatch 5, 3, 3 pair		
common shrew		newt		catbird 1		turkey vulture		
little brown bat		Jefferson salamander		mockingbird 1		E. screech owl		
red bat		slimy salamander		flycatchers		great horned owl		
flying squirrel		spotted salamander		American redstart		common yellowthroat		
cottontail rabbit		dusky salamander		eastern phoebe 1		red-eyed vireo 8, 7, 5, 6, 9, 2		
striped skunk		red-backed salamander		veery 8, 5, 6, 4		barred owl		
white-footed mouse		American toad						
New York weasel		gray treefrog						
deer mouse		wood frog						
house mouse		green frog						
meadow vole		spring peepers						
starnosed mole		pickerel frog						

Habitat type: U - Forested upland, FW - Forested wetland, SS - Scrub-shrub swamp, Ed - Edge habitat, W - Open water, ML - Managed landscape, SC - Stream Corridor, SW - Stone walls

Project Name /Project Number EMERALD RIDGE

Date: 6/14/06 Time: 5:00 AM - 10:30 AM

Names of persons present onsite C. ROBBINS

Time:

Survey Start 5 ~~am~~ pm (circle one)
Survey End 10:30 am pm (circle one)

Weather: 50 - 65 - PARTLY TO MOSTLY SUNNY

Approximate temperature: Air 57-65 Water N/A

Species Information: over

Species identified_____
Approximate population_____
*partial list of species attached
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Additional Comments:

Project Name /Project Number Elmoras Ridge 64010

Date: 5/19/06 Time: 5:30 am 10:30 am

Names of persons present onsite C Robinson

Time:

Survey Start 5:30 am pm (circle one)
Survey End 10:30 am pm (circle one)

Weather: Pt. Cly Cloudy

Approximate temperature: Air 56 - 65 Water N/A

Species Information: see

Species identified_____
Approximate population_____
*partial list of species attached
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Species identified_____
Approximate population_____
indicate approximate location of species on attached map

Additional Comments:

SteveM

From: Bruce
Sent: Tuesday, May 16, 2006 5:47 PM
To: SteveM
Subject: RE: Biodiversity studies

I got nothing to add beyond what Jim has already passed on to you, but here's the incidentals from my two piezometer trips to Emerald Ridge (March 30 and April 26):

March 30 - Air temp ~50F. On site 1230h-1330h. No recent rainfall. Rolled about half dozen logs at each wetlands to look for salamanders.

Wetland A - Dry everywhere
Wetland B - Creek flow at a few GPM, other areas "dry." Flowing water is 51F (this is probably essentially groundwater temp for the groundwater feeding this surface stream as I took it very close to where it emits from the ground).
Wetland C - Pool edge has receded. Lots of green filamentous algae. Multiple wood frogs calling. Three amplexing pairs in water. 14 frog egg masses counted, all near C7. Water at 63F at eggmasses! No salamander larvae observed. One red-backed salamander found under a log.
Wetland D - Pool edge has receded. Lots of green filamentous algae, almost everywhere in pool. Multiple wood frogs calling. Four wood frogs in water, no pairing, none large or "orange" so may be males. One frog egg mass on one side of pool, three on the other. 58F at the three, which don't look healthy, one of the masses is probably all dead eggs! No salamander larvae observed.

April 26 - Air temp 66F. On site 1430h-1630h. Rained a couple of inches 3-4 days ago. Rolled a couple of logs at each wetlands to look for salamanders.

Wetland A - Water, water everywhere. One green frog, one peeper seen. No egg masses. Pool temp at 61F.
Wetland B - Creek flow at est. 20-30 gpm or greater. Flowing water is 49F (ditto the groundwater note made above).
Wetland C - Pool edge to overflowing, running downhill across trail at est. 3-5 gpm. All green filamentous algae gone! One peeper calling. Water at 61F. No egg masses or salamander larvae observed, but tadpoles present .
Wetland D - Pool edge to overflowing, running downhill across trail at est. 3 gpm. Most all green filamentous algae gone. One green frog seen. Water at 63F. One salamander egg masses (with advanced larvae inside) seen, and several of our "winter salamander larvae" and tadpoles present. Took one large salamander larvae and some of the salamander eggs back for office tank. (Eggs "hatched" out before I got to office.)

Th..th..th..that's all, folks...

-----Original Message-----
From: SteveM
Sent: Tuesday, May 16, 2006 9:45 AM
To: Chris; JBates; Bruce
Subject: Biodiversity studies

Gentlemen:

I am going to start writing up the vernal pool studies, so I need to get whatever you guys have as field notes together. It would help if there were separate notes for each visit, but a compilation will do if you have nothing else. To the best of my recollection, these are the jobs we did:

Capocci
Capozza Baldwin Place
Emerald Ridge
Old Pound Road
Ulster Manor
Lloyd
Esposito Greenburgh
Salem Hunt

Did I miss anything?

2) Hemlock northern hardwood forest.

4) Vernal pool – Wetlands “D”.

6) Vernal pool – Wetlands “A”.

8) Stone wall.

10) Paved road/path (Marsh Hill Road).

12) View From Birding Survey Point #2 (BS#2).

14) View From Birding Survey Point #4 (BS#4).

16) View From Birding Survey Point #6 (BS#6).

18) View From Birding Survey Point #8 (BS#8).


2007/01/24

3-30-06 [redacted] 3.6

ON SITE 12³⁰ – 13³⁰, AIR TEMP ~50°F

EMERALD RIDGE (MARSH HILL ROAD) PIEZOMETERS –

CHIPMUNK

~~BUTTERFLY~~ BLACK WINGS & YELLOW EDGE ON REAR (~3")

WETLAND 'A' – DRY ALL ABOUT

DRY IN WELL @ 3.32'

WETLAND 'C' – NUMEROUS WOOD FROGS CALLING

P – 3' 0.75" (WITH WATER) = 3.06

3 PAIR OF AMPLEXING WOOD FROGS (PHOTO TAKEN) 62.6 F

~14 EGG MASSES ALL BY C7 (17°C AT MASS) (SOME DEAD <1%)

NO SALAMANDER LARVAE SEEN.

– SINGLE 1½" N. RED-BACKED SALAMANDER ~~[illegible]~~ UNDER LOG

– TINIEST OF MOSQUITO LARVAE

WETLAND 'D' – 3' 0" – P.

ALL 0⁷⁵

– USUAL 1 EGG MASS + 4 WOOD FROG – BUT

MORE CHORUSING ON WAY IN.

14.5°C by 3 eggmasses (2 wood frog, 1 ??)

58.1F PICTURE 100% DEAD ?!

– NO SALAMANDER ~~EGGS~~ LARVAE.

WETLAND 'B' – 3.15' PZ #2 3.10' PZ #1

FEW GPM IN CREEK / OTHERWISE "DRY"

FLOWING WATER

1 L, GROUNDWATER – 10.5°C (50.9F)

[redacted]

17⁰⁰ – 19⁰⁰

– [illegible] SPRING AMPHIBS BREEDING SURVEY

– J[illegible] BATES, BRF

– RA[illegible] (¼") TODAY, BUT ONLY <1" ALL OF MARCH.

– MOSTLY HEARING SPRING PEEPERS ON [illegible] WHILE STAND[illegible] AT GPS GATE – SOME [illegible] WOOD FROGS.

– SEE NOTHING IN POND RIGHT OFF PARKING LOT.

– CHECK N.E. SIDE OF KE-1[illegible] – SEE NOTHING, ALTHOUGH PEEPERS ARE DEAFENING. Hi WATER.

– CHECK S[illegible]. KE-10, SEE NOTHING, BEAVER DAM FLOODING STILL PRESENT.

– WALK OLD CULVERT DRAINAGE FROM LOWER TO UPPER KE-1[illegible] WATER IS RUNNING AT A COUPLE GPM, [illegible] ALL THE WAY WITH POOLS IN RUTS AND DEPRESSIONS.

– FIRST ACTIVITY – [illegible] SPOTTED SALAMANDERS BELOW 1ST DAM (THERE ARE 3 DAMS IN SERIES, UPPER (BRG) [illegible] ~ 1½' HIGH AND 20'-30' LONG) AND BELOW 2ND DAM. [illegible] POOL, ABOVE THIRD DAM ARE SPOT. SALAMANDERS, WOOD FROGS, RED-SPOTTED NEWTS (1½" [illegible]!!) AND TO ADULT) AND spring peepers.

– NO EGG MASSES OBSERVED. [illegible] EGG LAYING IS [illegible] BEING AT SITES IN LOWER [illegible] AND WEST.

☆ [illegible] PONDS FULL, DUE TO BEAVER DAM ??

4-26-06 MARSH HILL PIEZOMETERS 11³⁰ →

AIR TEMP. 19°C AT 14³⁰ (66.2F)

	TO WATER	TO 1A10E GROUND	LOW	HIGH	NOTES
PZ2	2.80	3.35	28.5"	27.75"	PIPE HAS 30" AND 36" MARKS → DRIVE
-B-	TO B21 -	103.0	~~2.70~~		TO ~30" (29")
9.5°C	TO B19 -	145.0	2.68'		"PZ#2
@ B28 (49.1F) ~20-30 GPM OR >					3-17-05
(essentially GROUNDWATER)					TO 30"
PZ1	2.85'	3.70'	~~2.70"~~	2.65"	30"+36" MARKS DRIVEN TO ~29.5"
-B-	TO B5	66.0	2.56'		"PZ#1
	TO B8	129.5'			3-17-05
					TO 30" "
PZ4	2.42'	3.55'	3.10	3.10	"PZ#4
-C-	TO C14	45.5'			
	TO C13	53.0'			3-17-05
16°C @ 14⁰⁰ (60.8F)					TO 30" @ WATER SURFACE"

IS OVERFLOWING ACROSS TRAIL AT ~3-5 GPM

~ ONE PEEPER + TADPOLES,

PZ 5	2.39'	3.95	3.20'		"PZ #5
-D-	TO D10	35.0'			3-17-05"
17°C @ 14¹⁵	TO D8	60.0' (62.6 F)			TO 30" @ WATER SURFACE

IS OVERFLOWING ACROSS TRAIL AT ~2 GPM

-TWO ONE OF "OUR" SALAMANDERS C GILLS (OAK TREE?) CAUGHT

-TADPOLES PRESENT

- 1 CLUTCH OF SALAMANDER EGGS C LOCATE ~TIME

| GREEN ~~FROG~~ JUN FROG

14-26-06 CONTINUED

				NOTES
PZ 3	2.73'	3.32'	2.83'	PZ#3
-A-	TO A3 - 95.5'			3-17-05
16°C AT 15⁰⁰	TO A8 - 81.0		(60.8F)	TO 28"

→ GRA-RUMP FROG RUMP PUMP (1) (GREEN FROG)

→ PEEPER (1)

BETWEEN C+D - RUE ANEMONE / EARLY SAXIFRAGE

- RAPTOR IN LOW HEMLOCKS -

CCC ~~RED~~-SHOULDER HAWK???

MARSH HILL PIEZOMETERS 5-24-06

70's (HAS BEEN COOL + DAMP TIL TODAY)

WET 'A' - ZILLIONS OF MOSQUITOS + LARVAE/PUPAE
- ~ <100 ft² LEFT OF OPEN WATER (15°C)
- 2 GREEN FROG IN WATER
- IN EACH OF 4 POOLS - ONE ADJACENT TO PIEZOMETER
- DEPTH TO WATER 37 3/4" (3.15')
- 2 RED-SPOTTED NEWTS EFTS ABOVE LEAF LITTER
- NO TADPOLES IN POOLS, NO SALAMANDER LARVAE OBSERVED
- ONE RED-BACKED SALAMANDER UNDER A LOG UPHILL OF WET 'A' (TURNED OVER ~ 2 DOZEN ROCKS + LOGS)

★ LEAF LITTER IS MOSTLY DRY - JUST A LITTLE DAMP AT THE BOTTOM LAYER → (2.8')

WET C - 30.75" TO WATER, PIEZ IS STILL 5' OUT INTO POOL. POOL IS ONLY DOWN ~ 2" IN DEPTH FROM HIGH WATER MARK. ↗ NOT OVERFLOWING

IN H₂O - LOTS OF WIDE FROG (DOZENS+) | ADULT G. FROG | SOME 1-2" FROGS

16.5° C → EXCEPT IN ISOLATED POOL

- LOTS OF MOSQUITOS, BUT FEW LARVAE/PUPAE
- SAMPLED ONE 1½" "blue-spotted" salamander from under LEAF LITTER ★
- TODAY SAW EVIDENCE OF TADPOLES (COMPLETED)

MARSH HILL 5-24-06 (CONT'D)

WET 'D' PIEZO IS "IN" POOL, POOL ONLY 1.5" DEEP 2-4" FROM HIGH WATER MARK.

LOTS OF MOSQUITOES, NO LARVAE/PUPAE

SAMPLED FOR CLAMS (1/4") FROM POOL (ABUNDANT)

FROGS (FEW) ID'd IN POOL AREAS THERE WERE NO LARVAE SEEN. ★ ONE AMPHIB IN DUFF.

~~PZ AT~~ 29.75" (2.48')

WET 'B' PZ2 34½" (2.87')

10°C AT INFLOW BY PATH

FLOWING AT 3-5 GPM EST.

PZ1 35" (2.92')

FLOWING AT ~ 15-20 GPM

13.5° HOBO AT SITE BOUNDARY

HILLSIDE (P C+D) IS AS AT LAST VISIT

~~★ IN LEAF LITTER ALONG WET 'D'~~

★ 55 MM TL

17 COSTAL GROOVES

FRONT-4 TOE B-5 TOE

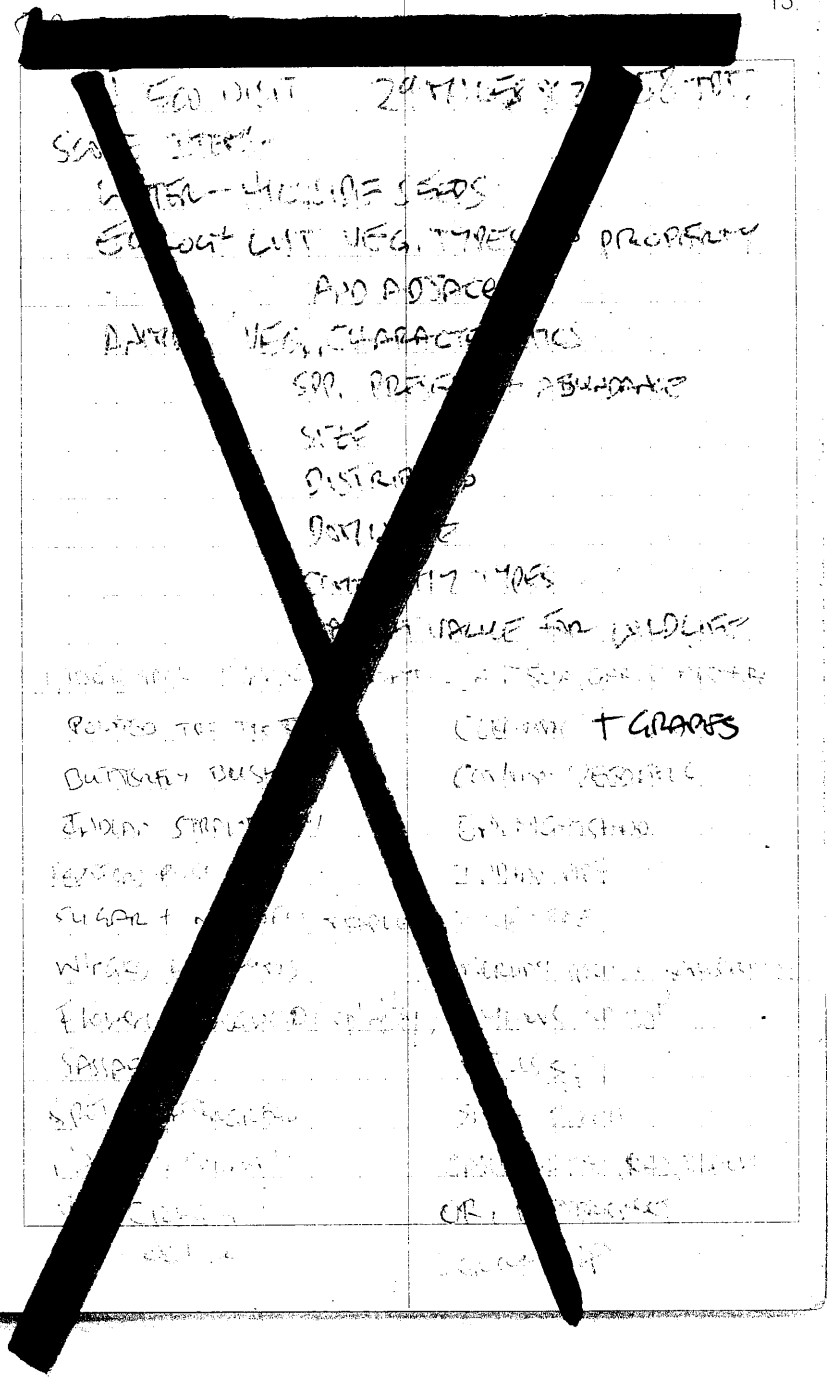
SOLID BLACK BACK GRADATING TO BLUE/GRAY SPOTTING ON SIDE TO LT. GRAY BELLY WITH BLACK FLECKING.

TRASH HILL PIEZOMETERS 6-29-06 15:30–16:30
+ WETLANDS "RE-ELEVATING" AIR TEMP 90°
~~RAIN SHOWERS IN A.M.~~

- WET 'B' IS "DRY" AT TOP DESPITE OF ARC THIS ~~WEEKS~~ RAIN, BUT BY FIRST PZ (PZ 2) ON TOP OF SLOPE, SURFACE FLOW IS 3-5 GPM, PZ2 @ 36" (3.00') @ 19.5°C
- AT PZ #1 (BOTTOM) ~~DRY AGAIN~~ ~20 GPM @ 21°C PZ1 @ 36¼" (3.02')
- WET 'A' PZ 3 DUE TO FLAT DEPTH ~~41.5~~ (3.22') VS ~~(3.46')~~ AREA IS "DRY"

WET C 38.5" TO WATER (3.21')
PZ4 IS ~2" ABOVE AND 2' FROM RESIDUAL POOL. POOL IS AT 25°C

WET D PZ STILL ON EDGE OF RESIDUAL POOL - NOT TOO MUCH FILAMENTOUS ALGAE?!
PZ5 @ 35½" (2.96')
POOL @ 24°C



MARSH HILL PIEZO. 7-24-06 P.M.

INDIAN TOBACCO IN ROAD WAY

WET-A. DRY
WELL-DRY
~~TREE FROG~~ (YOY) IN PIPE
Spring peeper

WET-C DRY
WELL-DRY

WET-D DRY
WELL-DRY
NUMEROUS WOOD FROG YOY,
SAMPLED 2 PLANTS FROM POOL BED:
1) ~~Myriophyllum heterophyllum~~ - ~~[illegible]~~ THREAD-LEAF WATERMILFOIL
2) LUDWIGIA PALUSTRIS - MARSH SEEDBOX
1) Proserpinaca palustris marsh mermaid weed

WET-B UPPER (2) DRY
LOWER (1) 0.1' WATER (=3.60' ??)
NO FLOW IN CREEK WATER PENNYWORT Hydrocotyle americana
- IN CREEK - SPOTTED TOUCH ME NOT
JUMPSEED AND WATER PLANTAIN
MAD DOG SKULL CAP
H. LEAVED TEAR THUMB (C WHITE FLOWERS)
~~[illegible]~~ DOWNY FLOWER (M. VIRGINICA STAMENED FLOWER)
ONE-FLOWERED, UPRIGHT INDIAN PIPE
REGULAR INDIAN PIPE
FALSE NETTLE

SAMPLED
4 PETALS / 3 STAMENS
WHITE
← BLUE/PURPLE STREAKS

[redacted]

~~- IN [illegible] - LOTS OF SNAKEROOT, SOME [illegible], SEDGE, [illegible] RATTLESNAKE GRASS, JUMPSEED, WHITE [illegible]~~
~~- LOTS OF [illegible] STICKY MANNA SEEDHEADS (LEERSIA [illegible]), ARROW-[illegible], FALSE NETTLE, PARTRIDGE BERRY, HAIRY (DOWNY [illegible] SOLOMON'S SEAL), PATH RUSH, [illegible] ASTER, JERUSALEM ARTICHOKE, MUGWORT, COMMON PRIMROSE, [illegible] LEAF TICK TREFOIL, [illegible], LITTLE BLUESTEM weed, CLIMBING HEMPWEED (MIKANIA SCANDENS), HOG PEANUT, PATH RUSH, [illegible] TREFOIL, PANICLED TICKTREFOIL, FALSE PIMPERNEL (LINDERNIA [illegible]), LIZARDTAIL (SAURURUS cernuus)~~
~~WET 'A' - WILD YAM, [illegible] TEARTHUMB, SWEET CICELY (OSMORHIZA [illegible]), HORSETAIL~~
~~[illegible] PHOTOS [illegible] (ANEMONE [illegible])~~
~~ALSO - ROUGH [illegible] TREFOIL (P. [illegible]), EARLY [illegible] (S. [illegible]) [illegible]~~
~~[illegible] IN PLUG~~
~~[illegible] - Cyperus strigosus [illegible]~~
~~[illegible] SEDGE [illegible]~~
~~[illegible] OTHER~~
~~[illegible] GRASS [illegible]~~

[redacted]

- 80'S [redacted] SUNNY
- ✓ WE[redacted]DS FOR BOG TURTLES - F[redacted]D ONLY A F[redacted] PAINTED TURTLES

ONLY S[redacted]C TUSSOCK SEDGE - [redacted]E NOT EVEN IN TUSS[redacted]S. ALSO CUT GRASS[redacted]

ALSO IN WE[redacted]DS BY T[redacted] COUNTS AND NE OF DUM[redacted]LANDS - [redacted]TS OF HOPS VINING [redacted] GROUND.

- ~~SWAMP BEGGAR T[redacted] (BIDENS CONNATA)~~
- WATER HOREHOUND [redacted] (LYCOP[redacted] AMERICANUS)
- WATER PEPPER - (P[redacted]hydropiper)
- PILEWORT (Erechtites [redacted]ieracifolia)

CAREXES:

C. vulpinoidea [redacted] FOX S[redacted]E
C. stricta [redacted] - TUSSOCK [redacted]GE
Cyperus strigos[redacted] - Umbrella [redacted]GE
Scirpus validu[redacted] - Soft stem bu[redacted]sh
C. crinita
Scirpus atrov[redacted]ens Dark green bul[redacted]
C. cristatel[redacted] Crested sedge (typ. [redacted] sedge)

MARSH HILL PIEZO AUG '06 (LAST SURVEY?)

AIR TEMP. 20.6°C OVERCAST, DRIZZLY

~5" OF RAIN OVER LAST 5 DAYS - 1" ABOVE LAST NIGHT

PZ #1 BOTTOM 'B' DEPTH TO WATER 3.2'

☆ (i.e. 3.2" OF WATER)

STREAM ~ 30' AWAY, @ ½ GPM @ 18.1°C

GREEN FROG, PICKEREL FROG

PZ #2 TOP 'B' - DRY WELL, DRY STREAMS

PZ #4 (WET. C.) WELL + POOL "DRY", POOL FLOOR DAMP FROM RAIN (SOME marsh ferns)

- A FEW NATIVE TIC TREFOILS IS FLOWER
- RED-BACKED (ERYTHRISTIC) SALAMANDER ON PATH (PHOTOS 1,2)

PZ #5 (WET. D) WELL + POOL "DRY" FLOOR DAMP. (GREATER COVERAGE OF MARSH FERNS, PLUS, marsh seed box + swamp weed still growing AND A DOZEN OR SO ~~marsh spot fringe~~ DITCH STONECROP* ALSO IN FLOWER ON POOL BOTTOM.) - INDIAN CUCUMBER ROOT

- TREE TUNNEL IN PATHWAY BACK

PZ #3 (WET A) WELL + POOL DRY

*PENTHORUM SEDOIDES

- IN PATH OUT, DYCAR, VA STICKSEED, HACKELIA VIRGINIANA

☆ NO 2-LINED LARVAE - THIS TAXA STILL SEEMINGLY OBSERVED IN CREEKS OF EAGLE RIDGE AND LOCKWOOD.

ETHEROID RIDGE PIEZOMETERS 9-27-06

70'S, DRY, NO RAIN IN A WEEK

- ALL WELLS DRY
- NO SURFACE WATER AT ANY WETLANDS
- FRESH BUCK RUB PROPX WETLAND 'C'

AMPHIBS – WET 'D' – 1 EASTERN NEWT
1 ½" WOOD FROG
1 ADULT PICKEREL FROG

DUG AROUND IN DEEP LEAF LITTER + DUFF AT WETLAND 'C+D' FOR ½ HOUR EACH WENT 8" RAKE LOOKING FOR TERRIBLES SALAMANDER Q's WITH EGGS/NEST, NONE FOUND. CHECKED ALL POSSIBILITIES – DEEP POND, SHALLOW POND, EDGES, PERIMETER ABOVE POND, WOODY LOGS, SHRUBS (WINTERGREEN) FERNS + FORBS, ROCKS, AROUND TREE BASES ETC. – NONE FOUND 4 ?!

– ONLY PLENTY OF EARTHWORMS

WET 'C' – 1 ½" WOOD FROG AND HEY – FOUND A NESTING TERRIBLES, ROUGHLY ON EASTERN SIDE OF POND AND ON THE EDGE – WOULD ONLY BE A COUPLE OF INCHES OF WATER OVER NEST, AT BEST, WHEN POND WAS FULL. REAL LEAF LITTER NOT MUCH ELSE. EGGS (APPROX ~ 3/16" DIA, PARTIAL DUFF COVERED) WERE ABOVE DUFF REAL 4. ~ 2-3 DOZEN.

NO CLIMB – EGGS LOOSELY LAID

10-2-06

MARSH HILL – OCT PIEZOMETERS

– 60'S DRY, DAILY SHOWERS FOR A WEEK NOW

PIEZO #1 } B 3.3' TO H_2O. STREAM DRY,
PIEZO #2 } WELL DRY, STREAM DRY.
PIEZO #3 'A' WELL DRY
PIEZO #4 'C' WELL DRY
PIEZO #5 'D' WELL DRY

ADD: HOP HORNBEAM (LOTS) TO WETLAND B
FALSE HELLEBORE TO WETLAND D
CAREX INTUMESCENS TO " "
(PROB.) JEFFREY PINE IN WET 'C' BASIN (DOUGLAS-FIR)
ONE HOBBLEBUSH (V. LANTANOIDES) NEAR PARKING SPOT

[illegible]
[redacted]

USDA ZONE. [illegible] [illegible] IN NY [illegible] Virginiana

→ ROSA CANINA (DOG ROSE) NATIVE
"THORNS AS VICIOUS AS A DOG'S CANINES"
RED-TAIL HAWK, AM ROBIN, [illegible], DOVE, POINTED [illegible] SMALL TOOTHED

ROSE- [illegible] ROUND, SMOOTH FRUIT ~1' [illegible] NO SEPALS, LEAVES 5,
STIPULES [illegible] BROAD [illegible] FRINGED [illegible]

@ STALL [illegible] RED OSIER (WHITE ROSE) DOGWOOD, [illegible],
WILLOW, [illegible] MAPLE, MULTIFLORA + "[illegible]" ROSE,
RED PANICLED DOGWOOD, BUCKTHORN, [illegible], FERN,
B. [illegible], COTTON [illegible] (SOLIDAGO A. [illegible]),
[illegible] [illegible] COCO, A [illegible],
VIGOROUS [illegible], [illegible], VI [illegible],
SMALL WHITE ASTER, HEATH ASTER (A. pilosus)
FOXTAIL (SETARIA [illegible] [illegible] FOXTAIL
Q. ANN'S LACE, BITTER[illegible], CHICORY,
GOLDENROD - CAN, [illegible], LARGE LEAVED, LATE (S. gigantea)
SILKY

LARGE [illegible] [illegible] PANICLE + GRASSES, [illegible]
[illegible], [illegible] [illegible], [illegible] TEARTHUMB,
[illegible] [illegible] SEDGE, [illegible] GOLDENROD,
BLACK BINDWEED (WILD [illegible]), [illegible]
PANICLED ASTER, [illegible] [illegible] SLIPPERY
ELM, [illegible] WHITE ASTER, [illegible] (Helenium [illegible])
IS → [illegible] ANGELICA (A. atropurpurea)
UMBRELLA SEDGE IN [illegible]
DOCK, [illegible] DOCK? (R. verticillatus)
BITTER

MARSH HILL - LAST? PIEZOMETER DATA
- ALSO CHECKED DEC BUFFER LINE WITH C. ROSSER

PZ 1	B-UPPER 2.59		45.8°F @ 10:15 GPM
PZ 2	B-LOWER 3.00		50.9°F @ 2.15 GPM?
PZ 3 'A'		DRY	44.6°F W
		NUMEROUS WET DEPRESSIONS AROUND PIEZO STATION	
PZ 4	2.38		43.9°F
PZ 5	2.43		43.4°F

NO AMPHIBIANS OBSERVED EXCEPT FOR ONE WS10, FROG JUMPED INTO DEC WETLANDS

- OFF PILEATED WOODPECKER OFFSITE

- AIR TEMP IN 40'S

Friday - April 14, 2006
Emerald Ridge
6:00 PM
Light showers - which have been on since noon
Air Temperature 58 degrees

Steve Marino is walking the trails to wetland C and D. At the fork in the road just before wetland C he can hear peepers off in the distance off to the North associated with the large pond off-site.

Red bellied woodpecker.

The fourth and final day of salamander / vernal pool survey.

In wetland C there is a small number of spring peepers around the fringe, that would be the western fringe of the pond/pool.

No sign of salamanders, salamander egg masses, but did locate one wood frog egg mass that was located on two previous occasions. The first confirmed egg mass salamander egg mass in Wetland C. There is actually two egg masses, one smaller clear, well developed larva and the other is opaque, milkish, within the geletin envelope, unclear what the status of that second mass is.

Confirmed second and third egg masses in wetland C. Both seem opaque, translucent formation. Attached to leaves rather than sticks, and I am now leaving wetland C.

Found a red back salamander under a log on the trail between wetland C and D. In response to Bruce Barbers question about specific location of the vernal pool within wetland D, the pool exists in the south end of the wetland, approximately 10 feet in from wetland flag D5, generally on a relatively straight line to flag D10. There is some curve with a contour between D10 and D5 to the north.

It continues to be interesting that there is very little spring peeper or wood frog activity, call and song wise, in either C or D, although in wetland C one wood frog egg mass was identified and two or three calling spring peepers were heard today in wetland C. But generally there's no accompany of spring peepers or wood frogs in the late daylight or in the evening.

Back in wetland D, which only had three salamanders in it the third night we were out, no egg masses were visible today, no wood frog egg masses either.

Now back at wetland C to identify the wetland flags limiting the area of the submerged vernal pool within the larger wetland. Northeast limit of vernal pool is 10 feet south of wetland C7 a wood duck just took flight, in wetland C heading north toward the large pond off-site. Wetland C8 - some of the flags are missing except for the stubs still hanging on the trees - going to guess they are C7, C8, C13 will be the other side of the vernal pool area. Again following the contours,

there is a narrowing of the north end, into a drainage way which flows into a pit, for lack of a better term, at the trail with the vernal pool portion is considerably in-land of that.

Hearing a few more peeper now in wetland C. It was in wetland C that many presumably male yellow spotted salamanders in one general area depositing spermata spurs. In one particular area there was a group of 12 - 15 very localized and elsewhere in the pond individuals or pairs.

Now back looking for wetland A. Just spooked five pretty large white tail does. On the first night out at the site, Steve and Bruce heard what was most likely a gray horned owl, probably being abused by some crows, and the sound of what could be coyote, yipping and yapping, possible pups, cubs whatever.

On both the first two nights we saw nothing in the wetlands other than the larva which we are still trying to identify which is most likely four toed salamander. Other than that there is no sign of yellow spotted salamander, wood frogs or spring peepers in those ponds, although we can still hear them in the larger pond to the north.

Investigations in wetland A on both those first two night indicated no water, wetland A was dry.

Now entering wetland A from the south side of the wetland at flag A11, this portion of the wetland remains dry, water stained leaves, some surface saturation, no actually pooled water or other standing water in this wetland. Small area of pooled water approximately 12 feet by 10 feet just not of flag A10. Just observed a wood frog within a small pool area, no egg masses although the siting of the wood frog could lead one to believe the egg masses that Chris saw on the daytime visit may very well have been wood frogs. Perhaps after a particularly wet night there was some spawning here but there is so little of this wetland with water in it that a long term prognosis for those egg masses is not very good. Still in the flat depressional area on the south end of wetland A.

Just dropped down to the next level, the lower level, the northern portion of wetland A, entering at wetland flag A7. More water stained leaves, some surface saturation, some very small isolated pockets of standing water. Egg mass within a small pocket through the north and west of wetland flag A7. Just found one of the gooey opaque, presumably yellow spotted salamander egg masses in that same small depression. Another small depressional area, very small, 4X4 with water in it as I move north. Reached the north end of wetland at wetland A20 and now circling back around along the western side. For hydrology - signs of seasonal wet hydrology through the winter. I remember being out in the ice and snow and in some areas large portion of the area were submerged a foot deep, but the indication right now is even with somewhat regular / normalized perception in the last two weeks this wetland is still 90% without collected surface water.

The small pool with the two egg masses in it, one wood frog, one presumably salamander, is located 15 feet north and east of the line between wetland flag A6 and A7. Total size of pool is about 6 feet wide by 10 - 12 feet long.

Wildlife Observation List

Project Name: Overland Trace **Date:** 5/19/06

Mammals		Reptiles		Birds				Other	
white-tail deer	✓	garter snake		turkey 2	✓	crow FB 1, 9, 5	✓	Pileated Woodpecker 1, 2, 3, 4, 5, 7 pair	✓
coyote		milk snake		ruffed grouse		blue jay 1, 9, 5, 6	✓	Red-bellied Woodpecker 1, 3, 6, 8	✓
raccoon		hognose snake*		wood thrush 1, 3, 3, 9, 7, 8	✓	scarlet tanager 0 pair	✓	Tufted Titmouse 1	✓
red fox		brown snake		pileated woodpecker 5, 6, 3	✓	American goldfinch 5 FB	✓	Eastern Towhee 1, 4, 5, 6	✓
gray fox		ringneck snake		hairy woodpecker 2, 7, 8	✓	downy woodpecker 2, 3, 8	✓	Yellow-rumped Warbler 2, 3, 4	✓
opossum		eastern racer		cardinal 1	✓	chipping sparrow		Eastern Bluebird 1	✓
eastern chipmunk	✓	copperhead		yellow shafted flicker 1	✓	yellow-billed cuckoo		Red-eyed Vireo 3 4 pair	✓
gray squirrel	✓	wood turtle*		ovenbird 2, 9, 4, 3	✓	junco		Black-throated Green Warbler 9 pair 5 pair	✓
short-tailed shrew		box turtle		towhee		mourning dove	✓	Brown Thrasher 6	✓
eastern mole		spotted turtle		red-tailed hawk 5	✓	chickadee 1, 2, 3, 1, 4, 5, 6, 7, 8		Common Yellowthroat 1	✓
woodchuck		*Amphibians*		robin 3	✓	nuthatch 2, 3, 7	✓	Veery 1	✓
common shrew		newt		catbird		turkey vulture FB	✓		
little brown bat		Jefferson salamander		mockingbird		E. screech owl			
red bat		slimy salamander		flycatchers 7	✓	great horned owl			
flying squirrel		spotted salamander		American redstart		common yellowthroat			
cottontail rabbit		dusky salamander		eastern phoebe		red-eyed vireo 1, 8 pair, 9, 5, 6, 7, 8	✓		
striped skunk		red-backed salamander		veery 1, 3, 9, 6, 7	✓	barred owl			
white-footed mouse		American toad							
New York weasel		gray treefrog							
deer mouse		wood frog							
house mouse		green frog							
meadow vole		spring peepers							
starnosed mole		pickerel frog							

Habitat type: U - Forested upland, FW - Forested wetland, SS - Scrub-shrub swamp, Ed - Edge habitat, W - Open water, ML - Managed landscape, SC - Stream Corridor, SW - Stone walls

Wildlife Observation List

Project Name: Emerald Ridge **Date:** 6/14/06

Mammals		Reptiles		Birds				Other	
white-tail deer	✓	garter snake		turkey		crow 1,3,7,5 FB	✓	BH Cowbird 1	✓
coyote		milk snake		ruffed grouse		blue jay 2,4	✓	Common Grackle 1	✓
raccoon		hognose snake*		wood thrush 8,7,5,6,9,2,3,4	✓	scarlet tanager 5 pair 2 FB	✓	RB Wood Pecker 1,7,5,6,9,2	✓
red fox		brown snake		pileated woodpecker 3 FB	✓	American goldfinch 7,6	✓	E Pewee 3, 5 [illegible] 3,4	✓
gray fox		ringneck snake		hairy woodpecker 8,7,5,9,3,2	✓	downy woodpecker 1 pair	✓	T. Titmouse 3,5,6,9,2,3	✓
opossum		eastern racer		cardinal FB		chipping sparrow		C. Waxwing 3 P[illegible]	
eastern chipmunk	✓	copperhead		yellow shafted flicker 3,5,3 FB	✓	yellow-billed cuckoo		[illegible] 9	✓
gray squirrel	✓	wood turtle*		ovenbird 9,2,3,4	✓	junco		C Geese FB	✓
short-tailed shrew		box turtle		towhee		mourning dove	✓	BlW Warbler 6	✓
eastern mole		spotted turtle		red-tailed hawk 4	✓	chickadee 1,8,7,5,6,9,3,4		RWBB 3,4	✓
woodchuck		*Amphibians*		robin 8	✓	nuthatch 5 pair, 3 2 pair	✓	Hermit Thrush 3,4	✓
common shrew		newt	✓	catbird 1	✓	turkey vulture		Yellow Warbler 3,4	✓
little brown bat		Jefferson salamander		mockingbird 1	✓	E. screech owl		RB Grosbeak 4	✓
red bat		slimy salamander		flycatchers		great horned owl		Phoebe 6	✓
flying squirrel		spotted salamander		American redstart		common yellowthroat		Worm eating warb 8	✓
cottontail rabbit		dusky salamander		eastern phoebe 1	✓	red-eyed vireo 8,7,5,6,9,2	✓		
striped skunk		red-backed salamander		veery 8,5,6,4	✓	barred owl			
white-footed mouse		American toad							
New York weasel		gray treefrog							
deer mouse		wood frog							
house mouse		green frog							
meadow vole		spring peepers							
starnosed mole		pickerel frog							

hys ✓

Red tail Hawk 4

Showed by RWBB

Habitat type: U - Forested upland, FW - Forested wetland, SS - Scrub-shrub swamp, Ed - Edge habitat, W - Open water, ML - Managed landscape, SC - Stream Corridor, SW - Stone walls

Appendix J

Analysis of Hydrology for Wetlands A and B

Wetland Hydrologic Analysis
Existing and Proposed Conditions Wetlands A and B
Emerald Ridge Subdivision

Hydrographs for existing and post-development hydrologic conditions to two of the existing site wetlands at the proposed Emerald Ridge were prepared by consultants for the applicant. These hydrographs, included at the end of this appendix, are based on the following references and analysis:

1) Calculation of the runoff curve number in the existing and proposed conditions, based on the TR-55 analysis provided by the project engineer,
2) Two years of in situ piezometer data,
3) Ten years of daily precipitation data provided by the New York City Department of Environmental Protection,
4) Soils loss data based on the Westchester and Putnam County Soil Survey, and site specific soils data following independent analysis by a certified professional wetland scientist and staff geologist.
5) Pan evapotranspiration data for New York State
6) "Planning Hydrology for Constructed Wetlands", by Dr. Gary Pierce (Wetland Training Institute, 1993).

Hydrographs were prepared for Wetland A individually, and for the northern and southern portions of Wetland B separately. Wetlands A and B are in separate and distinct watersheds, as shown on the attached watershed map, and are not connected hydrologically. For the proposed conditions, the new road is proposed for the low ridge between the two wetlands, and will not block any flow conveyed between the two. The main body of Wetland A discharges to a narrow intermittent swale to the north; this flow is absorbed into the ground before the wetland leaves the site. Wetland B collects flows in a narrow channel and ultimately is tributary to the Peekskill Hollow Brook to the south.

Wetland B differs topographically at its north end, which is relatively flat, from its south end, which is more sloped and has a more well-defined channel. The watershed boundaries included in this analysis considered the entire watersheds draining to the wetlands, including those areas in the proposed conditions that drain to and through the proposed detention basins. Hydrographs were not prepared for Wetlands C and D, which are far from the proposed development area and are not affected by any change to their respective watersheds. This analysis was prepared by Mr. Steven Marino, PWS, of Tim Miller Associates, based in part on the Rutgers Cook College "Freshwater Wetlands Construction Course". The Rutgers course has been taught by Mr. Mallory Gilbert, PWS, CSS, for the past ten years and is the first course of its kind taught in the U.S. to incorporate reference hydrologic analysis and preparation of wetland-specific hydrographs in wetland construction planning design and functional analysis. The hydrology portion of the course is based in part on "Planning Hydrology for Constructed Wetlands", by Dr. Gary Pierce (Wetland Training Institute, 1993). The hydrographs were prepared in the following manner.

Hydrologic Inputs

Using the TR-55 method, curve numbers were established for the individual watersheds draining to each of the components of the site wetland in both the existing and proposed condition. The data presented in Table 1 was used for calculating runoff.

Table 1 Hydrologic Input Data - Central Wetland Corridor			
	Watershed Area (ac.)	*Runoff Curve Number*[1]	*Size of Wetland in Watershed (ac.)*
Wetland A			
Existing	4.1	59	0.64
Proposed	4	59	0.64
Wetland B (north)			
Existing	31.1	56	2.19
Proposed	31.3	61	2.19
Wetland B (south)			
Existing	6.6	60	1.34
Proposed	6.6	60	1.34
[1] - *calculated based on soil permeability and vegetative cover type*			
Source: Cronin Engineers, Tim Miller Associates, Inc.			

These curve numbers only show minor changes, if any, as shown on the attached TR-55 data sheets. The size and cover type changes of the watersheds are not significant enough to significantly change the curve numbers.

Monthly runoff in inches was calculated based on the curve numbers presented in Table 1 and the number of storm events calculated to generate runoff over a ten year period. The following formula from TR-55 was used:

$$Q = \frac{(P - 0.2S)^2}{(P + 0.8S)}$$

where Q equals runoff in inches, P equals rainfall in inches, and S equals the potential maximum retention after runoff begins (Urban Hydrology for Small Watershed, SCS, 1986). Multiplying this runoff calculation by the acres of each watershed resulted in the total runoff during the ten year period, which was divided by the number of years to calculate an average runoff per month to the reference wetland areas.. To be more conservative in this calculation, only 50 percent of this runoff total was added to the water budget (based on the assumption that TR-55 runoff calculations tend to overestimate runoff as a safety factor for sizing of engineering structures).

This average runoff was then distributed uniformly over the area of the wetland in each sub-watershed. The proposed condition for each wetland considers grading changes to the drainage divide upgradient of the wetland.

All direct precipitation landing on the wetland was considered to be part of the positive monthly hydrograph calculation, as was the distributed runoff. (For example, three inches of precipitation in any given month would be three inches deep over the entire wetland area. Additional volumes generated by runoff were then added to the precipitation depth to generate total positive monthly hydrologic input.)

Hydrologic Losses

Losses to the water budget were calculated using pan evaporation losses and soil infiltration losses.

Soil infiltration losses for each individual wetland were assumed according to existing conditions and soil survey data. Soil losses were assumed to be 6×10^{-6}, or approximately six inch per month. This conclusion was based on direct observation of site soils and review of soil survey results. These observations confirmed the slow permeability reported in the Westchester County Soil Survey for the soils found within the wetlands on this site.

Rates of pan evaporation loss were used because of the inconsistency of data reported in the literature for evapotranspiration in various vegetated wetland systems. It is generally considered that wetland evapotranspiration is approximately 80% of Class A pan evaporation, regardless of the vegetative cover type. Hammer (1989) and others cite a number of studies and literature reviews that conclude that the type of vegetative cover is not a strong factor in water loss determination from wetland areas. Using pan evaporation therefore provides a more conservative estimate (slightly higher) for evapotranspiration loss.

Piezometers

The annual cycle of water levels was observed in the four site wetlands over the interval from March, 2005 through November, 2006. To collect this data, open-ended 2-inch PVC pipes with screened bottoms were installed into the soils within each wetlands. Recordings were made monthly of the depth to the water table within these monitoring wells by using an electronic water level indicator (Slope Indicator Co. Model 51453). Wetlands A, C and D were monitored through the use of a single well. Wetlands B, due to its sloping gradient and shallow, active watercourse during most of the year, was monitored by two wells, one at the upper portion of the wetlands and one at the lower portion of the wetlands, near to the point at which the wetland continues off of the property.

The monitoring results show that Wetlands A, C and D exhibited vernal pool seasonality with periods of inundation in the early Winter through early Summer, followed by significant drawdown and surface drying of the pools during Summer through Fall months. During 2006, each of the wetlands water tables became temporarily depressed by March, following historically low rainfall for that month. All four wetlands became dry during the Summer months, with piezometer readings showing the water table had dropped below the bottom of each of the sampling wells by July, 2006. As shown on the chart, Wetland A dried out a month or so before Wetlands C and D, and never reached the same levels of inundation.

The data collected during the piezometer monitoring for Wetlands A and B are presented as a separate curve on each of the attached hydrographs.

Hydrographs

As seen in the attached figures, the generated hydrographs for existing and proposed development conditions for each individual wetland in the system are essentially the same (Figures 1 to 3). These figures show what is considered a typical hydrograph for palustrine wetlands in the northeast, with seasonal inputs higher than losses from October through April

and drawdown due to increased ET and less frequent rain events through the summer. No impact to the wetlands are anticipated due to changes in site hydrology, considering the minor changes in the watershed characteristics between the pre- and post-development conditions. It is noted that the hydrographs closely track the piezometer readings, generally validating the model and the parameters used in the model calculations.

For the north end of Wetland B, the piezometer readings show the wetland to be slightly drier than the model predicts (three to five inches during the growing season), which is likely caused by the existing channel in the wetland that serves to drain off excess hydrology as baseflow faster than the model could predict. In Wetland A, the hydrograph shows less inundation in the wetland than observed in the piezometers during the winter months. One possible explanation for this discrepancy is that frozen soil conditions reduce the soil loss component in the wetland during this time of year, preventing the predicted infiltration and perching the water table for the winter.

All calculations and parameters used in this analysis are attached.

Water budget for Emerald Ridge - Wetland B North End
Existing CN = 56
Proposed CN = 61
Existing Drainage Area = 31.1 ac., wetland = 2.19 ac.
Proposed Drainage Area = 31.3 ac., wetland = 2.19 ac.
Runoff based on 1988 to 1997 daily rainfall numbers - Source, NYCDEP
Runoff calculated as 1/2 of projected runoff volume (Pierce, 1993)
Soil loss based on Westchester County Soil Survey

	Rainfall	Runoff Existing	Runoff Proposed	Total In Existing	Total In Proposed	Soil Loss	ET	Total Out	Existing Condition	Proposed Condition	Piezometer Readings
Jan	3.7	**0.02**	**0.10**	3.72	3.80	-6.0	-0.1	-6.1	-2.4	-2.3	0.96
Feb	3.1	**0.00**	**0.02**	3.10	3.12	-6.0	-0.1	-6.1	-3.0	-3.0	-4.68
Mar	4.1	**0.07**	**0.18**	4.17	4.28	-6.0	-0.6	-6.6	-2.4	-2.3	-4.92
Apr	4.4	**0.04**	**0.13**	4.44	4.53	-6.0	-1.5	-7.5	-3.1	-3.0	-6.9
May	4.8	**0.55**	**0.86**	5.35	5.66	-6.0	-3.1	-9.1	-3.8	-3.5	-7.92
Jun	4.2	**0.12**	**0.33**	4.32	4.53	-6.0	-4.4	-10.4	-6.1	-5.9	-9.6
Jul	4.4	**0.23**	**0.43**	4.63	4.83	-6.0	-5.5	-11.5	-6.8	-6.6	-11.64
Aug	4.7	**0.10**	**0.32**	4.80	5.02	-6.0	-4.7	-10.7	-5.9	-5.7	-10.68
Sep	4.3	**0.04**	**0.14**	4.34	4.44	-6.0	-3.1	-9.1	-4.7	-4.6	-13.14
Oct	4	**0.58**	**1.05**	4.58	5.05	-6.0	-1.7	-7.7	-3.1	-2.7	-9.84
Nov	4.6	**0.24**	**0.58**	4.84	5.18	-6.0	-0.7	-6.7	-1.8	-1.5	-0.12
Dec	3.8	**0.04**	**0.15**	3.84	3.95	-6.0	-0.1	-6.1	-2.3	-2.2	0.12

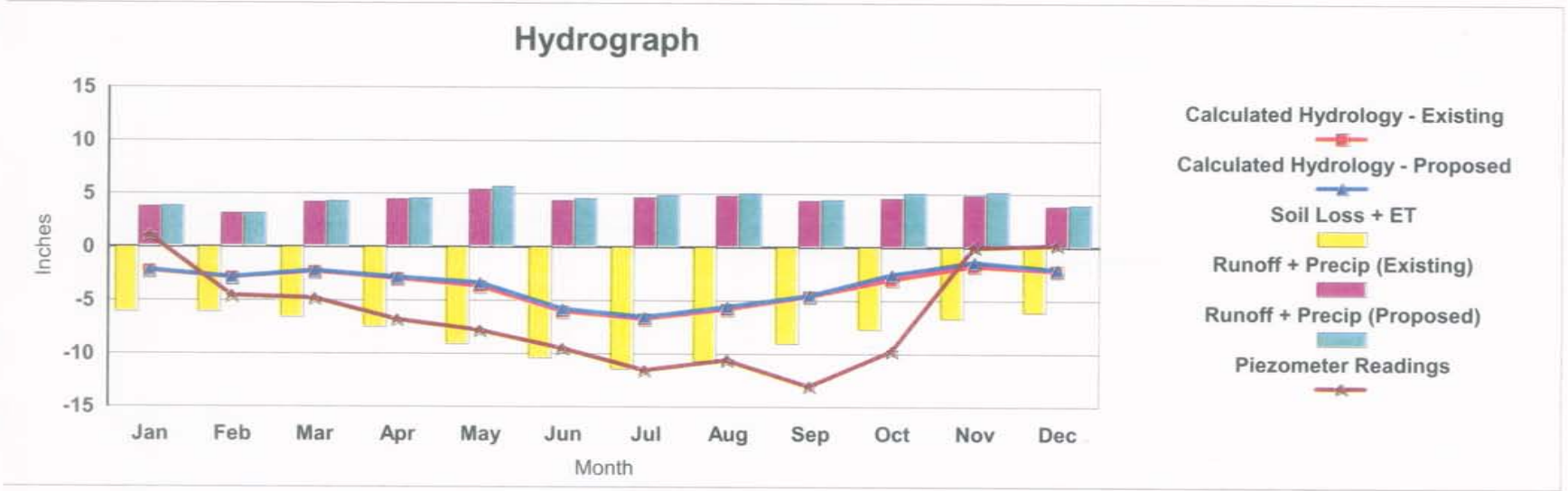


Figure 2 - Hydrograph to Wetland B, north end

Water budget for Emerald Ridge - Wetland B South End
Existing CN = 60
Proposed CN = 60
Existing Drainage Area = 6.6 ac., wetland = 1.34 ac.
Proposed Drainage Area = 6.6 ac., wetland = 1.34 ac.
Runoff based on 1988 to 1997 daily rainfall numbers - Source, NYCDEP
Runoff calculated as 1/2 of projected runoff volume (Pierce, 1993)
Soil loss based on Westchester County Soil Survey

	Rainfall	Runoff Existing	Runoff Proposed	Total In Existing	Total In Proposed	Soil Loss	ET	Total Out	Existing Condition	Proposed Condition	Piezometer Readings
Jan	3.7	**0.03**	**0.03**	3.73	3.73	-6.0	-0.1	-6.1	-2.4	-2.4	-0.84
Feb	3.1	**0.00**	**0.00**	3.10	3.10	-6.0	-0.1	-6.1	-3.0	-3.0	-2.64
Mar	4.1	**0.05**	**0.05**	4.15	4.15	-6.0	-0.6	-6.6	-2.5	-2.5	-2.58
Apr	4.4	**0.04**	**0.04**	4.44	4.44	-6.0	-1.5	-7.5	-3.1	-3.1	-0.24
May	4.8	**0.27**	**0.27**	5.07	5.07	-6.0	-3.1	-9.1	-4.1	-4.1	-4.08
Jun	4.2	**0.10**	**0.10**	4.30	4.30	-6.0	-4.4	-10.4	-6.1	-6.1	-5.94
Jul	4.4	**0.13**	**0.13**	4.53	4.53	-6.0	-5.5	-11.5	-6.9	-6.9	-8.04
Aug	4.7	**0.09**	**0.09**	4.79	4.79	-6.0	-4.7	-10.7	-5.9	-5.9	-8.04
Sep	4.3	**0.04**	**0.04**	4.34	4.34	-6.0	-3.1	-9.1	-4.7	-4.7	-8.04
Oct	4	**0.32**	**0.32**	4.32	4.32	-6.0	-1.7	-7.7	-3.4	-3.4	-4.2
Nov	4.6	**0.17**	**0.17**	4.77	4.77	-6.0	-0.7	-6.7	-1.9	-1.9	-1.62
Dec	3.8	**0.04**	**0.04**	3.84	3.84	-6.0	-0.1	-6.1	-2.3	-2.3	-1.68

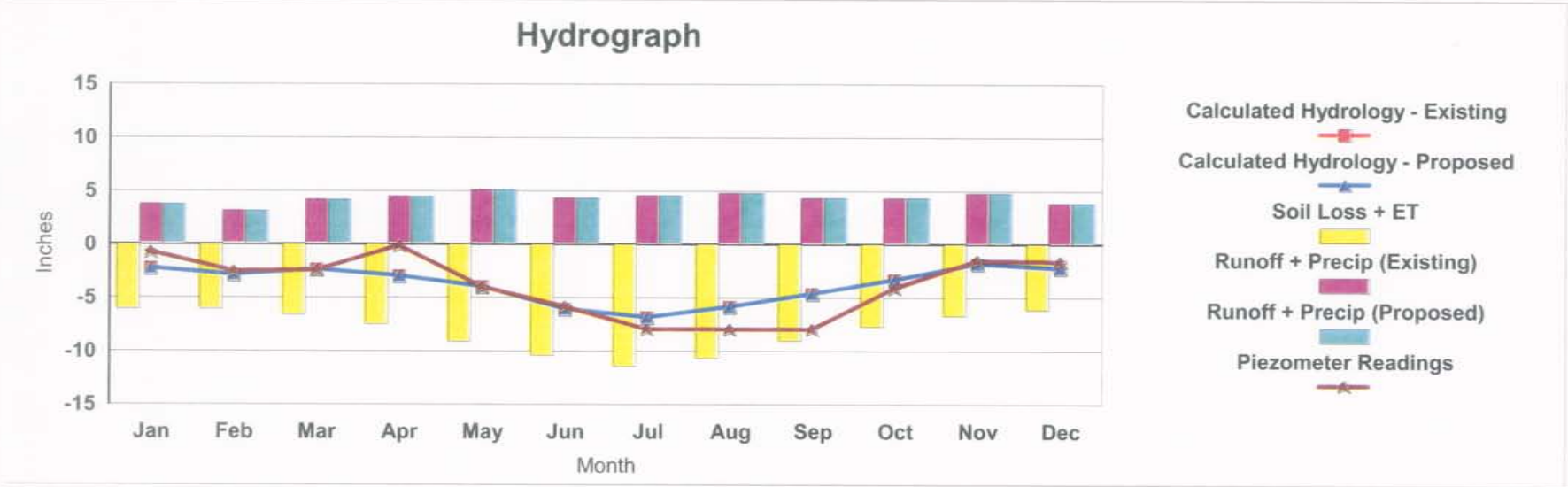


Figure 3 - Hydrograph to Wetland B, south end

Water budget for Emerald Ridge - Wetland A
Existing CN = 59
Proposed CN = 59
Existing Drainage Area = 4.1 ac., wetland = 0.64 ac.
Proposed Drainage Area = 4.0ac., wetland = 0.64 ac.
Runoff based on 1988 to 1997 daily rainfall numbers - Source, NYCDEP
Runoff calculated as 1/2 of projected runoff volume (Pierce, 1993)
Soil loss based on Westchester-Putnam County Soil Survey

	Rainfall	Runoff Existing	Runoff Proposed	Total In Existing	Total In Proposed	Soil Loss	ET	Total Out	Existing Condition	Proposed Condition	Piezometer Readings
Jan	3.7	**0.0**	**0.0**	3.7	3.7	-6.0	-0.1	-6.1	-2.4	-2.4	5.28
Feb	3.1	**0.0**	**0.0**	3.1	3.1	-6.0	-0.1	-6.1	-3.0	-3.0	2.88
Mar	4.1	**0.1**	**0.1**	4.2	4.2	-6.0	-0.6	-6.6	-2.5	-2.5	-4.08
Apr	4.4	**0.0**	**0.0**	4.4	4.4	-6.0	-1.5	-7.5	-3.1	-3.1	-2.46
May	4.8	**0.3**	**0.3**	5.1	5.1	-6.0	-3.1	-9.1	-4.0	-4.0	-4.86
Jun	4.2	**0.1**	**0.1**	4.3	4.3	-6.0	-4.4	-10.4	-6.1	-6.1	-5.88
Jul	4.4	**0.2**	**0.2**	4.6	4.6	-6.0	-5.5	-11.5	-6.9	-6.9	-5.88
Aug	4.7	**0.1**	**0.1**	4.8	4.8	-6.0	-4.7	-10.7	-5.9	-5.9	-5.88
Sep	4.3	**0.0**	**0.0**	4.3	4.3	-6.0	-3.1	-9.1	-4.7	-4.7	-5.88
Oct	4	**0.4**	**0.4**	4.4	4.4	-6.0	-1.7	-7.7	-3.3	-3.4	-2.04
Nov	4.6	**0.2**	**0.2**	4.8	4.8	-6.0	-0.7	-6.7	-1.9	-1.9	-1.044
Dec	3.8	**0.0**	**0.0**	3.8	3.8	-6.0	-0.1	-6.1	-2.3	-2.3	5.4

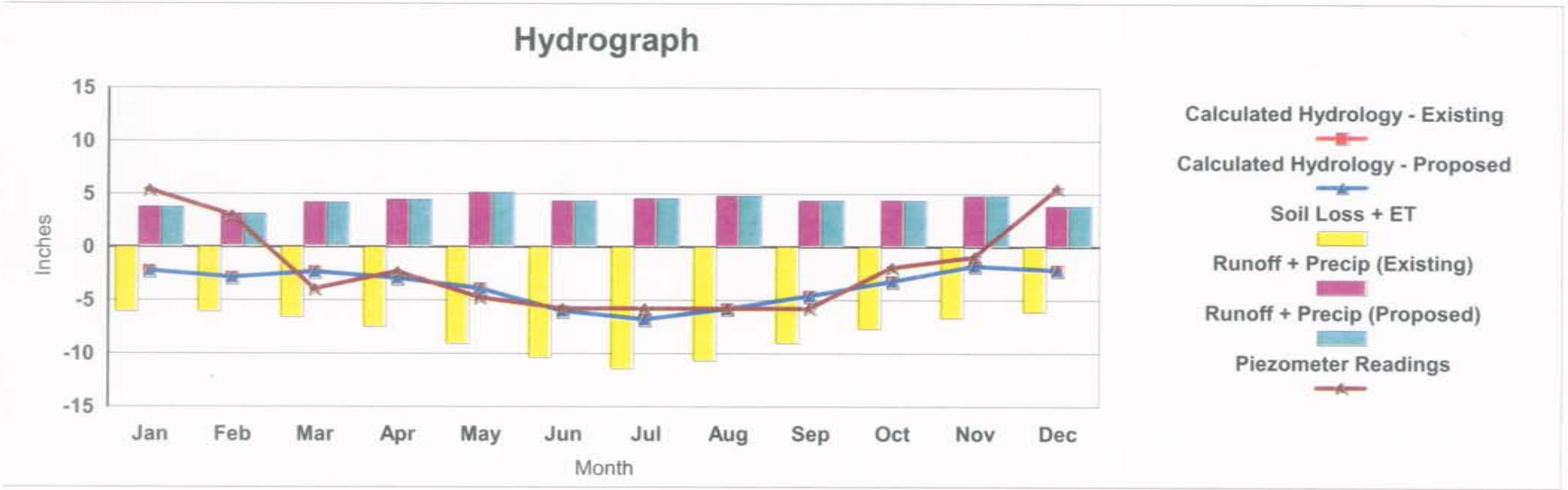


Figure 1 - Hydrograph to Wetland A

0490
SM

CRONIN ENGINEERING, P.E., P.C.
(914) 736-3664

CLIENT EMERALD RIDGE
DATE 12-21-06 INSPECTED BY

WETLAND BASIN	PRE AREA (Ac)	PRE CN	POST AREA (Ac)	POST CN
A	4.1	59	4.0	59
B (UPPER)	31.1 (95517)	56	31.3	61
B (LOWER)	6.6	60	6.6	60

WET A = .64
B = 3.53

STEVE M.
12-21-06
RE: EMERALD

Wetland A (Existing)
CN = 59

	10 yr Runoff	Times Drainage Area 4.1 acres	Divided by 10 yrs	Divided by size (0.64 acres)	X half
January	0.08	0.31	0.0308442	0.05	**0.02**
February	0.01	0.04	0.0044459	0.01	**0.00**
March	0.17	0.72	0.071628	0.11	**0.06**
April	0.12	0.49	0.0493406	0.08	**0.04**
May	1.00	4.11	0.4105852	0.64	**0.32**
June	0.32	1.31	0.1314214	0.21	**0.10**
July	0.47	1.92	0.1919573	0.30	**0.15**
August	0.30	1.23	0.1228631	0.19	**0.10**
September	0.12	0.50	0.0496626	0.08	**0.04**
October	1.16	4.75	0.4746133	0.74	**0.37**
November	0.58	2.39	0.2389645	0.37	**0.19**
December	0.13	0.52	0.0522858	0.08	**0.04**

Wetland A (Proposed)
CN = 59

	10 yr Runoff	Times Drainage Area 4.0 acres	Divided by 10 yrs	Divided by size (0.64 acres)	X half
January	0.08	0.30	0.0300919	0.05	**0.02**
February	0.01	0.04	0.0043375	0.01	**0.00**
March	0.17	0.70	0.069881	0.11	**0.05**
April	0.12	0.48	0.0481372	0.08	**0.04**
May	1.00	4.01	0.4005709	0.63	**0.31**
June	0.32	1.28	0.128216	0.20	**0.10**
July	0.47	1.87	0.1872754	0.29	**0.15**
August	0.30	1.20	0.1198665	0.19	**0.09**
September	0.12	0.48	0.0484514	0.08	**0.04**
October	1.16	4.63	0.4630374	0.72	**0.36**
November	0.58	2.33	0.2331361	0.36	**0.18**
December	0.13	0.51	0.0510105	0.08	**0.04**

Wetland B North (Existing)
CN = 56

	10 yr Runoff	Times Drainage Area 31.1 acres	Divided by 10 yrs	Divided by size (2.19 acres)	X half
January	0.03	0.87	0.086657	0.04	**0.02**
February	0.00	0.04	0.0039119	0.00	**0.00**
March	0.10	3.13	0.3128397	0.14	**0.07**
April	0.05	1.63	0.162542	0.07	**0.04**
May	0.77	23.88	2.3876132	1.09	**0.55**
June	0.17	5.30	0.5295453	0.24	**0.12**
July	0.32	10.00	1.0000138	0.46	**0.23**
August	0.15	4.57	0.4573521	0.21	**0.10**
September	0.06	1.73	0.172517	0.08	**0.04**
October	0.82	25.55	2.5547023	1.17	**0.58**
November	0.34	10.57	1.0574667	0.48	**0.24**
December	0.06	1.77	0.1765977	0.08	**0.04**

Wetland B North (Proposed)
CN = 61

	10 yr Runoff	Times Drainage Area 31.3 acres	Divided by 10 yrs	Divided by size (2.19 acres)	X half
January	0.14	4.50	0.4502393	0.21	**0.10**
February	0.02	0.74	0.0738643	0.03	**0.02**
March	0.25	7.87	0.7865918	0.36	**0.18**
April	0.19	5.89	0.5887258	0.27	**0.13**
May	1.21	37.73	3.7728649	1.72	**0.86**
June	0.47	14.65	1.4649478	0.67	**0.33**
July	0.61	18.97	1.8970453	0.87	**0.43**
August	0.45	14.00	1.4000236	0.64	**0.32**
September	0.20	6.34	0.6335003	0.29	**0.14**
October	1.47	45.97	4.5973473	2.10	**1.05**
November	0.81	25.30	2.5299766	1.16	**0.58**
December	0.20	6.38	0.6383712	0.29	**0.15**

Wetland B South (Existing)
CN = 60

	10 yr Runoff	Times Drainage Area 6.6 acres	Divided by 10 yrs	Divided by size (1.34 acres)	X half
January	0.11	0.70	0.0695766	0.05	**0.03**
February	0.02	0.11	0.0108994	0.01	**0.00**
March	0.21	1.40	0.139878	0.10	**0.05**
April	0.15	1.00	0.1001789	0.07	**0.04**
May	1.10	7.25	0.7249339	0.54	**0.27**
June	0.39	2.57	0.2574525	0.19	**0.10**
July	0.53	3.52	0.352284	0.26	**0.13**
August	0.37	2.43	0.2432202	0.18	**0.09**
September	0.15	1.00	0.1000968	0.07	**0.04**
October	1.31	8.61	0.8613367	0.64	**0.32**
November	0.69	4.55	0.4545811	0.34	**0.17**
December	0.16	1.06	0.1055624	0.08	**0.04**

Wetland B South (Proposed)
CN = 60

	10 yr Runoff	Times Drainage Area 6.6 acres	Divided by 10 yrs	Divided by size (1.34 acres)	X half
January	0.11	0.70	0.0695766	0.05	**0.03**
February	0.02	0.11	0.0108994	0.01	**0.00**
March	0.21	1.40	0.139878	0.10	**0.05**
April	0.15	1.00	0.1001789	0.07	**0.04**
May	1.10	7.25	0.7249339	0.54	**0.27**
June	0.39	2.57	0.2574525	0.19	**0.10**
July	0.53	3.52	0.352284	0.26	**0.13**
August	0.37	2.43	0.2432202	0.18	**0.09**
September	0.15	1.00	0.1000968	0.07	**0.04**
October	1.31	8.61	0.8613367	0.64	**0.32**
November	0.69	4.55	0.4545811	0.34	**0.17**
December	0.16	1.06	0.1055624	0.08	**0.04**

wetland a pre

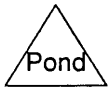
wetland b upper pre

wetland b lower pre

wetland a post

wetland b upper post

wetland b lower post



Drainage Diagram for emerald ridge wetland basins 122206
Prepared by cronin engineering, p.e., p.c. 12/21/2006
HydroCAD® 8.00 s/n 000826 © 2006 HydroCAD Software Solutions LLC

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: wetland a post
Runoff Area=4.000 ac Runoff Depth>2.63"
Tc=0.0 min CN=59 Runoff=15.03 cfs 0.877 af

Subcatchment 2S: wetland b upper post
Runoff Area=31.300 ac Runoff Depth>2.83"
Tc=0.0 min CN=61 Runoff=127.34 cfs 7.388 af

Subcatchment 3S: wetland b lower post
Runoff Area=6.600 ac Runoff Depth>2.73"
Tc=0.0 min CN=60 Runoff=25.83 cfs 1.502 af

Subcatchment a pre: wetland a pre
Runoff Area=4.100 ac Runoff Depth>2.63"
Tc=0.0 min CN=59 Runoff=15.41 cfs 0.899 af

Subcatchment b pre l: wetland b lower pre
Runoff Area=6.600 ac Runoff Depth>2.73"
Tc=0.0 min CN=60 Runoff=25.83 cfs 1.502 af

Subcatchment b pre u: wetland b upper pre
Runoff Area=31.100 ac Runoff Depth>2.34"
Tc=0.0 min CN=56 Runoff=102.36 cfs 6.054 af

Subcatchment 1S: wetland a post

Runoff = 15.03 cfs @ 12.01 hrs, Volume= 0.877 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=7.50"

Area (ac)	CN	Description
3.100	55	Woods, Good, HSG B
0.800	73	Woods, Fair, HSG C
0.100	61	>75% Grass cover, Good, HSG B
4.000	59	Weighted Average
4.000		Pervious Area

Subcatchment 2S: wetland b upper post

Runoff = 127.34 cfs @ 12.01 hrs, Volume= 7.388 af, Depth> 2.83"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=7.50"

Area (ac)	CN	Description
19.000	55	Woods, Good, HSG B
2.200	73	Woods, Fair, HSG C
8.000	61	>75% Grass cover, Good, HSG B
2.100	98	impervious
31.300	61	Weighted Average
29.200		Pervious Area
2.100		Impervious Area

Subcatchment 3S: wetland b lower post

Runoff = 25.83 cfs @ 12.01 hrs, Volume= 1.502 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=7.50"

Area (ac)	CN	Description
4.700	55	Woods, Good, HSG B
1.700	73	Woods, Fair, HSG C
0.200	61	>75% Grass cover, Good, HSG B
6.600	60	Weighted Average
6.600		Pervious Area

Subcatchment a pre: wetland a pre

Runoff = 15.41 cfs @ 12.01 hrs, Volume= 0.899 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=7.50"

Area (ac)	CN	Description
3.300	55	Woods, Good, HSG B
0.800	73	Woods, Fair, HSG C
4.100	59	Weighted Average
4.100		Pervious Area

Subcatchment b pre l: wetland b lower pre

Runoff = 25.83 cfs @ 12.01 hrs, Volume= 1.502 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=7.50"

Area (ac)	CN	Description
4.900	55	Woods, Good, HSG B
1.700	73	Woods, Fair, HSG C
6.600	60	Weighted Average
6.600		Pervious Area

Subcatchment b pre u: wetland b upper pre

Runoff = 102.36 cfs @ 12.01 hrs, Volume= 6.054 af, Depth> 2.34"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr Rainfall=7.50"

Area (ac)	CN	Description
28.900	55	Woods, Good, HSG B
2.200	73	Woods, Fair, HSG C
31.100	56	Weighted Average
31.100		Pervious Area

EMERALD RIDGE SUBDIVISION - WETLAND DRAINAGE DATA

Wetland	Pre Development Drainage Area		Pre Development Impervious Area		Pre Developmenet Wetland Area		Pre Developmenet Grass Area		Pre Development Other Area	
	Area (sf)	Area (ac)	Area (sf)	Area (ac)	Area (sf)	Area (ac)	Area (sf)	Area (ac)	Area (sf)	Area (ac)
Wetland "A"	179,493	4.1	0	0.0	34,749.00	0.8	0	0.0	144,744	3.3
Wetland "B" (Basin 1)	1,353,057	31.1	0	0.0	95,546.00	2.2	0	0.0	1,257,511	28.9
Wetland "B" (Basin 2)	286,990	6.6	0	0.0	75,292.00	1.7	0	0.0	211,698	4.9
		41.8		**0.0**		**4.7**		**0.0**		**37.1**

Wetland	Post Development Drainage Area		Post Development Impervious Area		Post Developmenet Wetland Area		Post Developmenet Grass Area		Post Development Other Area	
	Area (sf)	Area (ac)	Area (sf)	Area (ac)	Area (sf)	Area (ac)	Area (sf)	Area (ac)	Area (sf)	Area (ac)
Wetland "A"	173,626	4.0	0	0.0	34,749.00	0.8	5,181	0.1	133,696	3.1
Wetland "B" (Basin 1)	1,365,341	31.3	92,029	2.1	95,546.00	2.2	349,783	8.0	827,983	19.0
Wetland "B" (Basin 2)	286,990	6.6	0	0.0	75,292.00	1.7	8,712	0.2	202,986	4.7
		41.9		**2.1**		**4.7**		**8.3**		**26.7**

WETLAND A
DESIGN POINT

WETLAND B
UPPER
DESIGN POINT

WETLAND B
LOWER
DESIGN POINT

OSCAWANA BROOK

WETLAND "A"

WETLAND "B"

WETLAND "C"
NYSDEC WETLAND ME-3

WETLAND "D"
NYSDEC WETLAND ME-3

LEGEND

- 408 — EXISTING CONTOUR
- CONTROLLED AREA BOUNDARY (100')
- B24 — EXISTING WETLAND BOUNDARY & FLAG
- EXISTING WETLAND AREA
- WETLAND DRAINAGE BASIN – PRE

NOTE:
WETLANDS DELINEATED AND FLAGGED BY THE TOWN PUTNAM VALLEY WETLAND INSPECTOR. WETLAND FLAGS UPDATED BY TOWN OF PUTNAM VALLEY WETLAND INSPECTOR AND STEVE MARINO OF TIM MILLER ASSOCIATES, INC., AUGUST 2006.

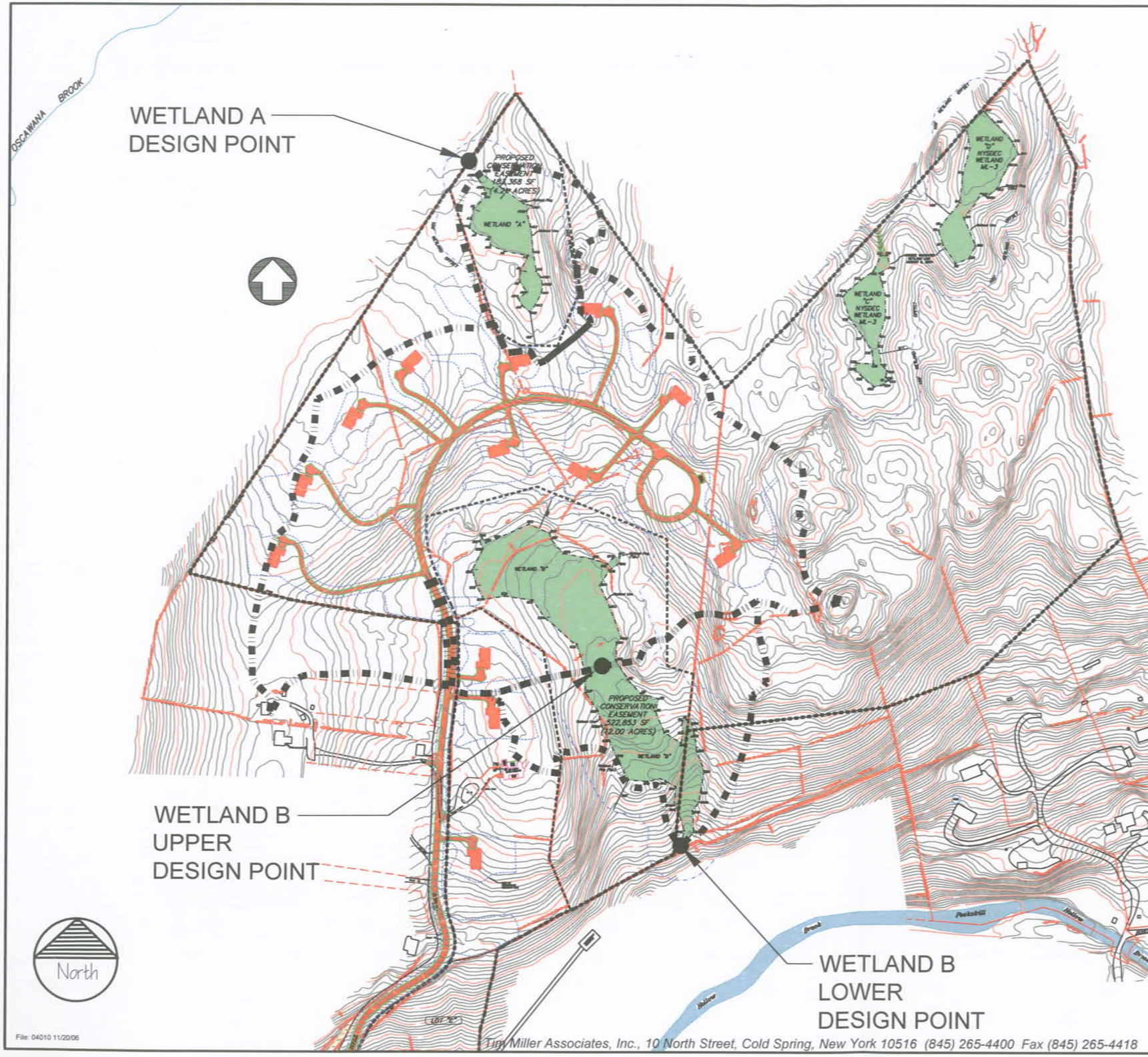
WETLAND DRAINAGE BASIN AREAS

WETLAND BASIN	PRE AREA (AC)	PRE CN NUMBER
A	4.1	59
B (UPPER)	31.1	56
B (LOWER)	6.6	60

North

File: 04010 11/20/06

Figure 1:
Wetland Drainage Basin Pre-Development
Emerald Ridge Subdivision FEIS
Town of Putnam Valley, Putnam County, New York
Source: Cronin Engineering, P.E., P.C., January 29, 2007
Scale: 1 inch = 300 feet



LEGEND

- 400 — EXISTING CONTOUR
- CONTROLLED AREA BOUNDARY (100')
- B24 — EXISTING WETLAND BOUNDARY & FLAG
- EXISTING WETLAND AREA
- WETLAND DRAINAGE BASIN – POST

NOTE:
WETLANDS DELINEATED AND FLAGGED BY THE TOWN PUTNAM VALLEY WETLAND INSPECTOR. WETLAND FLAGS UPDATED BY TOWN OF PUTNAM VALLEY WETLAND INSPECTOR AND STEVE MARINO OF TIM MILLER ASSOCIATES, INC., AUGUST 2006.

WETLAND DRAINAGE BASIN AREAS

WETLAND BASIN	POST AREA (AC)	POST CN NUMBER
A	4.0	59
B (UPPER)	31.3	61
B (LOWER)	6.6	60

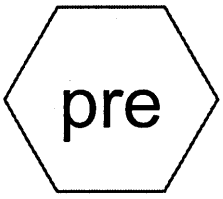
Figure 2:
Wetland Drainage Basin Post Development
Emerald Ridge Subdivision FEIS
Town of Putnam Valley, Putnam County, New York
Source: Cronin Engineering, P.E., P.C., January 29, 2007
Scale: 1 inch = 300 feet

Tim Miller Associates, Inc., 10 North Street, Cold Spring, New York 10516 (845) 265-4400 Fax (845) 265-4418

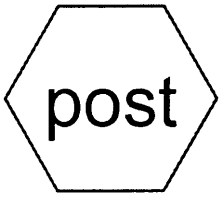
File: 04010 11/20/06

Appendix K

Intersection Catch Basin Drainage Calculations



pre to cb at intersection



post to cb at intersection

Subcat Reach Pond Link

Drainage Diagram for emerald ridge - prepost for catch basin
Prepared by cronin engineering, p.e., p.c. 12/27/2006
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Subcatchment pre: pre to cb at intersection

Runoff = 0.38 cfs @ 13.15 hrs, Volume= 0.133 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 yr storm Rainfall=2.80"

Area (ac)	CN	Description
0.170	98	imp - existing road 875'x8' wide
0.230	61	grass, existing lawn, B soil
11.800	55	woods, good cond, B soil
12.200	56	Weighted Average
12.030		Pervious Area
0.170		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.6	160	0.0600	0.08		**Sheet Flow, segment 1** Woods: Dense underbrush n= 0.800 P2= 3.50"
4.4	160	0.0600	0.61		**Shallow Concentrated Flow, segment 2** Forest w/Heavy Litter Kv= 2.5 fps
9.4	675	0.2300	1.20		**Shallow Concentrated Flow, segment 3** Forest w/Heavy Litter Kv= 2.5 fps
2.8	160	0.1500	0.97		**Shallow Concentrated Flow, segment 4** Forest w/Heavy Litter Kv= 2.5 fps
50.2	1,155	Total			

Subcatchment post: post to cb at intersection

Runoff = 0.23 cfs @ 13.15 hrs, Volume= 0.078 af, Depth> 0.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1 yr storm Rainfall=2.80"

Area (ac)	CN	Description
0.090	98	imp - widened road 450'x9' wide
0.020	98	imp - proposed road
7.100	55	woods, good cond, B soil
7.210	56	Weighted Average
7.100		Pervious Area
0.110		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.6	160	0.0600	0.08		**Sheet Flow, segment 1** Woods: Dense underbrush n= 0.800 P2= 3.50"
4.4	160	0.0600	0.61		**Shallow Concentrated Flow, segment 2** Forest w/Heavy Litter Kv= 2.5 fps
9.4	675	0.2300	1.20		**Shallow Concentrated Flow, segment 3** Forest w/Heavy Litter Kv= 2.5 fps
2.8	160	0.1500	0.97		**Shallow Concentrated Flow, segment 4** Forest w/Heavy Litter Kv= 2.5 fps
50.2	1,155	Total			

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment post: post to cb at intersection Runoff Area=7.210 ac Runoff Depth>0.13"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=0.23 cfs 0.078 af

Subcatchment pre: pre to cb at intersection Runoff Area=12.200 ac Runoff Depth>0.13"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=0.38 cfs 0.133 af

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment post: post to cb at intersection Runoff Area=7.210 ac Runoff Depth>0.32"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=0.82 cfs 0.190 af

Subcatchment pre: pre to cb at intersection Runoff Area=12.200 ac Runoff Depth>0.32"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=1.40 cfs 0.321 af

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment post: post to cb at intersection Runoff Area=7.210 ac Runoff Depth>0.13"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=0.23 cfs 0.078 af

Subcatchment pre: pre to cb at intersection Runoff Area=12.200 ac Runoff Depth>0.13"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=0.38 cfs 0.133 af

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment post: post to cb at intersection Runoff Area=7.210 ac Runoff Depth>2.28"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=8.92 cfs 1.372 af

Subcatchment pre: pre to cb at intersection Runoff Area=12.200 ac Runoff Depth>2.28"
Flow Length=1,155' Tc=50.2 min CN=56 Runoff=15.10 cfs 2.322 af

Reach 1R: 18" pipe (CAPACITY ONLY)

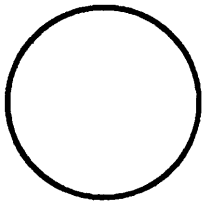
[43] Hint: Has no inflow (Outflow=Zero)

Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs, Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.50', Capacity at Bank-Full= 8.34 cfs

18.0" Diameter Pipe, n= 0.025 Corrugated metal
Length= 30.0' Slope= 0.0233 '/'
Inlet Invert= 161.80', Outlet Invert= 161.10'



Appendix L

SEQRA Resolution

TOWN OF PUTNAM VALLEY

MICHEAL RAIMONDI
Chairman
EUGENE YETTER, JR.
Vice Chairman
CORNERSTONE ASSOCIATES
Town Wetlands Inspector
THE CHAZEN COMPANIES
Town Planner
FOLCHETTI & ASSOCIATES, LLC
Town Engineer

PLANNING BOARD

265 Oscawana Lake Road
Putnam Valley, NY 10579-2004
(845)526-3740; Fax: (845)526-3307

E-mail llussier@putnamvalley.com

JOHN ZARCONE, JR.
Secretary
RICHARD TULLY
BILLY CROWDER
TOM CARANO
(Ad Hoc)
LAURA LUSSIER
Clerk

February 12, 2007

ACCEPTANCE OF THE FEIS AS COMPLETE
EMERALD RIDGE SUBDIVISION
VS CONSTRUCTION CORP
MARSH HILL ROAD
TM: 84.-1-5 AND 84.-1-10.1, 10.2, 10.3
FILE: 84./604/905 AND 904

WHEREAS, the applicant has reduced the density of the project from the Draft Environmental Impact Statement (DEIS) proposal of 25 lots and now proposed a 14-lot subdivision with a 31.0 acre conservation parcel; and

WHEREAS, the proposed action has been determined to be an Unlisted Action, pursuant to the New York State Environmental Quality Review Act (SEQRA) 6 NYCRR Part 617.4; and

WHEREAS, on June 5, 2006, the Planning Board accepted the DEIS as complete; and

WHEREAS, a public hearing on the DEIS, the Preliminary Subdivision Plan, the lot-line realignment, the Site Development Plan, the Major Grading Permit, and the Wetlands Permit was held on July 31, 2006; and

WHEREAS, the public hearing on the DEIS was closed on July 31, 2006; and

WHEREAS, written comment was accepted by the Planning Board until August 14, 2006; and

WHEREAS, the applicant has prepared a Final Environmental Impact Statement (FEIS) in accordance with 6 NYCRR Part 617; and

WHEREAS, the Planning Board and its consultants have reviewed the FEIS and all comments provided to the applicant have been satisfactorily addressed.

NOW THEREFORE BE IT RESOLVED THAT, the Emerald Ridge Subdivision FEIS, prepared by Tim Miller Associates, Inc., last revised February 5, 2007 has been found to be complete; and

BE IT FURTHER RESOLVED THAT, the Planning Board hereby adopts the attached Notice of Completion/Notice of Public Hearing/ENB Publication Form; and

BE IT FURTHER RESOLVED THAT, a public hearing on the FEIS, the Preliminary Subdivision Plan, the lot-line realignment, the Site Development Plan, the Major Grading Permit, and the Wetlands Permit will be held on March 12, 2007 at 6PM.

Motion: Billy L. Crowder

Second: Tom Carano

	Yea	Nay	Abstention	Absent
Tom Carano	X	____	____	____
Eugene T. Yetter, Jr.	X	____	____	____
Richard Tully	____	____	____	X
John Zarcone, Jr.	____	____	____	X
Billy L. Crowder	X	____	____	____
Chairman Michael Raimondi, Jr.	____	____	X	____

BY: _____
Vice Chairman Eugene Yetter