



Victoria Estates Subdivision

Hamden, Connecticut



King's Mark Environmental Review Team Report

King's Mark Resource Conservation
and Development Area, Inc.

Victoria Estates Subdivision Hamden, Connecticut



Environmental Review Team Report

Prepared by the
King's Mark Environmental Review Team
of the King's Mark
Resource Conservation and Development Area, Inc.

for the
Conservation Commission and
Planning and Zoning Commission
Hamden, Connecticut

October 1997

CT Environmental Review Teams
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Acknowledgments

This report is an outgrowth of a request from the Hamden Planning and Zoning Commission to the New Haven County Soil and Water Conservation District (SWCD). The SWCD referred this request to the King's Mark Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on Thursday, September 23, 1997.

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I would also like to thank Dan Kops, Hamden town planner, Bryan Geremia, owner/developer, Al Savarese, engineer and Mark Beroz, soil scientist for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review Team members were given plans and additional information. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the Town and landowner. This report identifies the existing

resource base and evaluates its significance to the proposed development, and also suggests considerations that should be of concern to the Town and applicant. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The King's Mark RC&D Executive Council hopes you will find this report of value and assistance in reviewing and making your decision on this proposed subdivision.

If you require additional information please contact:

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Introduction

Introduction

The Hamden Planning and Zoning Commission has requested assistance from the King's Mark Environmental Review Team in conducting an environmental review of the proposed Victoria Estates Subdivision.

The 17.88 acre site is located in an R-5 zone west of Thomas Street partially abutting the City of New Haven town line. The proposal reviewed included 47 single family house lots on lots ranging in size from 6000 sq. ft. to 33,000 sq. ft. Two new roads are proposed ending in cul-de-sacs. The site will be served by public sewer and water. The site is wooded with extensive wetlands. A proposed conservation easement totals 3.939 acres.

Objectives of the ERT Study

The Town has asked for assistance with the review of this project due to the extensive wetlands and intensity of development. This report will assist the town and the developer in designing a project that minimizes negative impacts on the land, water resources and wildlife.

The ERT Process

Through the efforts of the Planning and Zoning Commission this environmental review and report was prepared for the Town of Hamden.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the Town. Team members were able to review maps, plans and supporting documentation provided by the applicant.

The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

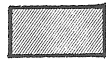
The data collection phase involved both literature and field research. The field review was conducted on September 23, 1997, and various Team members also made separate and/or additional field visits. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Topographic Map



Scale 1" = 2000'



Approximate Site



Soils Map



Scale 1" = 1320'



Wetland Resources

Materials Reviewed

Plans entitled "Victoria Estates / 105 Thomas Street / Hamden, CT," dated 7/14/97, last revised 10/14/97, by Savarese Associates, P. C.

Included in this section are observations of the wetland resources, the impacts that the proposed activities may have on those resources and recommendations for future development of this parcel given these possible impacts.

Existing Conditions

Most of the wetlands on this site are situated in the northern one third of the site. These wetlands are exclusively of the "palustrine forested" type. It drains to the Wilmount Brook which flows into New Haven and shortly thereafter flows to Wintergreen Brook a tributary to the West River.

Three much smaller isolated wetlands exist in the southern portion of the site. These have been mapped by the applicant as "Aquent" indicating that these soils have been disturbed through human activity. In this case it appears that the top layers of the soil have been removed quite some time ago, judging by the existing vegetation now in place. The isolated wetland in the southwestern corner of the site, in addition to containing aquent soils, also has an intermittent watercourse flowing through it. This watercourse emanates from a stormwater outlet near the southern property boundary.

Wetland Functional Values

The relevant functions associated with the northern wetland appear to be flood control, nutrient retention/sediment trapping, educational potential and wildlife.

During periods of high flow, these wetlands provide an area for water to flow out of its central watercourse and into the surrounding "riparian" area lessening downstream flood damage. The woody vegetation within the wetland provides a natural "velocity dissipator" to slow the flood flows down. The uneven surface and the soils themselves provide small but numerous areas for flood water storage.

Perhaps the most critical function for these wetlands is their nutrient/sediment removal capacity. The wetlands allow for storm water flows to slow to drop their sediment load along with the many urban stormwater pollutants that these sediments carry with them. Increasing the value of these

wetlands are the heavily developed areas upstream which can be expected to generate high levels of these urban pollutants.

For the wildlife considerations, the focus is shifted from upstream to downstream areas. This parcel of what is currently "open space", is in the Team wetland specialist's opinion, an extension of the West Rock Ridge open space area located 1500' to the southwest of this area. In between lies what appears to be a landfill of some type and one road crossing. This association would seem to provide a valuable connection for wildlife that uses the extensive West Rock Ridge area.

The educational value of these wetlands should also be noted due to their proximity to a school (app. 2000 feet to the west).

Compared to the northern wetland, the southern, isolated, disturbed wetlands have relatively low value and function. The primary function here appears to be storm flow conveyance which should be accounted for during development.

Proposed Activities

The current plan calls for upland development of 44 residential lots, most ranging in size from 6000 to 8000 square feet. Also planned is the construction of a stormwater detention basin.

Impact of Proposed Activities on Watercourses and Wetlands

There are no direct impacts (filling or excavation) proposed for this site. Indirect impacts that, without mitigation, are likely to occur as a result of construction at this site include erosion and subsequent sedimentation of wetlands and watercourses, dewatering of wetlands, stormwater quality/quantity alterations due to increased impervious surfaces and loss of upland areas adjacent to wetlands which enhance primarily the wildlife and nutrient retention/sediment trapping wetland functions described above.

The Sediment and Erosion Control plan has been substantially improved in response to recommendations from the New Haven Soil and Water Conservation District. The inclusion of a construction sequence and phasing plan will more likely do more to control erosion on this site than any other measure. One further suggestion is to plan for controlling any overland stormwater flow entering the site from the southerly abutting properties.

The mapping of moderately well-drained soils (Ludlow) as well as the apparent removal of the upper layer of the soil profile throughout portions of this site should prompt concerns for the necessity of subsurface as well as surface drainage structures throughout the southern and central portions of this parcel.

The relevance to wetlands here is that should this drainage be required, and if it is not properly redistributed onto downslope areas, it may effect the hydrology of the northern wetland area. This area appears to receive a substantial amount of its water budget from the area proposed to be developed.

The applicant is commended for proposing stormwater detention out of wetland areas in the adjacent upland buffer. However, this detention area appears to be more suited for stormwater quantity mitigation and not for stormwater quality renovation. Pre-treatment of the stormwater by proposing the sediment chamber at station 14+11 is good, but, there are improved designs which have been shown to remove more sediment and require less maintenance. To improve the performance of the detention basin's water quality improvement function the following items are offered:

1. It is not clear what percentage of stormwater runoff from impervious surfaces is to be detained in this basin. It is recommended that the first 1" of rainfall from these surfaces be detained. This has been shown to represent approximately 90% of all rainfall events throughout a given year.
2. The Surface Area (where water is in contact with the soil and plant material) to Volume Ratio of the pond should be maximized to allow for pollutant absorption and water cleansing microbial action. This can be accomplished by altering the shape of the pond to create more edge and to place at this edge a created marsh system (optimally half of the surface area should be planted as low and high marsh). The placement of islands within the basin can also increase this ration.
3. Maximize the flow path of stormwater through the basin by increasing the distance between the inlet and outlet (which are close together in the current design). This can be accomplished not only by further separation of the inlet and outlet but by the placement of berms within the basin which will direct flow in a circuitous path to the outlet.
4. The proximity to existing wetlands should allow for successful marsh creation, however it may also serve to decrease stormwater detention storage volumes due to the expected high groundwater table.

As mentioned above, there are no direct impacts proposed, however, land development is proposed within a widely variable "setback" from the northern wetland area. Some of the lot development (excluding the detention basin) will occur quite close to the wetland (lots 11, 17, 18, 19 and 22 for example). In light of the above discussion on the functional value of this wetland, the preservation of a suitable development "setback" for the purpose of buffering the effects of the proposed development is highly recommended. The question of "How far is far enough?" has resulted in several studies on the topic. In general, it depends on what function you are trying to preserve. The focus in this case should be erosion control, nutrient retention/sediment trapping, control and wildlife utilization. Buffers suited for these purposes should range from 50 to 200 feet (the greatest distance needed for the wildlife buffer).

Additional Recommendations

A trash rack should be included on the detention basin outlet detail.

Details for the detention basin inlet and outlet splash pads should be included with design calculations to assure that velocities will be non-erodible at the end of the pads.

Proposed contour lines with elevations clearly indicated should be included on the plan.

If construction activities covering five acres or more are approved, the applicant is required to apply to the CT-DEP for a general permit for the discharge of stormwater under the National Pollutant Discharge Elimination System (NPDES) program. For further information on this permit program contact Christopher Stone of the DEP Permitting Enforcement and Remediation Division at (860) 424-3850.

During the site walk, major head-cutting was observed within the channel of the watercourse located in the southwest corner of the property. It appears to be approximately 80 feet from the property line and progressing further toward this property line. It is recommended that channel stabilization measures be included as part of this permit process.

The Natural Diversity Data Base

According to an initial inquiry the Natural Diversity Data Base maps and files indicated that the possum haw, *Viburnum nudum*, was historically reported from the vicinity of the proposed project. *Viburnum nudum* is listed as State Special Concern - Historic (R.C.S.A. Section 26-306). This species grows in wooded swamps, wet pinelands and bogs. The NDDB did not have any recent information regarding the status of this population and it was recommended that a field survey be conducted by a botanist to determine if *Viburnum nudum* is present. This species is best looked for between May and October.

A site visit of the Victoria Estates Subdivision was conducted on September 23, 1997 by Bill Moorhead, a botanist working with the NDDB program. He searched the area to determine if *Viburnum nudum*, Possum haw, was present on the site. This species was not found and no suitable habitat for the species was observed. *Viburnum nudum* prefers nutrient poor wetlands; the wetlands on site were nutrient rich.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Wildlife Resources

Introduction

This section will focus on potential wildlife habitat impacts for the proposed development and recommendations for reducing wildlife resource impacts.

Materials reviewed were plans given out at the field review dated 7/14/97, revised 7/31/97.

Current Conditions

The 17.88 acres of forest and wetland areas currently provide a variety of wildlife with their habitat requirements. The property is located in an increasingly urbanized area and provides habitat for some adaptable wildlife species. Notably, the habitats on the property are heavily utilized by white-tailed deer (*Odocoileus virginiana*) and wild turkey (*Gallapavo gallapavo*). Overbrowsing of the forest understory by deer is evident. Unpalatable plant species such as highbush blueberry (*Vaccinium corymbosum*) were noted as being browsed by deer. One deer, an adult female, and four bearded male wild turkeys were observed during the site inspection. Ground scratching and leaf turnover by wild turkeys searching for food is evident throughout the property.

Upland Forest: The mixed hardwoods found on the property vary in age, but appear to be predominantly in the 15 to 30 year range. Wild grape vines (*Vitis* spp.) are found throughout the site and grapes were evident on the forest floor and appear to be quite prolific this year. Grapes provide a good late summer and fall food source for wildlife.

Wetland / Riparian Area: The wetlands on the property are wooded and the understory vegetation is dense in some areas despite the overbrowsing by deer. The proximity and juxtaposition of the larger wetland area to the west and south makes this area valuable as an interconnecting wildlife corridor and habitat. The wet seepy areas along with the accompanying lower canopy vegetation, dead wood, and rocks provide habitat for wildlife such as the Northern two-lined salamander (*Eurycea bislineata*), American toad (*Bufo a. americanus*), wood frog (*Rana sylvatica*) and Northern water snake (*Nerodia s. sipedon*). This wooded wetland and habitat conditions also may be frequented seasonally by hens with their young of wild turkeys (*Meleagris gallopavo*), ruffed grouse (*Bonasa umbellus*), and American woodcock (*Scolopax minor*) searching for the variety insects associated with the moist habitat conditions. A variety of other songbirds will also utilize this habitat seasonally. This area may also serve as stopover habitat for feeding or resting by many migrating songbirds as they make their northerly and southerly migrations.

Impacts and Recommendations

Reducing impacts to wetland areas and their buffers is important for maintaining habitat for wetland wildlife. Direct and indirect alteration of wetlands and their buffers should be minimized. Wetlands, by their very nature, provide a diversity of habitat components for wildlife. They will become increasingly important for local wildlife as the surrounding area continues to become urbanized.

- **Impact # 1** - Lots #12, #15, #16, and #18 are close to wetland areas and the wetland buffer. Post-development impacts such as rear yard filling, additions and dumping should be considered when configuring lots.
- **Recommendation # 1** - These lots should be reconfigured, joined or eliminated to reduce impacts to wetland area. The house footprints should be farther away from the wetland edge and buffer.
- **Impact # 2** - Lots #36 and #37 include a large portion of wetland area within the lots.
- **Recommendation #2** - Lots #36 and #37 should be joined or reconfigured to reduce the amount of wetland area found within the lots. The configuration of lot #37 makes it very difficult for a subsequent landowner to have a dry rear yard without impacting the wetland area. Joining lots #37 and #38 as one lot can help reduce impacts to the wetland area.
- **Impact #3** - Configuration of lot #28 places the house footprint close to wetlands and wetland buffer area.
- **Recommendation #3** - Lots #28 and #29 should be joined or reconfigured to reduce impacts to wetland areas.

General Discussion

Wildlife require food, water, shelter and space for their basic requirements for life. This property provides various wildlife with some or several of their habitat needs. Alteration of this wooded lot to a subdivision will impact wildlife by reducing the available food, shelter and space. The wildlife species that are more adaptable than others to the habitat changes which occur following subdivision development will remain. Adaptable wildlife species, including white-tailed deer, will continue to occupy the remaining habitat areas on the property and utilize the food and shelter available. More sensitive wildlife species (eg. neotropical forest interior bird species) that are less adaptable to major alterations to their surroundings will no longer occupy the property or may do so

only during migrations through the area for resting shelter or feeding on remaining natural foods.

The open space areas associated with this subdivision will help keep some valuable habitat intact for wildlife and allow the neighborhood residents to enjoy seeing wildlife in close proximity to where they live. However, an attempt to increase wetland boundary setbacks and minimize the footprint of development is recommended. Post-development impacts such as add-ons (pools, decks, garages, larger backyards) can result in further degradation of the habitat value of the open space areas. Care should be taken to configure lots to minimize immediate impacts to wetland areas and post-development impacts.

Plantings used for restoration or sedimentation basin use in the subdivision should be complimentary to existing plant communities in order to maximize the utility to wildlife. Native plants are most valuable for wildlife and should be used whenever feasible.

The following non-native trees, shrubs and vines should not be planted and, if present, should be removed:

Norway Maple (*Acer platanoides*)
Tree of Heaven (*Ailanthus altissima*)
Catalpa (*Catalpa* spp.)
Autumn Olive (*Elaeagnus altissima*)
Winged Euonymus (*Euonymus alatus*)
Privet (*Ligustrum* spp.)
Amur Honeysuckle (*Lonicera mackii*)
Morrow's Honeysuckle (*Lonicera morrowii*)
Tartarian Honeysuckle (*Lonicera tatarica*)
Common Buckthorn (*Rhamnus cathartica*)
Glossy Buckthorn (*Rhamnus frangula*)
Multiflora Rose (*Rosa multiflora*)
Asiatic Bittersweet (*Celastrus orbiculatus*)
Japanese Honeysuckle (*Lonicera japonica*)

Maintaining natural vegetation along roads, open space or undeveloped areas is strongly recommended. The Team wildlife biologist is available for further consultation upon request.

Planning Review

Materials Reviewed

Plans reviewed were those given out at the field review review dated 7/14/97, revised 7/31/97.

Site Location

The 17.88 acre site is located in the southwest corner of the Town of Hamden abutting the City of New Haven. The site lies in the Pine Rock district of the community. The parcel is adjacent to medium to high density detached single family residential housing.

Site Characteristics

The site is heavily wooded and has an extensive amount of wetlands present. The field visit indicated a varied wildlife habitat and use by local residents. An old logging road was present on the site. A detention basin will be constructed and properly sized to handle stormwater runoff from the both cul-de-sacs. A proposed 3.9 acre conservation easement runs in an east to west direction composed of mostly wetland areas. All lots are to served by public water and sanitary sewers.

Conformity with Zoning Regulations & Municipal Plans

The site is located in the R-5 zone which provides for moderate density residential development. The R-5 zone requires each lot to contain at least 6,000 square feet and a minimum width of at least 60 feet measured at the required front yard setback. All rear lots must be at least 50% larger than the standard minimum lot permitted in that zone. Additionally, there must be a buffer of at least 50 feet between any structures on the rear lot and the boundary between the front and rear lots. The buffer must contain evergreens or fencing providing adequate screening. The proposed residential development is seeking a waiver from the regulations to provide sidewalks for Thomas Street frontage and one side of the Victoria Court and Rebecca Lane cul-de-sacs.

Traffic Circulation/Site Access/Off-Site Impacts

An approximate 800 foot cul-de-sac (Victoria Court) would provide a single access to Thomas Street for Phase II & III of the proposed development. A

335 foot cul-de-sac (Rebecca Lane) feeds into Victoria Court to provide access to 10 building lots. The main access (Victoria Court) joins Thomas Street between Rosina Road and Welch Street. From a traffic safety perspective it may be more appropriate to directly align the Victoria Court access with Westerfield Road to eliminate any potential traffic hazards along Thomas Street. Passenger trips originating from the residential development would most likely be split. Most trips would seek to access the local arterials, Pine Rock Road and Woodin Street. Most auto trips would access Pine Rock Avenue via Westerfield Road and access Woodin Street via Thomas Street. Sidewalks along Thomas Street and Victoria Court would provide pedestrian safety and a better sense of neighborhood for the high-density development. Paved driveway grades and lengths should be kept to a minimum to reduce impervious coverage and stormwater runoff.

Selected Demographics and Statistics

Based on 1990 census information the area population within one half mile radius of the residential development is upwards to 4,000 people. Based on the most recent available state housing reports the Town of Hamden recorded 81 building permits in 1994. The previous year the town recorded 336 building permits, the majority of which were contained in eight apartment structures, which were an addition to an existing housing development project. From 1985 through 1993, a total of 2,690 building permits were drawn in the Town of Hamden. In 1994, the median sales price of existing housing within the town was recorded as \$113,000. The site is within one half mile of the Helen Street elementary school and Eli Whitney technical school and playground fields. The 1990 Census revealed the following general information for the immediate area bordered by the Wilbur Cross Parkway, Pine Rock Ave., Helen Street, Fairview Avenue, and the City of New Haven border.

- Population - 823
- Households - 468
- Median Family Income - \$41,182

Land Use Planning

The proposed residential neighborhood appears to be consistent with the medium to high density existing single family residences located throughout the Pine Rock area. During the field visit, the developers indicated that three of the rear lots (15,16 & 18) would be eliminated. Other "marginal" lots (Lots 11, 12, 30, 31, 34, 35, 36 & 39), should be reviewed carefully due to the proximity of building envelopes to wetlands or irregular shapes.

The Town should seek a consulting engineer to review the drainage plans, recommend appropriate best management practices and assess any potential off site watershed impacts due to the proposed 40+ lot residential development.

Careful attention should be directed to the stormwater flow from the High Top Circle residential development.

A homeowners' association may be the most appropriate entity to provide ownership and maintain the conservation easements and limit or control access to the property. Land protected by conservation easements should have detailed management plans so that landowners and town officials have a clear understanding of the resource protection goals, needs, or problems associated with the land. Other communities may encourage the open space to be maintained via conservation easements by a third party Land Trust or the municipality. A homeowners' association might be preferred, due to the fact that the conservation easement has limited access and the direct amenities of the open space is not evenly distributed throughout the subdivision.

The amount of clearing in the proposed development should be kept to a minimum to provide wildlife habitat, existing landscape features and buffer the noise from nearby land use operations. The storage and disposal of cleared trees, stumps and excavated materials needs to be detailed in the plans.