MCPB
Item # 9
11/14/02

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

November 7, 2002

MEMORANDUM

TO: Montgomery County Planning Board

VIA: John A. Carter, Chief JAC
Community-Based Planning Division

Khalid Afzal, Team Leader, Georgia Avenue Planning Team KA
Community-Based Planning Division

FROM: Frederick Vernon Boyd, Community Planner FVB
Georgia Avenue Planning Team (301/495-4654)

SUBJECT: Planning Board Worksession #1 on the Upper Rock Creek Area Master Plan—Discussion of Land Use Concept and Proposed Land Use Strategies

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RECOMMENDATION: *Discussion* of information and analysis requested by the Planning Board and *approval* of overall land use concept

Discussion

The first worksession on the Upper Rock Creek Area Master Plan seeks the Planning Board's approval of the overall land use concept outlined on pages 6-9 of the Public Hearing Draft and begins the process of reaching land use recommendations in the Residential Wedge, which are outlined on pages 10-11. The primary topic—the comparative merits of development using septic systems and clustering—reflects requests for information and analysis made by the Planning Board at the public hearing sessions of October 3 and October 10.

This packet contains the following:

- This memorandum, which summarizes the Plan's Land Use Concept, reviews the rationales underlying its land use recommendations and offers a proposed schedule for reviewing remaining issues;
- A summary, with planning staff responses, of public hearing testimony on the plan's concept and on the issue of cluster development as well as a separate set of responses to issues raised in a paper prepared by the Upper Rock Creek Coalition;

- Three tables, requested by the Planning Board, showing
  - o Comparative overall lot yields for the major undeveloped properties, showing the Plan's recommendations, developer proposals where proposals have been made and theoretical zoning maximums,
  - o Comparative development standards in the low density residential zones considered during development of the Plan, and
  - o Comparative lot yields for four major undeveloped properties, showing how these properties might develop under the Upper Rock Creek Coalition's estimates and under a staff-prepared estimate;
- Submissions, also requested by the Planning Board, from development teams for the same major undeveloped properties, outlining in detail their proposals for the properties and providing a rationale for those proposals.

The Land Use Concept

The Upper Rock Creek Area Master Plan's concept has two primary elements, extending the open space heritage of the watershed and preserving residential character. The Concept reflects the Plan's efforts to protect environmental resources and maintain stream quality by keeping streams, forests and wetlands in a natural state. The second goal, maintaining low densities, also contributes to stream quality by limiting imperviousness and is in keeping with the wedges and corridors concept outlined by the General Plan.

The Plan's recommendations implement the concept by directing development away from sensitive areas, pursuing open space through dedication, acquisition or easements and establishing low-density zones. By maintaining lowest densities adjacent to stream valleys and low densities along ridges and by crafting guidelines designed to preserve open spaces in areas where new and old communities meet, the Plan endeavors to preserve existing residential character. The Concept sketch included in the Public Hearing Draft is reproduced as part of this packet.

The Concept meets environmental and land use objectives of the 1993 General Plan Refinement. The Planning Board heard testimony from the Upper Rock Creek Coalition and others suggesting that the Plan had failed to follow the tenets of the General Plan in devising its recommendations. Two things should be noted about this assertion. First, the Refinement focuses on the interrelationships of a number of components in the land planning process, including land use, transportation, housing, community identity and environmental resources.

Second, these interrelationships require balancing of goals and objectives between and among land planning components; no single component is dominant. The Plan's recommendations balance land use and environmental goals, recognizing that each is important, but neither is dominant.

Approaching the Land Use Recommendations for the Residential Wedge

The Land Use Plan implements the Concept on individual properties. It reinforces the low-density residential character while preserving environmental resources and maintaining the area's stream quality. It also recognizes that the history of planning in the Upper Rock Creek watershed has focused on the efficacy of cluster development and provision of sewer service as tools to protect sensitive resources.

Table 1 shows the number of lots proposed on the six major undeveloped properties by the Upper Rock Creek Coalition, the Public Hearing Draft Plan and by those developers who have made concrete proposals for their properties. It also shows the theoretical maximum number of units permitted on each property under the current zoning. The Coalition's proposals envision septic development of all six properties; the developers of the Dungan, Casey, Freeman and Woodlawn properties have made proposals that require community water and sewer service to the properties. No proposals have been made for the Hendry or Fraley properties, but their owners, both working farmers who may continue to farm, have indicated that septic development is appropriate for their properties. The Plan's recommendations envision septic development on the Dungan property, if it is not acquired through the Legacy Open Space program, cluster development with community sewer service on the Freeman and Woodlawn properties and a mix of septic and cluster development on the Casey property.

These recommendations reflect differing answers to the same two- part question: when is it appropriate to use cluster development and community sewer service and when is it appropriate to use septic development? The Plan recommends cluster development and community sewer service when large, contiguous blocks of sensitive areas like forests, wetlands or headwaters areas are present on a site, where sewer service is available and does not disturb sensitive stream buffers and where levels of imperviousness do not differ significantly between septic and cluster/sewer development. Septic development is appropriate when sewer lines would disturb stream buffers and when sensitive areas like wetlands, steep slopes and floodplains are contained within regulatory stream buffers.

Where the Plan recommends cluster development using community sewer service, it does so in the belief that the open space associated with the cluster development should also be in common or public ownership. The Plan recognizes that creation of easements on private lots can preserve open space, but prefers cluster development that maximizes common ownership of and access to open space in its natural state. Table 2 shows comparisons among the development standards of the low-density residential zones. Of particular importance are the varying provisions for open space among the zones. The RE-1, RE-2 and Rural zones have no regulatory requirements for providing open space, which in practice means that dedications for parkland are not routinely sought as part of the development process unless a master plan shows park take lines on a property. Easements can be applied to preserve forest, for example, but enforcement can be problematic.

Table 3 provides a comparative look at development using septic systems and using community sewer service. As the Plan notes, it is difficult to compare potential development on a specific property using septic systems with potential development using community sewer. The estimates provided by the planning staff are based on average yields over the life of the 1985 Plan, roughly from 1985 to the end of 1999. They were derived by comparing the actual yield from each subdivision with the maximum yield the relevant zone allows. This method provides historic context, but unfortunately cannot consider geologic and topographic conditions that ultimately determine how a piece of property "percs."

It should be noted, however, that the staff's forecasts and the Plan recommendations, while they show increases over the estimates provided by the Coalition, do not double or triple the densities on any property, an assertion made at the public hearing. In the end, the Plan is premised on the idea that the most appropriate and effective way to preserve continuous and recognizable open space is through common or public ownership.

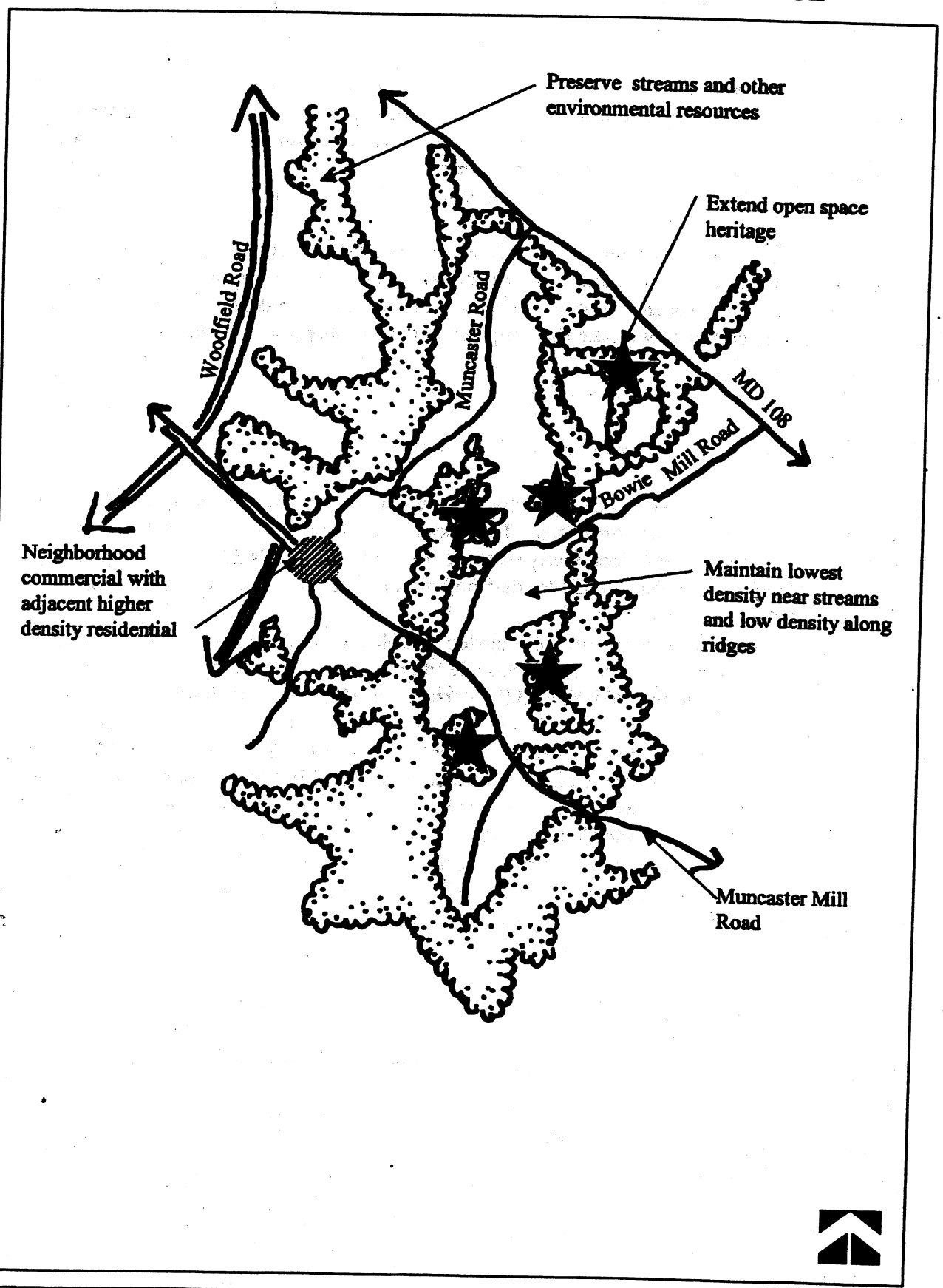
Remaining Worksessions

Planning staff proposes to follow this first worksession with three more:

- December 5 - Environmental Resources, Park Issues and Land Use Recommendations
- December 19 - Transportation
- January 16 - Remaining Issues and Approval of Planning Board Draft

FB:ha: g:\boyd1\firstwksessioncvr.doc
Attachments

CONCEPT: A COMMUNITY FOR THE RESIDENTIAL WEDGE



Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan Land Use Concept and Cluster Development Proposals

Speaker	*Comments*	*Staff Response*
Douglas M. Duncan, County Executive	Supports Plan concept Generally supports land use plan Recommends continued consideration of MPDUs on RE-2C and RNC properties	
Alan Strelser	Opposes cluster development on Casey and Freeman properties Sewer systems may lead to density increases Extensions should not occur without compelling reasons No yield estimates are provided for septic development on the Casey property	Cluster development shifts allowable density from one part of a property to another, removing it permanently from the residual open space; cluster development is proposed when blocks of contiguous forest and wetlands should be maintained, reasons the Plan considers compelling; where resources are less likely to be directly affected by development, but warrant protection, the Plan proposes a cluster and a non-cluster option Percolation tests for the Casey property were approved in 1992; they indicated a yield of 85 lots on the property. The Plan proposes 134 lots if the cluster development option is used
Mr and Mrs James M Ellis	Supports Option 2 for development of Casey property	Planning staff agrees that septic development on the Casey property can achieve Plan goals and objectives
Lesley and Derek Woods, individuals	Cluster development adds more houses to area	Planning staff acknowledges that yields will increase with cluster development, but believes that preservation of open space in its natural state is a public benefit. Planning staff also believes that common ownership of open space is the most appropriate means of preservation, while acknowledging that easements on private property are effective as well.
Daniel Stafford, individual	Opposes cluster development in the vicinity of Magruder High School	

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan
Land Use Concept and Cluster Development Proposals

Speaker	*Comments*	*Staff Response*
Kristin and Patrick McNamara, individuals	Oppose proposals to increase density of development, which will overcrowd local schools and diminish quality of education for all students; Plan's zoning proposals double or triple allowable densities on Casey, Dungan and Freeman properties	The Plan proposes two options on the Casey property, one of which allows cluster development. The proposal, up to 134 lots, is 49 lots more than the number shown in an approved percolation test on the property; the Plan proposes to acquire the Dungan property so that it will not be residentially developed; no percolation tests have been submitted on the Freeman property, making comparisons difficult; the Plan proposal envisions 135 units on this property as well
Daniel Solomon, individual	Opposes cluster development and provision of sewer service	Please see response to Woods and Stafford, above
Linda Kuserk, Sequoyah Elementary School PTA	Opposes cluster development and provision of sewer service	
Paul Hatchett, indvidual	Supports development at densities consistent with current master plan	One- and two-acre densities are prevalent between the lakes and north of Muncaster Mill Road; the cluster proposals in this Plan call for two-acre densities
Jim Humphrey, Rally for Bethesda Coalition	Opposes sewer options in Upper Rock Creek because they will enable sprawl development in upper county increased densities in Bethesda are designed to prevent	Please see response to Woods and Stafford, above
Dan Gillespie, individual	Opposes cluster development because it will add density that crowds schools, increases danger on roads and damages ecosystems	
Sandra Rosenbaum, individual	Opposes cluster development because it will add density that crowds schools, increases danger on roads and damages ecosystems	Please see response to Woods and Stafford, above
Helen and Richard Zakour, individuals	Opposes cluster development because it will add density that crowds schools, increases danger on roads and damages ecosystems	
Chung-Hae Casler, individual	Opposes cluster development	

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan
Land Use Concept and Cluster Development Proposals

Speaker	*Comments*	*Staff Response*
Cathy Clark, individual	Opposes cluster development that will substantially increase housing densities and alter character of residential wedge	Please see response to Woods and Stafford as well as to McNamaras, above
Susan Petrocci, Norbeck Meadows Civic Association	Opposes extension of sewer service to Casey, Freeman, Dungan and Woodlawn properties	
	Extension of service endorses cluster housing and 80 percent to 100 percent increases in housing density	Please see response to McNamaras, above
	Protection of open space does not justify significant increases in density; 60 percent of land offered as open space on Casey property is undevelopable	As noted in detail in the response to Woods and Stafford, above, the Plan seeks to place open space in common ownership; septic development in the RE-1 and RE-2 zones generally does not include the ability to acquire land through dedication
John Crispeno, Mill Creek Towne Civic Association	Opposes extension of sewer service; supports maintaining current zoning	Please see response to Woods and Stafford, above
Karen Ehrlich, North Granby Woods Civic Association	Cluster development using sewer service has degraded streams south of Muncaster Mill Road	Development between the lakes has occurred at two-acre densities without sewer service; development between Redland and Needwood roads generally predates the 1968 Plan and occurred in the R-200 zone under a development category that allowed averaging of lot sizes and promoted but did not require open space preservation; this development adhered to contemporary master plans and sewer policies; this portion of the stream valley is Use IV
	No cluster development is compatible with adjacent communities; houses close together constitute visual clutter	The Plan provides guidelines that, among other things, propose to preserve residential character and existing views by orienting large lots along roads, placing cluster lots—which would be a minimum of 25000 square feet in size—away from existing communities and roads

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan
Land Use Concept and Cluster Development Proposals

Speaker	*Comments*	*Staff Response*
Karen Ehrlich, North Granby Woods Civic Association	Discussion of Casey property does not include review of Sequoyah Elementary School site location issues or existence of percolation tests for property	Both issues will be reviewed and discussed with the Planning Board during the worksessions
	Freeman property straddles boundary of Residential and Agricultural Wedge, so cluster development is inappropriate	The Freeman property is entirely in the RE-1 Zone, a low-density residential zone; in general, the Agricultural Wedge incorporates the Rural Density Transfer Zone, which is located north of MD 108 in this area
	Language on Hendry and Fraley properties implies that clustering is appropriate on portions in RE-2 Zone	Cluster development is and remains an option in the RE-1 Zone, so the statement is necessary to make it clear that the option is inappropriate in that zone. There is no cluster option in the RE-2 Zone; a separate zone, RE-2C, is necessary to enable cluster development.
	General Plan guidelines, definitions and descriptions are not reflected or applied in the Plan	The General Plan Refinement attempted to respond to the continuing evolution of Montgomery County. It explicitly does not recommend detailed zoning patterns and it does not provide guidelines for specific properties. Its goals, objectives and strategies focus on the interrelationships among a number of important components, including land use, transportation, housing, community identity and environmental resources. Its most important contribution is the creation of strategies that balance these components.
Kathy Parnell, Magruder High School PTSA	Existing development on septic does not intrude on sensitive landscapes and protects Residential Wedge	Please see response to Woods and Stafford, above

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan Land Use Concept and Cluster Development Proposals

Speaker	*Comment*	*Staff Response*
Jerome D. Miller, Cypress Homeowners Association	Supports cluster development to acquire parkland and in fairness to prospective future residents	Staff agrees
Art Diem, individual	Plan recommends cluster development with high density housing that is inconsistent with residential character of the area	Please see responses to Hatchett and Ehrlich (on compatibility), above
Joe Mornini, individual	Ongoing development results in loss of natural resources; recommends preserving wedges and open space	Please see responses to Woods and Stafford, and to Ehrlich (on the General Plan Refinement), above
David Hernandez, individual	Supports cluster development on Casey property	Staff agrees
Barry P. Davis, individual	Character of development with sewers is incompatible with adjacent communities Supports acquisition of Dungan property or, if property cannot be acquired, septic development	Please see response to Ehrlich (compatibility) above Staff agrees
Art Brodsky, Greater Olney Civic Association	Without percolation tests on specific properties, it is impossible to determine how to manage growth; Caps on development cannot be maintained	The Department is unable to order landowners to conduct percolation tests on private property. In general, this Plan finds setting appropriate densities through the zoning ordinance and more circumspect use of guidelines and plan language to be the most appropriate means of making Plan recommendations.
Deborah Perry, individual	Current zones and septic classifications should be retained	Please see response to Woods and Stafford, above
Robert R. Harris, Winchester Homes	Seeks cluster development using RNC Zone for Dungan and Woodlawn properties Concept Plan allows dedication of 91 acres of open space, conforms with planning policies and achieves public benefit; added units remain under zoning maximum	For the Dungan property, planning staff believes that limited septic development south of the right-of-way may be a more appropriate way to protect sensitive forest; for the Woodlawn property, development under RE-2C standards will make for a more compatible development
Julia F. Welsh, individual	Opposes cluster development and extension of sewer service	Please see response to Woods and Stafford, above
Susan Johnson, individual	Opposes higher density development in Upper Rock Creek	Please see response to Woods and Stafford, above

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan
Land Use Concept and Cluster Development Proposals

Speaker	*Comment*	*Staff Response*
Espy S. Driscoll, Bowie Mill Civic Association	Clustered homes on small lots using sewer service are inconsistent with surrounding neighborhoods	Please see response to Ehrlich (compatibility) above
	Council decision extending sewer service to Sheffield development being used as precedent	In the wake of its decision on Sheffield, the Council added the Upper Rock Creek master plan to the Planning Board work program and asked that the update focus on evaluating the impact of development on the watershed and the appropriateness of extending sewer service
	Private ownership of open space has advantages: land is protected while maintaining master plan integrity; developers and homeowners bound by master plan "contract;" no taxpayer dollars needed to acquire land; conservation easements can adequately protect open space; no taxpayer dollars needed to maintain land	This Plan acknowledges the ability of easements on private land to preserve open space, but is premised on the idea that the most appropriate way to preserve continuous and recognizable open space is through common or public ownership; while it is true that some homeowners have planted extensively, reliance on individual action is neither as efficient nor as effective as common ownership
	Community was promised when Sequoyah was built that sewer line serving the school would be limited access	This issue will be reviewed with the Planning Board during the worksessions
Elaine Adornetto, Muncaster Area Civic Association	Cluster development increases achievable density today and in the future; it constitutes sprawl and would destroy the semi-rural character of the area	Please see responses to Woods and Stafford and to the McNamaras, above
	No information was provided on percolation tests for undeveloped properties	Percolation tests for the Casey property were approved in 1992; they indicated a yield of 85 lots on the property; to Planning staff's knowledge, no percolation tests have been completed on the Dungan, Woodlawn or Freeman properties

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan Land Use Concept and Cluster Development Proposals

Speaker	*Comment*	*Staff Response*
Elaine Adornetto, Muncaster Area Civic Association	Private ownership of open space has advantages: land is protected while maintaining master plan integrity; developers and homeowners bound by master plan "contract;" no taxpayer dollars needed to acquire land; conservation easements can adequately protect open space; no taxpayer dollars needed to maintain land	Please see response to Driscoll (private ownership), above
Stephen Z. Kaufman, Freeman Property	Supports cluster development for property Believes, based on site characteristics and trunk sewer capacity, that appropriate density for property is 175-200 lots connected to sewer Company is willing to complete septic development scenario, but believes septic development would require encroachment on areas planning staff and company would prefer remain undisturbed Believes that Plan can contain sufficient guidelines and appropriate language that eliminate need to rezone property Should property be rezoned, company believes RNC is most appropriate	Planning staff agrees The RE-2C zone does the best job of setting a density appropriate to the area's residential character while providing adequate amounts of open space and limiting disturbance. In general, this Plan finds setting appropriate densities through the zoning ordinance and more circumspect use of guidelines and plan language to be the most appropriate means of making Plan recommendations.
Barbara Sears, Bozzuto Group	Seeks uniform zoning for property now split between RT-12.5 and R-90 to allow logical transition from commercial to institutional and residential uses as well as enabling improved use of open space, mitigation of impacts of adjoining roads and intelligent use of infrastructure Seeks RT-12.5 Zone for entire property	Staff agrees that uniform zoning on the property will provide a more logical transition from commercial to residential or institutional uses The RT-10 zone recommended is in keeping with actual yields on other townhouse developments adjacent to the Redland commercial area

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan Land Use Concept and Cluster Development Proposals

Speaker	*Comment*	*Staff Response*
Stephen Z. Kaufman, Casey Property	Requests that property remain in RE-1 and RE-2 zones and that cluster development method be applied; owner willing to limit development to 155 lots with 25000 square foot minimum lot size Cluster development using existing sewer infrastructure protects natural resources on property Attaches Dewberry and Davis study noting that septic development would require disturbance of virtually entire property Attaches plan for property showing imperviousness less than 10 percent Indicates that improved testing criteria and availability of community water would increase yield on septic Believes that Plan can contain sufficient guidelines and appropriate language that eliminate need to rezone property Should property be rezoned, company believes RNC is most appropriate	Planning staff agrees that cluster development is the most appropriate method of protecting natural resources on this property. If cluster development is a preferred option, the RE-2C and RE-2 zones on the Casey property do the best job of setting a density appropriate to the area's residential character while providing adequate amounts of open space and limiting disturbance. Planning staff agrees that improved testing criteria and the availability of community water may result in increased yields on septic and will offer evidence of that outcome as part of the worksessions. In addition, the staff will review with the Board the most current plan for the property and its imperviousness calculations. In general, this Plan finds setting appropriate densities through the zoning ordinance and more circumspect use of guidelines and plan language to be the most appropriate means of making Plan recommendations.
William Hendry, landowner and Master Plan Advisory Group member	Supports MPAG recommendations for undeveloped properties	Staff agrees with the MPAG's rationale for allowing cluster development, but believes that the Zoning Ordinance, rather than unit caps and open space set asides delineated by Plan language, is the most appropriate way to set densities

Summary of Public Hearing Testimony—Upper Rock Creek Area Master Plan
Land Use Concept and Cluster Development Proposals

Speaker	*Comment*	*Staff Response*
Patrick O'Keefe, Redland Middle School PTA	Opposes cluster and sewer development	Please see response to Woods and Stafford, above

Responses to Issues Raised by the Upper Rock Creek Coaltion

Issue	*Coalition Position*	*Response*
Wedge Character	Preserve and protect Residential Wedge	PH Draft recommendations reflect prevailing two-acre densities; Plan's open space recommendations, by adding to parkland inventory, enhance, not erode, open space character
Residential Densities	New development consistent with existing lot patterns	Cluster development at two-acre densities is consistent with the Residential Wedge; no "transitional" uses or densities are proposed; General Plan Refinement notes that public acquisition of stream valley parkland and "judicious" extensions of water and sewer systems reinforce wedge character, protect the environment and enhance community identity, all goals of this Plan
Infrastructure	Roads are inadequate to handle current traffic; schools are overcrowded; development should therefore be limited to current densities with septic	The Annual Growth Policy and Adequate Public Facilities Ordinance manage the relationship of infrastructure to development; should infrastructure—roads and schools in particular—be inadequate to support recommended development, these two tools can be employed to restore necessary balance.
Provision of water and sewer service	New sewer and cluster development should not be permitted; Planning Board and Council denied cluster development in Potomac for same reasons—potential for leapfrog applications—that apply in URC; current proposals increase densities	As noted above, extensions of service can reinforce wedge character; proposed sewer service extensions require no new lines in stream valleys and will not encourage leapfrog development, the points of concern in Potomac, because adjacent properties are across subwatershed boundaries and cannot be sewered using gravity lines of the type proposed in URC; on the Casey property, Plan proposals allow about 50 more units overall than the existing percolation results; no percolation tests have been approved for the Freeman property, so the yield using septic systems is not known

Responses to Issues Raised by the Upper Rock Creek Coaltion

Issue	*Coalition Position*	*Response*
Open Space Preservation	Significant amounts of open space preserved through large lot development; key objective of 1985 Plan was preservation of continuous recognizable open space; large tracts of open land are vulnerable to future development	This Plan acknowledges the ability of easements on private land to preserve open space, but is premised on the idea that the most appropriate way to preserve continuous and recognizable open space is through common or public ownership; cluster development shifts allowable density from one part of a property to another, removing it permanently from the residual open space; it should be noted that the Sequoyah land exchange was reluctantly agreed to by the Planning Board in the wake of an urgent request from MCPS
Preservation of environmentally sensitive areas	Cluster option removed from 1985 Plan because of stormwater management concerns; low density development and individual actions have protected resources	This Plan recognizes that advances in regulatory techniques have alleviated concerns posed by the 1985 Plan, particularly significant improvements in stormwater management methods that have reduced waivers and largely eliminated use of regional, in-stream and wet ponds; while it is true that some homeowners have planted extensively, reliance on individual action is neither as efficient nor as effective as common ownership

Comparative Overall Lot Yields in Upper Rock Creek

Table 1

	Coalition	Plan	Developer Proposal	Existing Zoning Maximum
Casey	85	134	155	281
Freeman	100	135	175-200	332
Dungan	12	45	44	69
Woodlawn	26	31	24	39
Hendry/Fraley	127	127	none	215
Total	350	472		935

A Comparison of Development Standards in the Low Density Residential Zones

Table 2

	RE-1	RE-1 Cluster Option	RE-2	RE-2C Optional Method	Rural	Rural Cluster	RNC Optional Method
Minimum tract area	None	50 acres	None	50 acres	None	None	10 acres
Minimum net lot area for one-family detached dwelling	40,000 sq. ft.	15,000 sq. ft.	87,120 sq. ft.	25,000 sq. ft.	5 acres	40,000 sq. ft.	4,000 sq. ft.
Density of development	1 du per acre; 0.9 du per acre average	1 du per acre;	0.5 du per acre; 0.4 du per acre average	0.4 du per acre	1 du per 5 acres	1 du per 5 acres	Not to exceed 1 du per acre; recommended in master plan
Community water service?	Available; should conform to master plan, be "orderly and logical;" water without sewer must protect surface and ground waters	Required	Available; should conform to master plan, be "orderly and logical;" water without sewer must protect surface and ground waters	Required	Not available	Available, when cluster development approved in subdivision plan	Required, unless subdivision process demonstrates efficacy of limited number of well and septic lots
Community sewer service?	Discouraged by Ten-Year Plan; local master plans may recommend exceptions to policy	Required	Discouraged by Ten-Year Plan; local master plans may recommend exceptions to policy	Available; master plan must recommend cluster development with water but not sewer; resulting development must connect to water and meet septic guidelines	Not available	Not available	Required, unless subdivision process demonstrates efficacy of limited number of well and septic lots
Maximum percentage of net lot area that may be covered by buildings	15	Not applicable	25	Not applicable	10	10	35
Open space requirements	None; negotiations during development process may result in land dedication or creation of easements	Open space created by allowing flexibility in lot layout and size; developer must describe open space procedures and methods	None; negotiations during development process may result in land dedication or creation of easements	Open space created by allowing flexibility in lot layout and size; developer must describe open space procedures and methods	None; negotiations during development process may result in land dedication or creation of easements	Intent of zone is that 60 percent of property be in open space or agricultural use	Rural open space must comprise contiguous areas between 65 percent and 85 percent of the tract area
Minimum lot width	125 feet at front building line; 25 feet at street line	25 feet at street line	150 feet at front building line; 25 feet at street line	25 feet at street line	300 feet at front building line; 25 feet at street line	125 feet at front building line; 25 feet at street line	25 feet at street line
Minimum setback from street	50 feet	No dwelling unit can be nearer to any lot line than 15 feet	50 feet	No dwelling unit can be nearer to any lot line than 15 feet	None	50 feet	15 feet
Lot setbacks	17 feet from any side; 35 feet total on both sides; 35 feet rear		17 feet from any side; 35 feet total on both sides; 35 feet rear		20 feet from any side; 40 feet total on both sides; 35 feet rear	17 feet from any side; 35 feet total on both sides; 35 feet rear	8-foot side yard required; no rear yard less than 30 feet

MNCPPC—November 2002

A Comparison of Lot Yields on Developable Properties

Table 3

		Septic development yields		Yields	
Property	Acres	Coalition	Yield avg	Proposed Plan	Existing Zoning
Casey	336	85	139	134	281
Freeman	332	100	149	135	332
Dungan	132	12	45	45	69
Woodlawn	79	26	26	31	39
	879	223	359	345	721
DU per acre		0.25	0.41	0.39	0.82

The yield average is based on an analysis of subdivision approvals in the portion of the planning area north of Muncaster Mill Road. It is calculated by averaging the ratio of units achieved to the maximum zoning yield. In the RE-1 Zone, subdivisions achieved 45 percent of the maximum zoning yield. For the Freeman property, 45 percent of the maximum zoning yield equals 149 units.

Attachment 1
Documents and Drawings Associated with
Percolation Tests on the Casey Property
Submitted by the Upper Rock Creek Coalition

TO: Mr. Derick Berlage, Chairman
Members of the Planning Board
MNCPPC-MC

FROM: Susan Petrocci
Norbeck Meadows Civic Association
Testimony Slot #12, 10/3/02

SUBJECT: Percolation test results – Casey Property
Upper Rock Creek Master Plan

DATE: October 9, 2002

Following my testimony on October 3, 2002, I was asked to provide documentation regarding the percolation test results on the Casey property surrounding Magruder High School. Please find a copy of the documents from Mr. Gene von Gunten, Department of Permitting Services attached. In his memo, he refers to "the attached 3 prints...representative of the areas intended for approval." Mr. Fred Boyd has a single copy of the 3 prints which is titled "Pre-Preliminary Plan – Septic System Sewage Disposal", Bowie Mill Estates, Eugene B. Casey Trust Property.

If you have any further need to contact me, do not hesitate to do so. Again, thank you for listening to the concerns of my civic association.

Susan Petrocci

Susan Petrocci
4645 Cherry Valley Drive
Rockville, MD 20853
301-774-8003

DEPARTMENT OF PERMITTING SERVICES

Douglas M. Duncan
County Executive

Robert C. Hubbard
Director

MEMO

To: File @ Casey Property, M-NCPPC # 7-88050

From: Gene von Gunten, R.S.

Re: Approved pre-preliminary plans

Date: October 16, 2001

A review has been made of the above-listed subdivision file. On May 6, 1991 and on July 23, 1992 approval memos were signed by the Health Officer and sent to the Planning Board denoting approval for two plans:

1. **9 lots**, erroneously noted as 8 lots, in the path of the ICC. The lots approved were numbered 1-4, 6-9, and 11.

2. **85 lots**, numbered 1-85. These were outside the path of the ICC.

In the interim between 1992 and today, the approved plans showing the exact 85 lots have apparently been misplaced. The attached 3 prints, which show 108 lots, are representative of the areas intended for approval. The results of the original percolation tests remain in the file and could be used to evaluate a new proposal. It should be noted that the results of the percolation tests would still be considered valid. There have been changes in the Executive Regulations for On-Site Sewage Disposal that could affect the new lot 'yield'. The most notable is a requirement that adjacent septic fields be separated by a minimum 50-foot area. These regulation changes could result in slightly fewer than 85 lots being approved today. The developer would have the option of conducting additional tests, or re-configuring lots around existing tests, to recover the lost lots.

MONTGOMERY COUNTY HEALTH DEPARTMENT
100 Maryland Avenue, Suite #240
Rockville, Maryland 20850
(301) 217-7470

M E M O R A N D U M

July 23, 1992

TO: Maryland - National Capital Park and Planning Commission

FROM: Harold D. Gabel, M.D., Director

SUBJECT: Status of Preliminary Plan #7-88050
Casey Property
85 Lots, Lots 1-85

This is to notify you that the status of the above named subdivision plan which was received in this office on February 13, 1989 is as follows:

Approved with the following reservations.

1. Record plat must be a scale of 1"=100' or a certified film positive of the record plat at that scale.

2. Septic system easements are to be reflected on the record plat as approved on this preliminary plan.

3. Public water must be provided.

4. This plan is subject to approval of a preliminary plan.

If you have any further questions, contact Boyd M. Church at 738-3060.

HDG:BMC:paj
0062e

cc: Owner
Surveyor
Park & Planning

MONTGOMERY COUNTY HEALTH DEPARTMENT
100 Maryland Avenue, Suite #240
Rockville, Maryland 20850
(301) 217-7470

M E M O R A N D U M

May 6, 1991

TO: Maryland - National Capital Park and Planning Commission

FROM: Suzanne H. Muncy, Acting Director Suzanne H. Muncy

SUBJECT: Status of Preliminary Plan #7-88050

PROPERTY) Eugene B. Casey Trust (CASEY PROPER

8 Lots, 1CC 1-4, 6-9 & 11

This is to notify you that the status of the above named subdivision plan which was received in this office on February 13. 1989 is as follows:

Approved with the following reservations.

1. Recorded plat to be a scale of 1"= 100' or a certified film positive of the record plat at that scale.

2. Septic system easements are to be reflected on the record plat as approved on this preliminary plan.

3. This approval is for lots being held in reservation for the Inter County Connector.

4. This pre-preliminary plan approval is subject to final approval by the Health Department of a preliminary plan.

If you have any further questions, contact Boyd M. Church at 738-3060.

SHM:BMC:mjy
0062E

cc: Owner
Surveyor
Park & Planning
WSSC

Attachment 2
Documents and Drawings for the
Dungan and Woodlawn Properties
Submitted by Holland & Knight for Winchester Homes

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Bethesda, Maryland 20814-6301

301-654-7800
FAX 301-656-3978
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October 21, 2002

ROBERT R. HARRIS
301-215-6607

Internet Address:
rharris@hklaw.com

Hand Delivered

Mr. Derick Berlage
Chairman
Montgomery County Planning Board
8787 Georgia Avenue
Silver Spring, MD 20910

Re: Upper Rock Creek Master Plan - Dungan and Woodlawn Properties

Dear Chairman Berlage:

As you will recall, Mike Conley of Winchester Homes and I testified at the recent hearing in favor of cluster development being considered for these two properties. We enclose for you copies of the visual materials we presented by Power Point at the hearing and offer additional comments in response to questions raised by Planning Board members and other witnesses about such cluster development. Most importantly, we want to amplify what we believe to be a compelling case for Rural Neighborhood Cluster (RNC) zoning for these two properties.

Master Plan Advisory Group Process

First, we want to reply to the criticism offered by some of the witnesses regarding the staff's studies leading to cluster proposals in this Master Plan and to the overall Master Plan Advisory Group (MPAG) process. As discussed below, we believe the case for cluster development on sewer in the Upper Rock Creek area, as opposed to continued, large lot zoning on septic systems, is appropriate based on contemporary land use and environmental policies. We support staff's justification for such principles. Additionally, although some members of the community apparently are unfamiliar with the MPAG process, and criticized staff for including property owners and developers in the discussions, this is

clearly the appropriate method for considering all relevant issues and perspectives. It would be no more appropriate to exclude developers with substantial financial interests in the outcome of the Master Plan than it would to exclude individual homeowners. The give and take of discussions involving diverse interests is what produces the award-winning Master Plans which guide development in Montgomery County. The property owners offered useful comments and concepts but did not vote on their individual properties. Every Master Plan study with which I am familiar has, in fact, included this same process and combination of participants in the Advisory Group. Some may disagree with the group's strong majority, which supported cluster development on certain properties including Dungan and Woodlawn, but that disagreement is based more on their interest in maintaining the status quo than on any impropriety of an inclusive study process.

The Use of Cluster Zoning

The County's various cluster zoning provisions and the increasing trend towards such land uses are born out of the combined principles of providing housing for a growing population in all areas of the County and doing so in the most environmentally sound and fiscally prudent manner. Cluster development policies began years ago as a method primarily focused on protecting environmentally sensitive areas while enabling landowners to achieve economically viable development on the remainder of their land. This effort has been expressed most recently in the creation of the RNC zone by which a minimum of 65 percent of a site is preserved as open space.

The value of cluster zoning has been amplified in recent years by the County's increasing need to find sites for housing of all types. At the same time, it embraces Smart Growth land use principles which call for greater densities on a smaller portion of our land resources and an expressed disinterest in septic development with lots two acres or larger in size. If we are to address the demand for dwelling units for an additional 1 million people in the State of Maryland over the next 20 years, without consuming our farmland, forests and open spaces, we need to expand our use of cluster zoning even beyond past efforts and we cannot overlook opportunities in any master planning area. In addition, we now recognize the community planning benefits of more compact, walkable communities where neighbors act as neighbors, not isolated estate owners.

As we testified at the hearing, illustrative plans comparing two-acre estate lots on septic with RNC lots on public sewer provide a vivid picture of the benefits gained from cluster development on the Dungan and Woodlawn properties. We ask that you consider the enclosed visuals showing the

advantages of cluster development over large lot zoning from the design and open space perspective alone. We also have enclosed for the Dungan and Woodlawn properties, short outlines which describe the advantages of RNC zoning in more detail.

Density Comparisons of Cluster and Large Lot Zoning

We were asked to provide the Planning Board with additional information comparing the development potential under RNC zoning for the Dungan and Woodlawn properties, with large lot development on individual septic systems. We are pleased to do so but first are compelled to comment that the goal should not be one of avoiding any additional density in the Upper Rock Creek area beyond that planned many years ago, but rather should be an evaluation of how best to use the available land resources to meet our growing population needs while protecting the environment and existing communities from unreasonable impacts. We believe RNC zoning does that.

Using the Dungan property as an example, Winchester has pending a Pre Preliminary Plan (No. 7-02012) for 44 units on the 132 acre site (existing zoning permits up to 52 lots). Even using the estimates staff made during the Master Plan studies based upon more specific septic yields for each of the properties being considered for cluster development, the Dungan property would yield 32 lots with individual septic systems and would use the entire property. The RNC Concept Plan which we have prepared, shows 44 lots on only 22% of the property. This enables dedication of 91 acres for parkland/rural open space. Yes, this reflects 12 more units than staff's yield estimate for a septic project, but it is still measurably fewer units than the zoning maximum. More importantly, as reflected in the attached outline, it conforms better with the many other planning policies and achieves a variety of public benefits. The modest number of additional units will not adversely affect the community.

Impervious Area Limitations

Various witnesses suggested including a 10 percent impervious area limitation in connection with any new zoning for cluster development. Although such limitations really should be limited to areas of high environmental sensitivity such as the Paint Branch trout stream area or a small portion of the Clarksburg area where there are special aquifer issues, such a limitation may actually be possible for the Upper Rock Creek area if cluster development is approved for sites like the Dungan and Woodlawn properties. Previous Environmental Planning Staff estimates for imperviousness in the Upper Rock Creek and Olney Subregion indicate that existing RE-2 development where, like the Dungan and Woodlawn properties, there is water service but not sewer,

ranges from an impervious percentage of 11 percent to 16 percent. On the other hand, the RNC projects staff analyzed reflected an impervious range of only 8 to 10 percent. RE-2 development creates a higher imperviousness ratio because streets need to be much longer to reach all of the lots throughout the property, the homes are often larger, setback from the street with long driveways and turnaround areas, and they contain pools, separate garages or stables, tennis courts, and other such amenities. On the other hand, RNC allows for private roads, which can be narrower than public roads and only need to access a small portion of the property. Although high in quality, homes in an RNC area necessarily are smaller and rarely include the type of impervious amenities in 2 acre estates. Based upon our analysis, the Dungan and Woodlawn properties would not meet a 10 percent imperviousness ratio if developed under the existing RE-2 zoning. We are pleased to report, however, that they could in fact meet that ratio under RNC zoning. As such, RNC zoning emerges as the best alternative for yet another reason.

We respectfully request that the Planning Board recommend the Dungan and Woodlawn properties for RNC zoning with cluster development. Winchester would agree to the conditions proposed previously by the MPAG as a condition to such cluster zoning and reflected in the enclosed outlines.

Cordially yours,

Robert R. Harris

RRH:dt

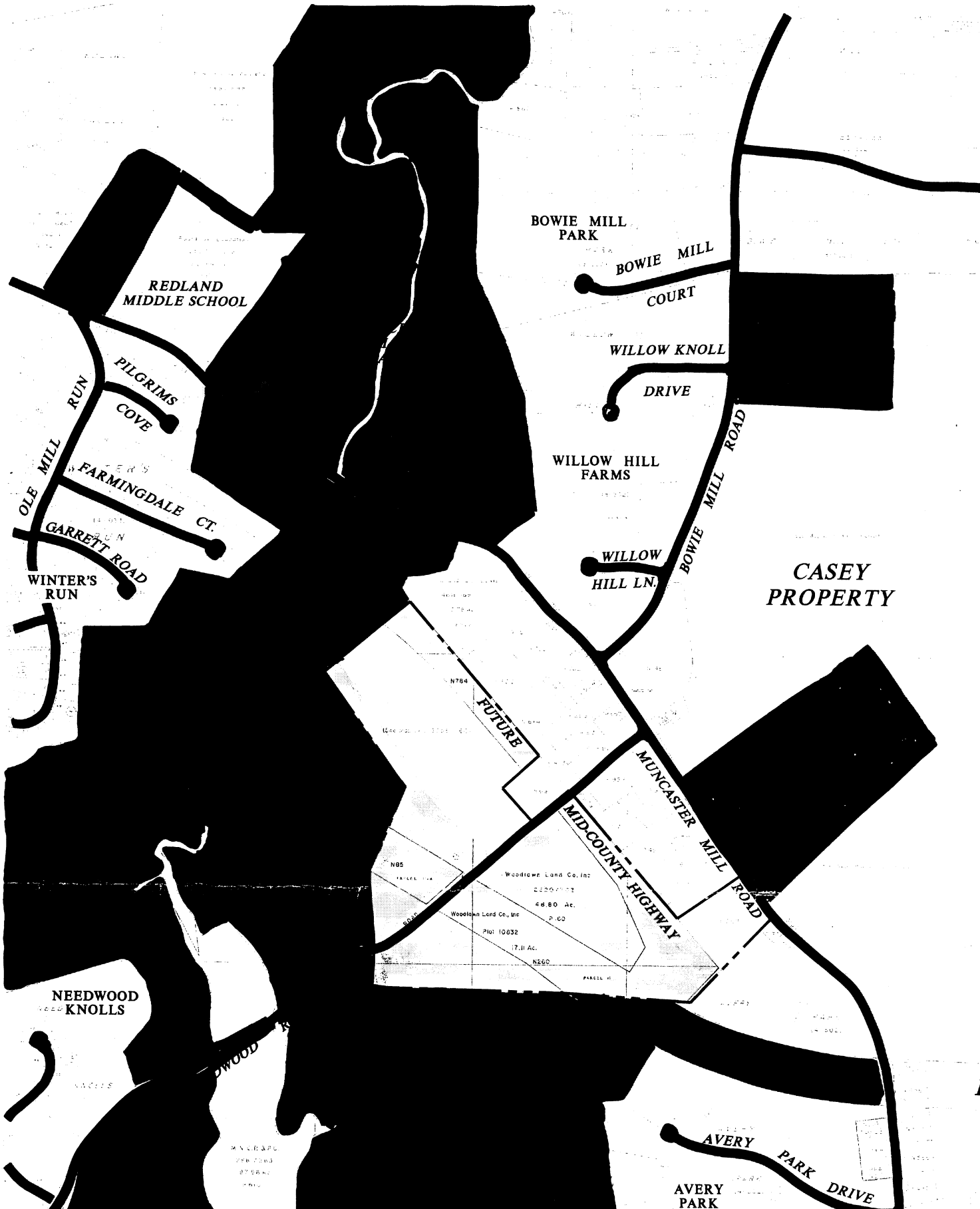
Enclosures

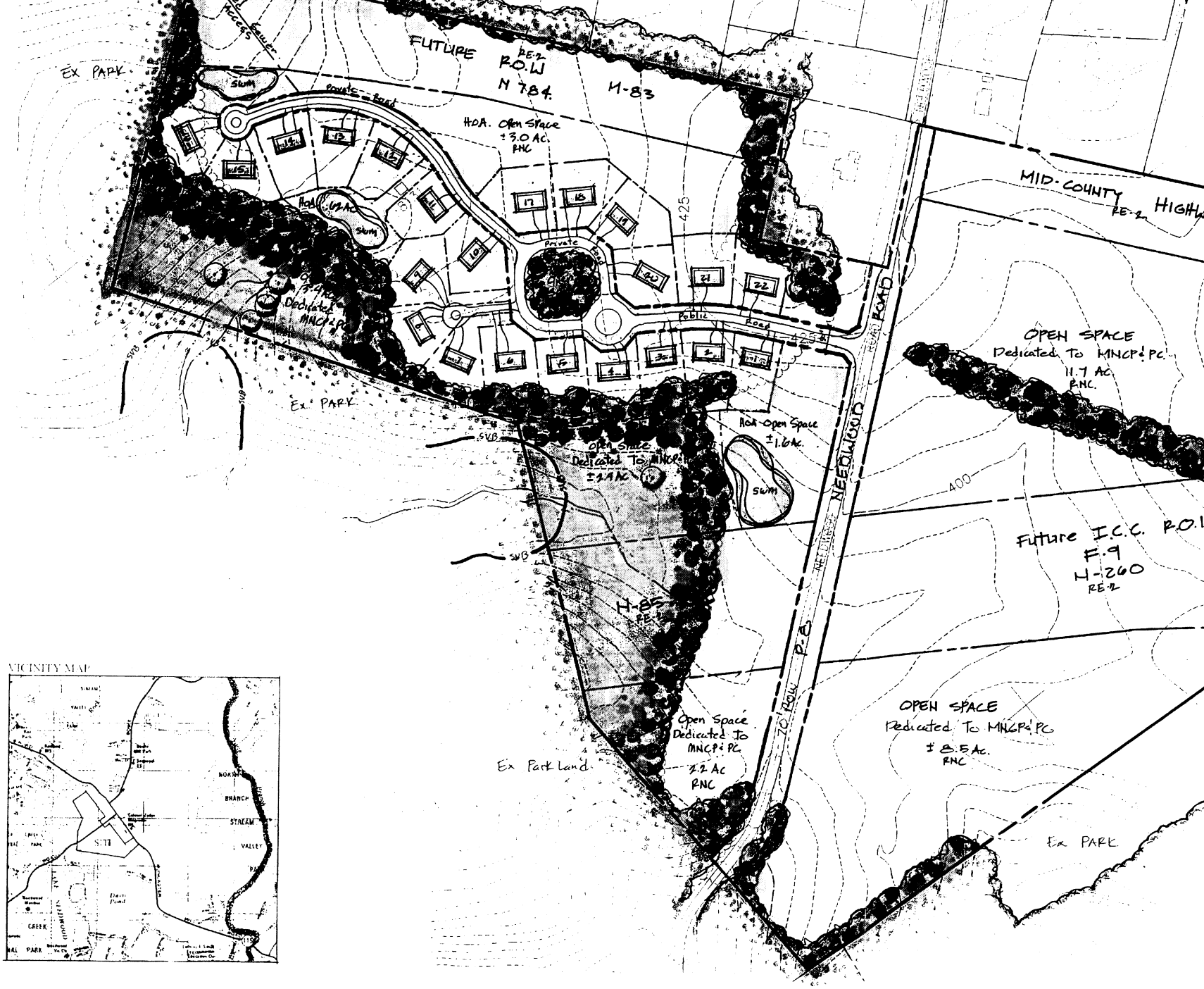
cc: with Enclosures:
Ms. Wendy Purdue
Mr. Allison Bryant
Mr. John Robinson
Ms. Meredith Wellington
Mr. Steve Nardella
Mr. Mike Conley
Mr. Fred Boyd

Upper Rock Creek Master Plan
Woodlawn Property
RNC Zoning

- Same general conditions and benefits as Dungan Property.
- 24 lots on 11% of the site.
- Park and open space of 34 acres.
- Additional park/right of way dedication of 28 acres.
- Very short connection to existing sewer, with no stream impact.
- RNC allows for smaller lots/greater clustering than RE-2C to avoid impact of roads/rights of way and create more walkable, livable community.

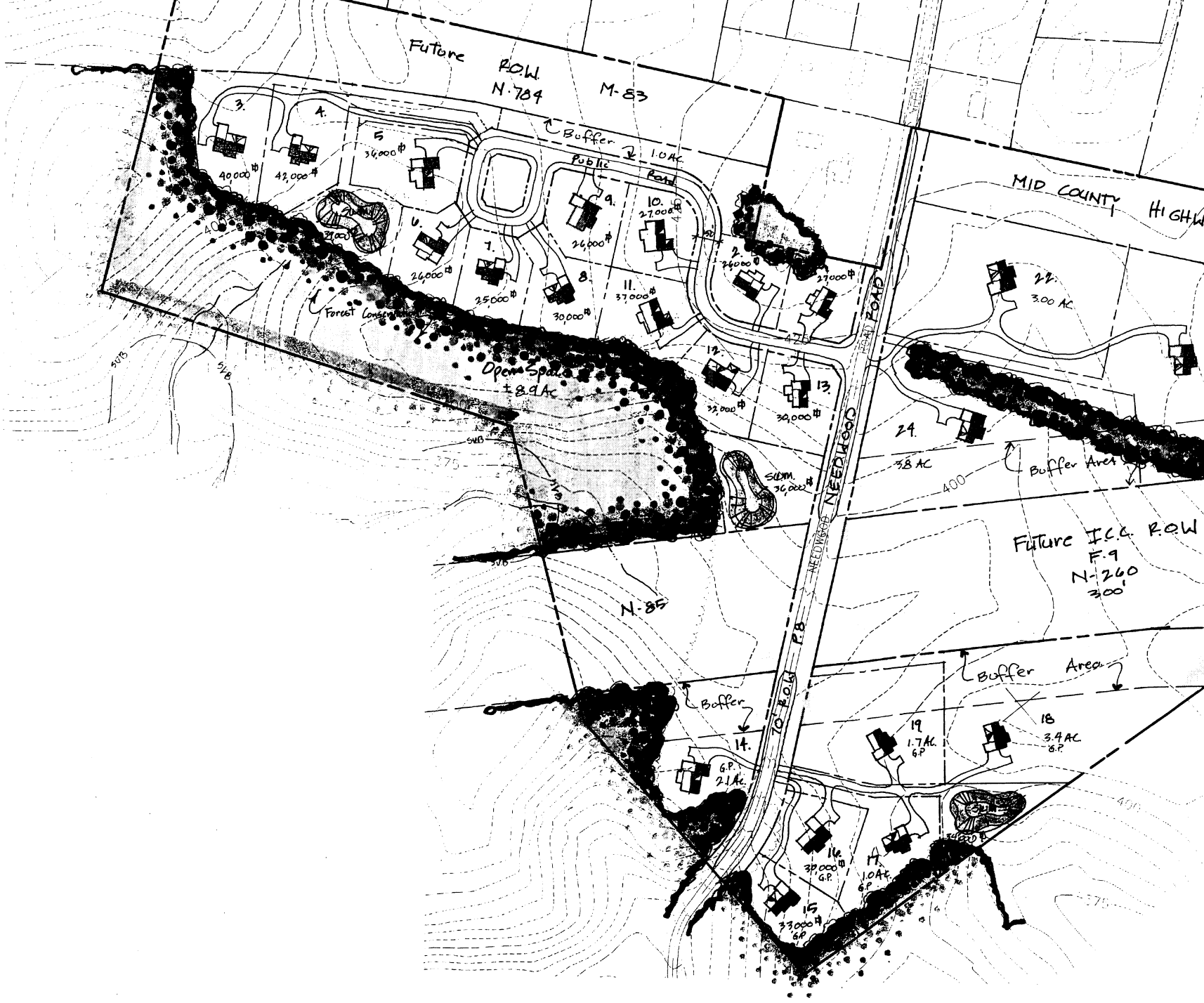
bsa1 #20588 v1


BOWIE MILL PARK
BOWIE MILL COURT
REDLAND MIDDLE SCHOOL
WILLOW KNOLL DRIVE
PILGRIMS COVE
OLE MILL RUN
FARMINGDALE CT.
WILLOW HILL FARMS
BOWIE MILL ROAD
GARRETT ROAD
WINTER'S RUN
WILLOW HILL LN.
CASEY PROPERTY
FUTURE
MUNCASTER MILL ROAD
MID-COUNTY HIGHWAY
NEEDWOOD KNOLLS
AVERY PARK DRIVE
AVERY PARK



VICINITY MAP

GLW GUTSCHICK LITTLE & WEBER, P.A.



GLW GUTSCHICK LITTLE & WEBER, P.A.
CIVIL ENGINEERS · LAND SURVEYORS · LAND PLANNERS · LANDSCAPE ARCHITECTS
1900 NATIONAL DRIVE - SUITE 250 BURTONSVILLE OFFICE PARK
BURTONSVILLE, MARYLAND 20866
TEL. 301-421-4024 BALT. 410-880-1820 DC/VA. 301-989-2524 FAX. 301-421-4186

DES.	DR.	CHK.

DATE	REVISION	BY	APPR.

PREPARED FOR:

WINCHESTER HOMES, INC.
6305 IVY LANE, SUITE 800
GREENBELT, MARYLAND 20770
301-474-4411

4TH ELECTION DISTRICT

Upper Rock Creek Master Plan
Dungan Property
RNC Zoning

- Dedication of 91 acres of public open space to expand North Branch Park along logical boundary

- Acquisition unlikely without dedication and no dedication required with RE-2 development

- Protection of most significant portion of property
  - mature hardwood area
  - mixed hardwood area adjoining Park and serving as buffer to biodiversity area
  - stream valley areas

- Voluntary dedication of 11 additional acres to M-NCPPC to hold for park or parkway purposes (dedication not required otherwise due to absence of access to potential roadway)

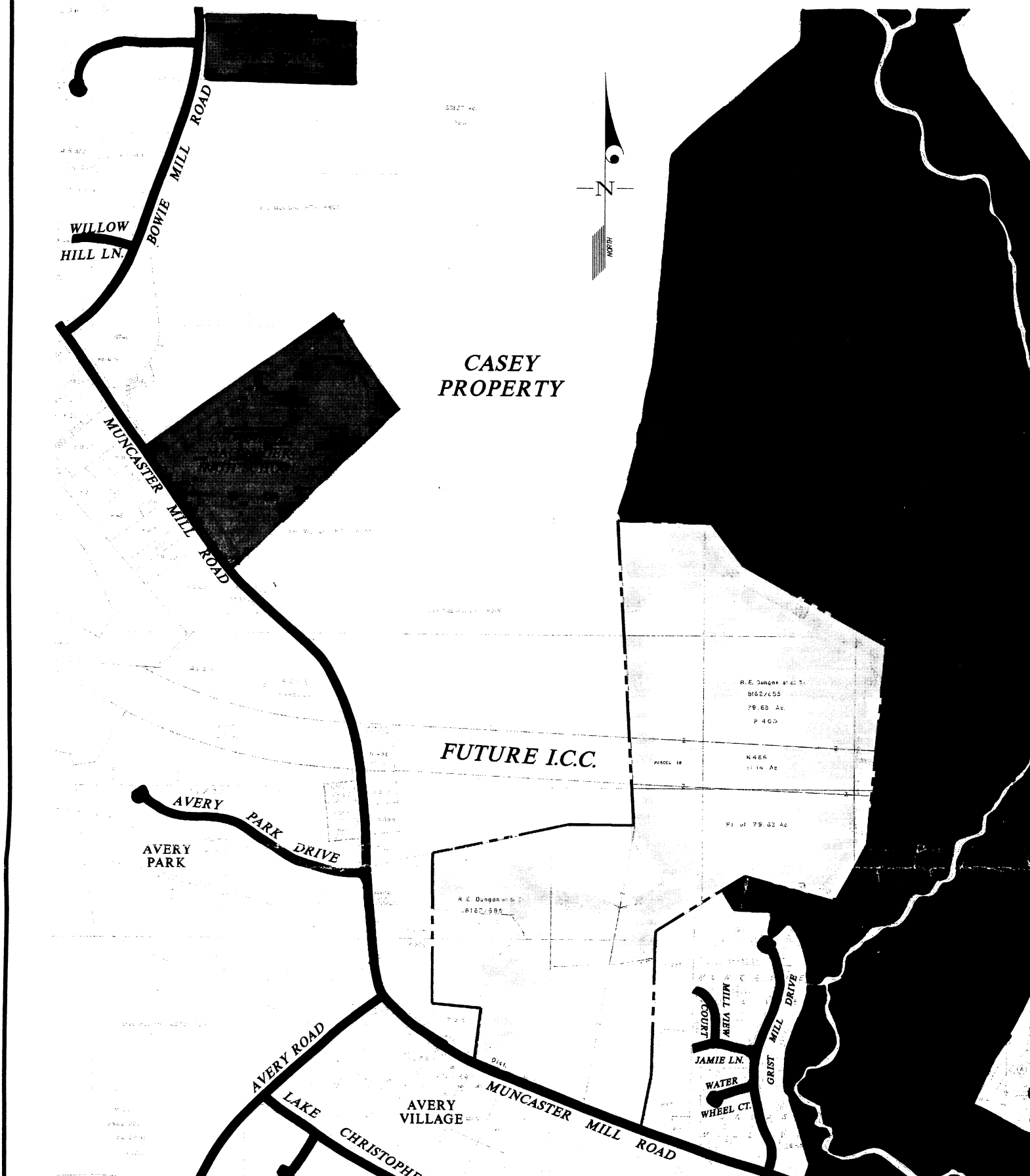
- Most efficient use of limited land resources to meet growing County housing demand and achieve State Smart Growth policy of higher yields on less land

- Development clustered on least sensitive portion of property
  - meadow and young growth trees (post 1983)
  - separated from park area
  - avoids stream crossing to reach rear lots under RE-2 option
  - significantly less roadway paving/impervious area (RE-2 requires wider public road and must extend to rear of site)
  - avoids forest fragmentation
  - all lots would avoid stream valley buffer

- Public sewer instead of individual septic systems
  - State policy to use public sewer rather than septic due to environmental impact of septic
  - logical and practical extension of existing nearby sewer line
    - no requirement for new trunk line
    - connections to adjoining subdivision lines
    - existing stubs anticipated such connection
  - environmentally responsive connection (see attached WSSC confirmation)
    - outside stream area
    - outside forest area
    - line runs in meadow/lawn area
    - temporary construction only (approximately 3 weeks)
    - best management practices to be followed

- Cluster compatible with area
  - 44 units comparable to density at Muncaster Mill View and Casey Property (future)
  - minimum lot size of 20,000 square feet as requested by community
  - additional setbacks along Muncaster Mill Road
  - walkable, closely knit community

- Complete compliance with Master Plan Advisory Group recommendation


BOWIE MILL ROAD
WILLOW
HILL LN.
N
NORTH
CASEY
PROPERTY
MUNCASTER MILL ROAD
FUTURE I.C.C.
AVERY
PARK DRIVE
AVERY
PARK
AVERY ROAD
LAKE
AVERY
VILLAGE
MUNCASTER MILL ROAD
COURT
MILL VIEW
GRIST MILL DRIVE
JAMIE LN.
WATER
WHEEL CT.


OPEN SPACE
MNCP&PC
± 45.0Ac
TREES
TREES
OPEN SPACE
MNCP&PC


North
425
400
TREES
R. E. Dungan et al Tr.
81607685
41.09 Ac
[redacted]

TREES
RUIN
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3.3 AC.
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2.0 AC
18
19.
13.
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21.
4.3 AC.
79.83
Septic field
5
4
24
25.
26.
27.

Attachment 3
Documents and Drawings for the Casey Property
Submitted by Linowes and Blocher for Oxbridge Development

LINOWES AND BLOCHER LLP

ATTORNEYS AT LAW

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October 24, 2002

Stephen Z. Kaufman
301.650.7056
szk@linowes-law.com

Via Hand Delivery

Derick Berlage, Chairman and
Members of the Planning Board
Maryland-National Capital Park
and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910

Re: Upper Rock Creek Area Master Plan - Casey Property

Dear Mr. Berlage and Members of the Planning Board:

In response to Mr. Robinson's request during the discussion on the Casey Property at the public hearing on October 3, 2002, we have prepared two charts comparing the development standards of the three zones, RE-1, RE-2C, and RNC. The first chart compares the development standards under the standard method of development. The second chart compares the development standards under the cluster or optional method of development. A copy of the charts is attached hereto as Exhibit "A". Based on our analysis of the three zones, we strongly believe that the best land use of the Casey Property is to maintain the current RE-1 and RE-2 zones and apply the cluster development method to the portions of the Property zoned RE-1 and, where appropriate from an environmental best practice approach, the standard development method to the remaining portions of the Property zoned RE-2. The Property owner is willing to proffer not to develop more than 155 lots of a minimum of 25,000 square feet each (equivalent to RE-2C in size of lots).

The Casey Property consists of approximately 336 acres of land located in the northeast quadrant of the intersection of Bowie Mill and Muncaster Mill Roads (the "Property"). Approximately two-thirds of the property is located in the RE-1 zone and the remainder is in the RE-2 zone. The right of way for a portion of the Intercounty Connector (the "ICC") crosses the Property and key natural resources, including forest, wetlands, and tributaries, have been identified on the Property. The Property is located adjacent to Sequoyah Elementary School and Magruder High School, which are served by community sewer. The main objectives of the

Upper Rock Creek Master Plan (the "Master Plan") for this Property are to protect the natural resources, limit imperviousness, and maintain the low density character of the neighborhood.

The combined application of the cluster development method of the RE-1 zone and the standard development method of the RE-2 zone can best achieve the public goals of preserving sensitive environmental areas and open space, minimizing impervious area, and protecting the character of existing neighborhoods while maintaining limitations on density of dwelling units per acre as set forth in the final approved Master Plan. These goals would be achieved through the use of existing public infrastructure, dedication of natural open space, flexibility in lot sizes, and site plan approval under the cluster development method. Consistent with staff's recommendation, use of existing community sewer service to implement cluster development would protect key natural resources on the Property through dedication of undeveloped open space. Dedication of open space would provide the best environmental protection because the open space would be under government control and ownership. There would be no need to rely on private conservation easements that must be actively enforced under the alternative large-lot development option.

Attached hereto as Exhibit "B" is a copy of a study by Dewberry & Davis LLC, comparing the advantages and disadvantages of public sewer versus on-site wastewater disposal for the Casey Property. The study observes that "individual on-site systems are typically constructed in areas where the connection to a centralized sewer system is not affordable to the public or as a temporary measure that is utilized until public sewer service is provided in the future." The study found that communities with failing septic systems face costly options, which require either "an extension of the public sewer to serve the area or remediation/replacement of the on-site septic system." Furthermore, system failures can have "significant consequences ranging from contamination of groundwater and surface water to on-site ponding and exposure of the public to life-threatening pathogens." The study indicates that "connection to the public sewer, where feasible at the time of development, is a more efficient and cost-effective option with respect to the long term." The study also notes that development of the Property using septic systems would require disturbance of virtually the entire Property, whereas development of the Property using public sewer would require less clearing and disturbance to the Property.

In the instant case, taking into account the general analysis and because potential public sewer connections are available at two locations near the Property, the study recommends that steps be taken to change the Casey Property from Sewer Category 6 to Sewer Category 3 to implement public sewer service.

Further, during the Draft Master Plan public hearing, representatives of community organizations, including the Sierra Club and the Audubon Natural Society, recommended a 10 percent cap of imperviousness on new development. Attached hereto as Exhibit "C" is a copy of the Preliminary Subdivision Plan of the Property showing the impervious area calculations. The impervious area for the proposed development of the Property, which does not include the area to be dedicated toward the ICC, is approximately 9.1 percent for the gross site area and 9.4 percent for the net site area. These levels of imperviousness are well below the recommended 10 percent cap.

Regarding the question of potential lot yield utilizing septic fields and wells, based upon previous percolation tests performed on the Property when community water was not available, the yield was approximately 85 to 95 sites. Due to improved testing criteria and the availability of community water today, we believe the yield would be higher. In any case, we believe that the yield of the Property on septic would be 90 sites at a minimum.[1]

The cluster development method for the RE-1 zone requires a minimum of 50 acres for development, a minimum lot area of 15,000 square feet, and a maximum density of one unit per acre. It also provides that common open space and preservation of trees be included in the required preliminary and site plan review process. These in turn give the Planning Board and surrounding community more public input and control of the development process. Thus, a proposed development must satisfy all the adequate public facilities and site plan tests. Alternatively, large lot development requires only subdivision review, but no site plan review. Based on allowable densities for the RE-1 and RE-2 zones and the Property's physical and environmental characteristics, the Property has been determined to be adequate for approximately 155 lots if the portion of the Property that can be clustered is connected to public sewer and each lot is a minimum of 25,000 square feet (equivalent to RE-2C in size of lots).

Notwithstanding specific guidance on minimum lot sizes and maximum density being set forth in the Master Plan under the cluster development method in the RE-1 zone, the Oxbridge Group is prepared to proffer certain restrictions on the development of the Property and record covenants of those restrictions in the Land Record of Montgomery County after the final Master Plan is adopted and subject to preliminary and site plan review. In addition, the Oxbridge Group would agree to, given the sewer, the appropriate mix and density of

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[1] The most recent analysis based on a study done by Dewberry & Davis LLC (attached as Exhibit "B", p.11) indicates that the Property would be adequate for approximately 149 lots using on-site septic systems.

development ultimately recommended by the approved Master Plan. Accordingly, with appropriate language setting forth the necessary criteria unique to this Property placed in the Master Plan, there is no necessity to rezone the Property from the current zones to the RE-2C zone in order to achieve the objectives of the Master Plan.

If the Property is to be rezoned, we believe the appropriate zone for the entire Property would be the Rural Neighborhood Cluster (RNC) zone. The RNC zone is a newer more flexible zone, which we believe to be a better tool than the RE-2C zone in accomplishing the public goals discussed above. The optional method of development for the RNC zone requires a minimum of 10 acres for development, and would allow an appropriate minimum net lot area as well as a maximum density per acre with conformance required to the density recommended by the approved Master Plan. It also requires significant rural open space (65 to 85 percent, depending on the guidelines of the Master Plan) in addition to common open space, connection to public sewer, and a diversity of lot sizes for developments of 70 acres or more. The lot sizes and maximum density would be determined by the unique physical characteristics of the Property and compatibility with existing density. Some of the lot sizes could be larger than the minimum 25,000 square feet as required for cluster under the RE-2C zone. Pursuant to § 59-C-9.575 of the Zoning Ordinance, site plan approval is required under the optional development method for the RNC zone. Consequently, the Planning Board would have significantly more control in the development of the Property under the RNC optional method than under the alternative large-lot development proposal which requires no site plan review.

If you have any further questions, please feel free to contact me.

Sincerely yours,

LINOWES AND BLOCHER LLP

Stephen Z. Kaufman

Enclosures

cc: Mr. Sami Totah

Below are two charts comparing the development standards of the RE-1, RE-2C, and RNC zones. The first chart compares the development standards under the standard method of development. The second chart compares the development standards under the cluster or optional method of development.

Chart 1: Standard Method of Development

Development Standards	RE-2C[1]	RE-1[1]	RNC
Min. net lot area for one-family detached dwelling	87,120 square feet	40,000 square feet	25,000 square feet
Max. density of development	1 unit per 2 acres	1 unit per acre	1 unit per 5 acres
Min. lot width at front bldg line for one-family detached dwelling[2]	150 feet	125 feet	100 feet
Min. lot width at existing or proposed street line	25 feet	25 feet	25 feet
Min. setback from street for *main building* In case of a corner lot, if adjoining lot on one of the streets either does not front on that street or is in a nonresidential zone, the setback from street must be	50 feet 20 feet	50 feet 20 feet	40 feet N/A
Setback from adjoining lot for *main building* - one side - sum of both sides - rear - abutting a public street	 17 feet 35 feet 35 feet N/A	 17 feet 35 feet 35 feet N/A	- 2 side yards required - 15 feet N/A 35 feet 50 feet[3]
Min. setback from street for *accessory building* from - street line - rear lot line - side lot line of an interior lot of a lot abutting a public st.	 80 feet 10 feet 15 feet	 80 feet 10 feet 15 feet	 80 feet 10 feet 15 feet 50 feet

Setback from streets for <u>corner lots</u> for *accessory building* - an accessory bldg or structure must not be closer to a street line than a main bldg - if adjoining lot on a side street is in a residential zone and has frontage on the side street, the setback from - side street line - rear lot line - if there is no residentially zoned lot on the side street in the same block and on the same side of the street, the setback from side street line	 50 feet 12 feet 20 feet	 50 feet 12 feet 20 feet	N/A
Max. bldg height	50 feet	50 feet	35 feet
Max. net lot coverage	25%	15%	10%
Min. Rural Open Space	N/A	N/A	60%, consistent with guidelines of the master plan
Public Water and Sewer	N/A	N/A	No public service, unless recommended by the master plan

[1] The following lots shall have the area and dimensional requirements of the zone applicable to them prior to their classification in the RE-2, RE-2C, and RE-1 zones: (1) A record lot approved for recordation by the Planning Board prior to the approval date of the most recent sectional map amendment that included the lot; (2) A lot created by deed on or before the approval date of the most recent sectional map amendment that included the lot; and (3) In the RE-2C zone, a lot created as a one-family residence by a child of the property owner or the spouse of a child or by the parents of the property owner, provided the property owner can establish that he/she had title on or before March 16, 1982. This provision permits the creation of only one lot for each child, whether created for the child or the spouse of the child, and only one lot for the parents, whether created for one or both parents. The overall density of the property shall not exceed 1.1 dwelling units per acre in any subdivision recorded.

[2] For the RE-2C and RE-1 zones, the minimum lot width at the building line and yard requirements for a main building or an accessory building or structure may be reduced when the lot is located in an historic district in accordance with the provisions of § 59-A-6.23.

Chart 2: Cluster[4] or Optional Method of Development

All requirements of the standard method of development in Chart 1 apply except as modified below.

Development Standards	RE-2C[5]	RE-1	RNC[7]
Min. area for development	50 acres[6]	50 acres[6]	10 acres[8]
Max. density of development	0.4 unit per acre	1 unit per acre	1 unit per acre, conform with guidelines of the master plan
Min. net lot area	25,000 square feet	15,000 square feet	4,000 square feet
Min. lot width at front bldg line	standard dev'pmt requirement of 150' does not apply	standard dev'pmt requirement of 125' does not apply	100 feet
Min. lot width at existing or proposed street line	25 feet	25 feet	25 feet
Max. net lot coverage	25%	15%	35%
Setbacks			
Setback from street	40 feet	40 feet	15 feet
No dwelling unit can be nearer to any lot line than	15 feet	15 feet	side yard, if provided – 8 feet; for side or rear yard abutting a lot not developed under optional method, setback must be at least equal to that required by abutting lot, provided that no rear yard less than 30 feet
except that a side yard adjoining a boundary line of the subdivision must not be less than that required in the adjoining zone	applicable	applicable	
minimum rear yard setback from any boundary line of subdivision	50 feet	50 feet	
except that the Planning Board may permit a lesser setback if the adjoining land is subdivided by the cluster method or is not classified in one-family residential zone	applicable	applicable	setback for accessory structures – 60 feet from street; 5 feet for side and rear yard

	RE-2C	RE-1	RNC
Sewer and Water	Connection to community water and sewer system is **required** except where land that is not served by community sewer in the RE-2C zone may be subdivided under the cluster development method if it meets all the following conditions: (a) an approved and adopted master plan or sector plan specifically recommends cluster development with community water but not community sewer; (b) the resulting development will be connected to community water; (c) the resulting development meets all of the individual sewerage systems outline in the most recent County Comprehensive Water Supply and Sewerage Systems Plan and Executive Regulation No. 5-79 on individual water supply and sewage disposal systems.		Connection to community water and sewer system is **required**, unless it can be demonstrated that at the time of subdivision that a limited number of lots on a private well and septic facility within the cluster will provide a more beneficial subdivision design because of environmental or compatibility reasons.
Common Open Space	The preliminary or site plan must include a description of the procedures and methods to be followed for assuring the common use and adequate maintenance of common open space included in the plan.		Required for all development of 10 units or more; such space, if provided, must not applied towards the Rural Open Space requirement.
Rural Open Space	N/A		65% - 85%, consistent with guidelines of master plan[9]
Preservation of Trees	The preliminary plan and site plan must show the location and extent of all trees as well as methods for preservation of those trees selected to remain.		
Dedicated Land	Land dedicated to public use for school and park sites may be included in the calculation of the density of development; provided, that development of the remaining land can be accomplished in		All land[10] in Rural Open Space must be preserved either by dedication to public use or by

[4] The Planning Board may permit the combining of 2 or more cluster developments in the same zone or in different zones. See § 59-C-1.526 of the Zoning Ordinance.

[5] In the RE-2C zone, lots may front on a private cul-de-sac if the Planning Board finds, as part of the cluster subdivision plan approval, that the private cul-de-sac: (1) provides safe and adequate access; (2) has sufficient width to accommodate the dwelling units proposed; (3) will better protect significant environmental features on and off site than would a public road; and (4) has proper drainage. Each private cul-de-sac must comply with the requirements of § 59-C-7.235 of the Zoning Ordinance and § 50-25(h) of the subdivision regulations pertaining to private roads. A subdivision with lots fronting on a private cul-de-sac may also be required to comply with the site plan review provisions of Division 59-D-3. See § 59-C-1.527 of the Zoning Ordinance.

[6] This minimum area requirement may be waived by the Planning Board upon a finding that the cluster development is more desirable for environmental reasons.

[7] Pursuant to § 59-C-9.575 of the Zoning Ordinance, site plan review is required under the optional method. Under § 59-C-9.573(e) of the Zoning Ordinance, lots may front a private street if the Planning Board finds, as part of the cluster subdivision plan approval, that the private street: (1) provides safe and adequate access; (2) has sufficient width to accommodate the dwelling units proposed; (3) will better advance the goal of preserving rural open space and the rural character than would a public road; and (4) has proper drainage. Each private road must comply with the requirements of § 59-C-7.234 of the Zoning Ordinance and § 50-25(h) of the subdivision regulations pertaining to private roads.

[8] The Planning Board may waive this requirement where the property abuts an existing property developed under the optional method of development, and the resulting development is a logical extension of the existing development. See § 59-C-9.573(a) of the Zoning Ordinance.

[9] The Planning Board may approve a minor variation in the recommendation of the master plan if the Board finds that the variation would retain both the quality and character of the open space as set forth in the guidelines of the master plan. The rural open space should be a contiguous area and be located and designed to: (1) protect rural features and other sensitive areas identified in the applicable master plan; and (2) maximize common boundaries with rural open space on adjacent tracts where recommended in the master plan, or as otherwise required by the Planning Board. See § 59-C-9.573(g)(1),(2) of the Zoning Ordinance.

[10] A developed lot intended to provide any portion of the Rural Open Space requirement must be a minimum of 10 acres, and a substantial majority of the lot must be encumbered by the instrument regulating the rural open space. See § 59-C-9.573(g)(4) of the Zoning Ordinance.

[11] The easement or covenant must restrict uses in the Rural Open Space to those set forth in the zone, establish procedures for the management of natural or agricultural features as set forth in the approved site plan and prohibit any further development or subdivision within the Rural Open Space. See § 59-C-9.573(g)(4) of the Zoning Ordinance.

COMPARISON OF PUBLIC SEWER VERSUS ON-SITE WASTEWATER DISPOSAL

Prepared For:

Oxbridge Development
Re: Casey Property @ Bowie Mill Estates

September 13, 2001

SUBMITTED BY:

Dewberry & Davis LLC
A Dewberry Company

Exhibit "B"

Comparison of Public Versus On-Site Wastewater Disposal

Casey Property @ Bowie Mill Estates

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1.0 INTRODUCTION

1.1 Background/Purpose

Oxbridge Development of Rockville, Maryland, is the owner/developer of a planned housing subdivision located in Montgomery County (refer to Vicinity Map in Appendix A) and known as the Casey Property @ Bowie Mill Estates. The subdivision consists of 336.4 acres located along the east side of Muncaster Mill Road and the south side of Bowie Mill Road (refer to Location Map in Appendix A).

The proper management of wastewater is one of the most important factors in maintaining a community's general health, and Oxbridge Development is currently evaluating wastewater collection and treatment options for the Casey Property. Although the development is located in an area that is not currently planned for public sewer service, adjacent properties are connected to public sewer. The close proximity of the site to existing public sewer suggests that an extension of the public system to the development may be feasible. The purpose of this Report is to summarize the relative advantages and disadvantages of public sewer service versus the use of on-site septic systems.

2.0 GENERAL COMPARISON OF PUBLIC SEWER VERSUS ON-SITE SEPTIC SYSTEMS

2.1 Overview of Options

There are two basic categories of wastewater management systems: centralized, public wastewater collection, conveyance, and treatment; and on-site septic systems which serve individual housing units. A brief discussion of each follows:

Connection to a public wastewater system consists simply of a discharge pipe from the homeowner's property to a collector sewer. Wastewater is conveyed through a network of pipes to a wastewater treatment facility that is typically owned and operated by a local governmental agency. This arrangement is illustrated in the typical public sewer system schematic in Appendix A. Wastewater from the treatment plant's service area is collected and treated to meet permitted discharge limits established by federal and state regulations to prevent degradation of the receiving water.

In contrast, on-site septic systems are, as the name implies, private wastewater disposal systems located on the homeowner's property. Raw wastewater from each home is discharged to an on-site underground septic tank, solids settle to the bottom of the tank, and "clarified" liquid is piped to a drainage field on the homeowner's property. The soils of the drainage field are relied on to absorb and filter the liquid. A typical on-site septic system schematic is provided in Appendix A. Maintenance of each system is the responsibility of the homeowner.

The following is a description of system selection considerations as they relate to technical feasibility and performance. The economics of system selection are, in general, not addressed in the context of this Report.

2.2 System Selection Considerations

2.2.1 Site Requirements

The primary requirement for a subdivision connection to a public sewer is access. This disqualifies many rural areas that are separated by great distances from existing or planned sewer infrastructure. Topography is also a consideration and areas with dramatic topographic relief may require the use of pump stations or low pressure sewer systems. Corrosive subsurface conditions may require the use of specialized pipe materials or corrosion protection systems. In addition, the presence of a high groundwater table may require extensive dewatering during construction. However, the

design and implementation of sewer systems to overcome these conditions is common and these conditions do not preclude the selection of a public sewer system[1].

The selection of on-site septic systems requires that each lot have sufficient land for a primary and replacement drainage field(s), generally a minimum of 10,000 square feet of usable soil absorption area[2]. The land required for the drainage field is restricted from other construction such as outbuildings, and vehicles should not be allowed to drive across or park on top of the on-site systems. Care must also be taken in landscaping around septic systems as tree roots can damage the tanks and associated piping.

Slope stability is another important consideration for siting on-site septic systems. For slopes greater than 25%, the potential for slope slump (i.e., collapse) and system failure are dramatically increased[3]. Raised mound type systems are the most sensitive to slope (refer to schematic in Appendix A). In general, the land should be relatively flat for an on-site septic system.

Adequate soil absorption capability is necessary for drainage field siting. The drainage potential of a soil is described by its percolation rate; relatively high percolation rates (2 – 4 inches per hour) are desired for effective drainage[3]. Soils with low percolation rates (e.g., clays) are not suitable for on-site septic systems.

Sufficient depth to groundwater (including water table levels during seasonally wet periods) and bedrock or other restrictive subsurface conditions are additional requirements for siting septic systems. Shallow depth to groundwater can render a site unsuitable for septic system installation. Raised mound systems were developed to compensate for high groundwater tables. However, areas where the depth to groundwater is less than two feet are unsuitable for any type of on-site septic system. Care must also be taken to consider groundwater mounding. This phenomenon occurs when the additional clarified liquid discharged to the drainage fields results in mounding

of the groundwater table underneath the drainage fields. On-site septic systems are not recommended for areas where groundwater mounding is a concern.

2.2.2 Maintenance and Useful Life

For public sewer connections, there are no maintenance requirements on the part of the homeowner except in the case of a pipe failure between the home and the public right-of-way. The remainder of the system is maintained by the local governmental agency. Public systems are generally expected to last many decades with a minimum of upkeep.

For on-site septic systems, the homeowner is responsible for maintenance and upkeep of the entire system (discharge piping, tank, and drainage field). With regular, typical household use, septage solids must be pumped from the septic tank periodically (a minimum of every 3 years) to ensure proper operation[3]. Historically, system failure has been common due to inadequate maintenance, physical damage to system components (e.g., pipes blocked by roots), or fluctuating environmental conditions such as freeze/thaw cycles and depth to groundwater.

Under optimum conditions, on-site septic systems are designed to have a lifetime of 20 to 30 years. Eventually, however, the soil around the drainage field becomes clogged with organic material, making the drainage field unusable. At this point, a new drainage field must be installed, or, if feasible, a connection made to a public sewer system. For this reason, on-site septic systems are generally considered temporary in nature.

2.2.3 Operational Control

Public wastewater treatment facilities are required to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharge of treated effluent to receiving bodies of water. These facilities are generally required to achieve secondary treatment, and in some cases tertiary treatment, or advanced treatment for removal of nutrients. Public systems are also subject to regular monitoring and reporting

requirements, as well as periodic inspections by regulatory agencies and enforcement action for non-compliance with permit requirements.

The private homeowner, by contrast, is not generally required to monitor or inspect his on-site septic system. The maintenance of on-site septic systems is totally dependent on each homeowner. For the homeowner, improper operation of a septic system can be difficult to detect, and problems are often difficult to diagnose. In some cases, operational problems can lead to offsite migration of contaminated groundwater or surface water that the homeowner may be unaware of. As a result, studies show that at any one time, 22 to 60 percent of the septic tanks in the United States are malfunctioning[3].

In terms of treatment performance for common wastewater pollutants (BOD, COD, suspended solids, etc.), on-site septic systems typically achieve 50 percent reduction whereas centralized wastewater treatment plants typically perform with efficiencies in excess of 90 percent[4].

2.2.4 Potential Water Quality Impacts

Potential impacts to groundwater resulting from operation of a public sewer are negligible. Discharges of treated wastewater to surface waters are regulated through the issuance of permits that specify maximum concentrations for pollutants of concern in the treated effluent.

On-site septic systems are generally less efficient, as noted above, in reducing wastewater strength. As the absorptive capacity of drainage fields decreases over time, groundwater impacts become more likely. In addition, toxic organic and inorganic chemicals such as those found in cleaners, insecticides, and other common household products, can pass through the septic system untreated.

Accumulation of pollutants in the groundwater can result in contamination of water supply wells and aquifers. Migration of nitrates, chemical toxins, and pathogens from septic systems to drinking water wells is a major concern in areas with no public water service. Impacts to surface waters, such as decreased dissolved oxygen concentration and increased nutrient loading, are also possible depending on the proximity of the drainage fields to surface waters.

2.2.5 Public Health/Safety

Health hazards, generally related to contamination of the effluent receiving waters, may arise from temporary upsets of a public wastewater treatment plant. Typically, however, plant unit operations and effluent conditions are closely monitored and upsets are discovered and corrective actions implemented within a few hours.

For on-site septic systems, improper siting, inadequate maintenance, or improper operation, or any combination of the above, can result in the creation of unsafe conditions or potential health hazards to the community. Health hazards can result when inadequately treated sewage either rises to the ground surface or flows into groundwater wells. Seasonally elevated groundwater table levels can result in saturation of the drainage field and standing surface water. These conditions can lead to the following[5,6,7]:

- foul odors;
- exposure to pathogens;
- attraction of disease-carrying vectors such as mosquitos;
- soil and groundwater contamination; and
- surface water degradation.

3.0 EVALUATION OF SITE-SPECIFIC CONDITIONS

The general issues raised in Section 2.0 apply universally to the wastewater system selection process. Site specific considerations for the Casey Property @ Bowie Mill Estates are discussed in this section.

3.1 Site Features

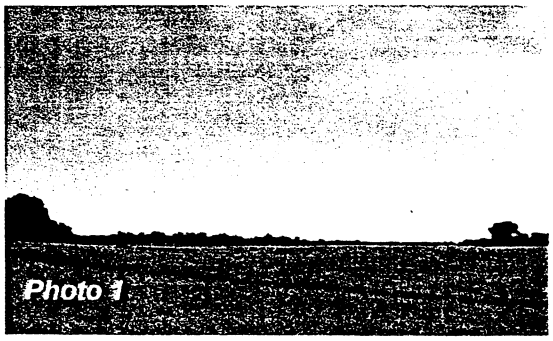
Photo 1

The 336.4-acre Estates is a predominately open site with rolling hills and approximately 10% of the area (35.5-acres) is wooded. Photo 1 is a typical landscape of the subject property. Tree stands are located along the perimeter of the property and in the northeast and southeast portions of the site. According to the Montgomery County Ten-Year Comprehensive Water Supply and Sewerage Plan, the property is situated in the S-6 Sewer Service Area Category which is an area of no planned sewer service[8]. Public sewers in the vicinity of the subject property discharge to the Blue Plains Wastewater Treatment Plant which is located along the Potomac River in southeast Washington, D.C. The Blue Plains WWTP currently has a capacity of over 300 million gallons per day (mgd).

Elevations on the site range from approximately 400 to 460 feet; the site is relatively flat. Low elevations within the property correspond to the location of two streams along the south and east sides of the site and a stream in the northwest quadrant of the site. The two streams to the east are tributaries to the North Branch of Rock Creek. Wetland areas associated with both tributaries have been identified within the site.


Photo 2

The northwest quadrant of the site slopes gently to the northwest and surface water from this area drains directly to Rock Creek. This area also contains significant wetland areas. Photo 2 is a view of Rock Creek near the subject property.

Soils on the site are classified primarily as Chester and Glenelg series soils[9]. Both consist of moderately deep, well-drained soils normally well suited to on-site sewage disposal with expected percolation rates ranging from 0.63 to 2.0 inches per hour. However, due to topographic and geologic conditions, the conveyance of groundwater from the site to adjacent surface waters is restricted which contributes to significant seasonal water table fluctuations. As a result, this site is considered to be poorly drained. Effluent from on-site septic systems will contribute to this problem and create the potential for groundwater mounding which could lead to failures of the septic systems. From previous on-site percolation testing, it is known that a majority of the property has groundwater levels of 7.5 feet or less below the surface. Due to the presence of high groundwater, a portion of the site may be considered unsuitable for the installation of septic systems. It should be noted that while the Chester and Glenelg soils are normally suitable for on-site sewage disposal, the presence of a high groundwater table on this site may partially negate the favorable characteristics of these soils for on-site sewage disposal.

Another factor to be considered is the amount of disturbed area required to develop this site. Since the installation of septic systems generally requires larger lot sizes, development of the site in accordance with applicable zoning guidelines will require disturbance of virtually the entire property. In addition, the area above the drain fields must remain cleared as well. Conversely, if public sewerage is provided, the development of the site would require less clearing and disturbance to the property, including the natural buffer along the east side of the property adjacent to the North Branch Stream Valley Park.

3.2 Useful Life and Long Range Planning Considerations

As noted in Section 2.1.2, communities with failing septic systems (due to clogged drainage fields or other operational problems) require an extension of the public sewer system to serve the area, or remediation/replacement of the on-site septic system; both options are costly. The Maryland Department of the Environment (MDE) cites one case

where corrective action (retroactive connection to the public sewer) cost $18,000 or more per household[4]. Obviously, connection to the public sewer, where feasible at the time of development, is a more efficient and cost-effective option with respect to the long term.

3.3 Water Quality

The eastern portion of the site drains to the North Branch of Rock Creek, which is designated as a Class III stream[10]. Class III streams are natural trout waters. The western portion of the site (and the North Branch tributary) drain to Rock Creek, which is classified as a Class IV stream[10]. Class IV streams are recreational trout streams. Rock Creek in turn is a tributary to the Potomac River.

According to MDE and the Maryland Office of Planning, it has been reported that septic systems discharge more nitrogen pollution per home on average than homes that are connected to wastewater treatment plants (WWTPs) in Maryland. To put this in perspective, MDE reports that WWTPs without biological nutrient removal (BNR) contribute about 4.5 pounds of nitrogen per person per year. WWTPs with BNR (treating 96% of the State's total WWTP flow) contribute approximately 2.0 pounds of nitrogen per person per year. Septic systems without denitrification contribute an average of 9 pounds of nitrogen per person per year. Nutrient removing septic systems contribute 4.5 pounds of nitrogen per person per year[4].

The Chesapeake Bay Program has identified nitrogen removal from septic systems as an important component of the 40% Chesapeake Bay Nutrient Reduction Goal. Nitrogen removal from septic systems has also been identified as an important part of local government strategies to address water quality impairments in local watersheds. In addition, according to MDE, development of septic systems creates an equity problem: generally those on central public sewer systems pay for ongoing nutrient removal while those on traditional septic systems do not[4]. Public funds have been used to help pay the capital costs of upgrading WWTPs to BNR.

4.0 SUMMARY

At least a quarter of the homes in the United States are served by individual septic systems or other types of on-site wastewater disposal systems. Individual on-site systems are typically constructed in areas where the connection to a centralized sewer system is not affordable to the public or as a temporary measure that is utilized until public sewer service is provided in the future. As the name implies, individual on-site septic systems are maintained by the homeowners. When such systems are installed in poor soil conditions (excessive or limited soil permeability), unfavorable hydrologic conditions (high groundwater table, etc.) or poor geologic conditions (shallow bedrock or other restrictive layers) or when such systems are not properly maintained by the homeowners, the systems can malfunction or fail. System failures can have significant consequences ranging from contamination of groundwater and surface water to on-site ponding and exposure of the public to life-threatening pathogens. At best, when on-site septic systems are constructed under favorable hydrologic and geologic conditions, and maintained properly by the homeowner, the treatment efficiency of a septic tank – soil absorption system is in the range of 50% in comparison to a centralized wastewater treatment plant where efficiencies typically range from 90% and higher. Many chemicals pass through septic systems without being reduced in concentration. Toxic organic and inorganic chemicals, bacteria and viruses can be released to the groundwater system.

On-site sewage disposal systems in Montgomery County are subject to the standards established under Executive Regulation No. 28-93AM. The regulations state that the County Health officer "must require a connection to a community water or sewage system for new construction when a community water system or sewage system is economically and legally available to the building to be served". The regulations are further clarified in that Health Department authorization is required before the Washington Suburban Sanitary Commission (WSSC) can accept requests for public water and sewer services for areas designed in Water and Sewer Categories 4,5, and 6. The Casey Property at Bowie Mill is presently located within Water Category 3 (approved water service area) and Sewer Category 6 (no planned service). However,

the property surrounds the Macgruder High School which is presently served by public sewer. Potential public sewer connections are available at two locations, namely: an eight-inch sewer at the intersection of Muncaster Mill Road and Bowie Mill Road; and an eight-inch sewer along Grist Mill Drive approximately 1,600 feet to the south and east of the site.

Based on engineering design considerations, the Casey Property at Bowie Mill Estates has been determined to be adequate for approximately 149 lots using on-site sewage disposal systems. However, due to a high groundwater table and geologic and topographic conditions at the site, the potential exists for groundwater "mounding" problems which may lead to system failures.

Based on the location of the site relative to existing public sewer, the marginal hydrologic and geologic conditions for on-site sewage disposal systems, the potential for degredation of groundwater and nearby surface waters, and the uncertainty associated with maintenance of on-site systems, it is highly recommended that Oxbridge Development request the County and WSSC consider taking the necessary steps to change the Casey Property at Bowie Mill from Sewer Category 6 to Sewer Category 3 to implement public sewer service for the proposed subdivision.

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6. Mancl, K., Slater, B., Ohio State University Agricultural Engineering Department, "*Why Do Septic Systems Malfunction?*", 2000
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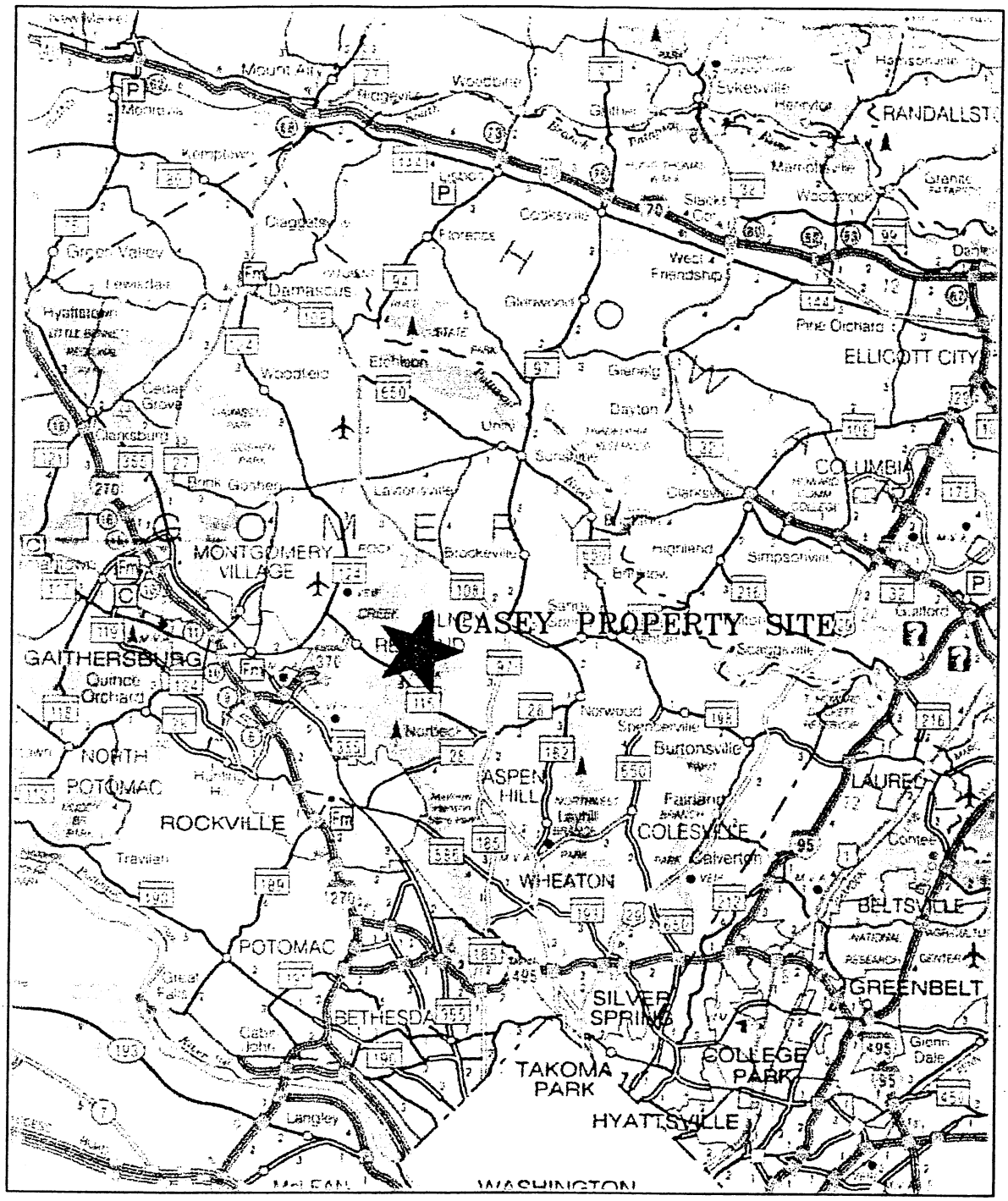
APPENDIX A FIGURES

Dewberry & Davis LLC
A Dewberry Company



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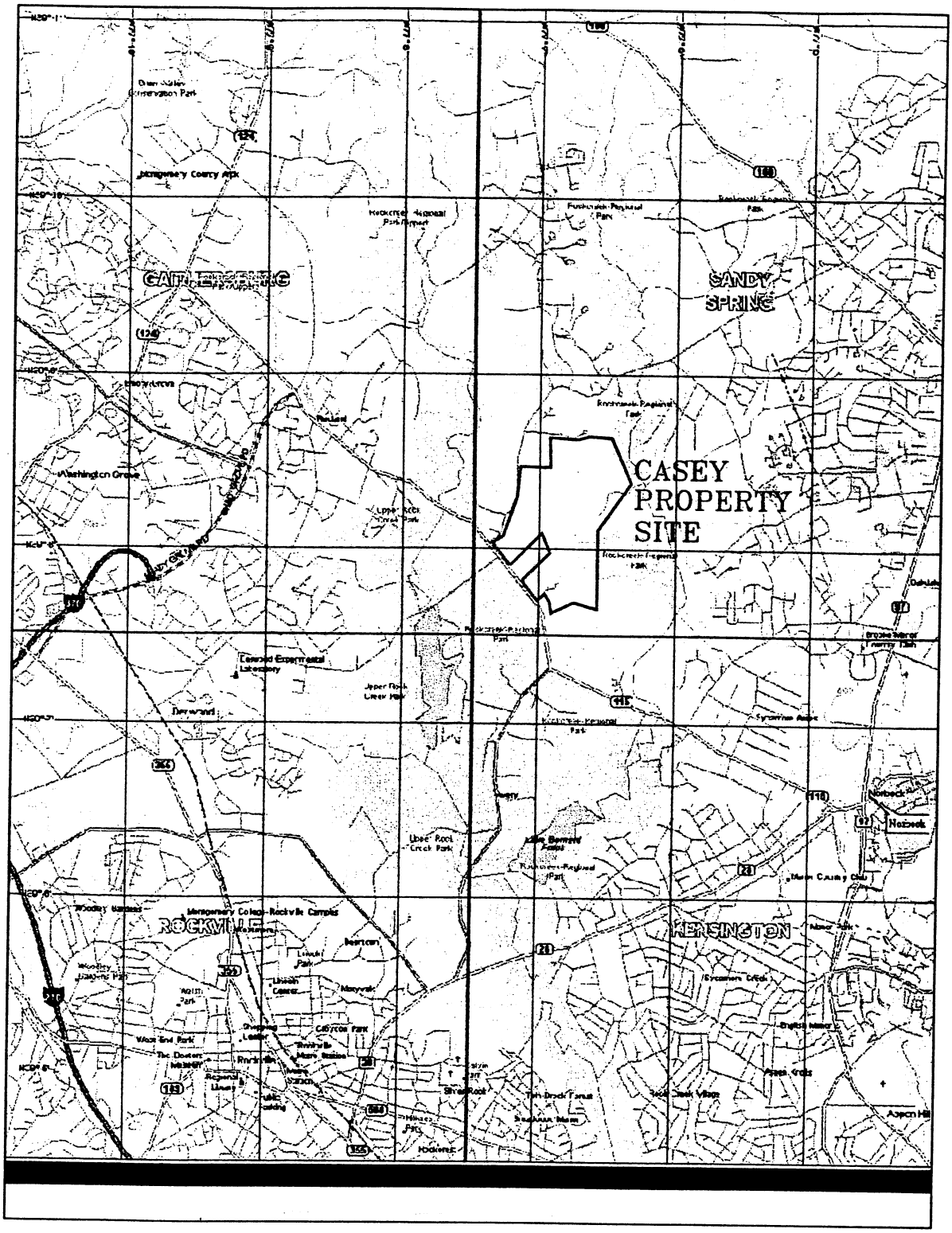
Date: September 2001
Scale: None

VICINITY MAP

CASEY PROPERTY @ BOWIE MILL

8TH ELECTION DISTRICT MONTGOMERY COUNTY, MARYLAND



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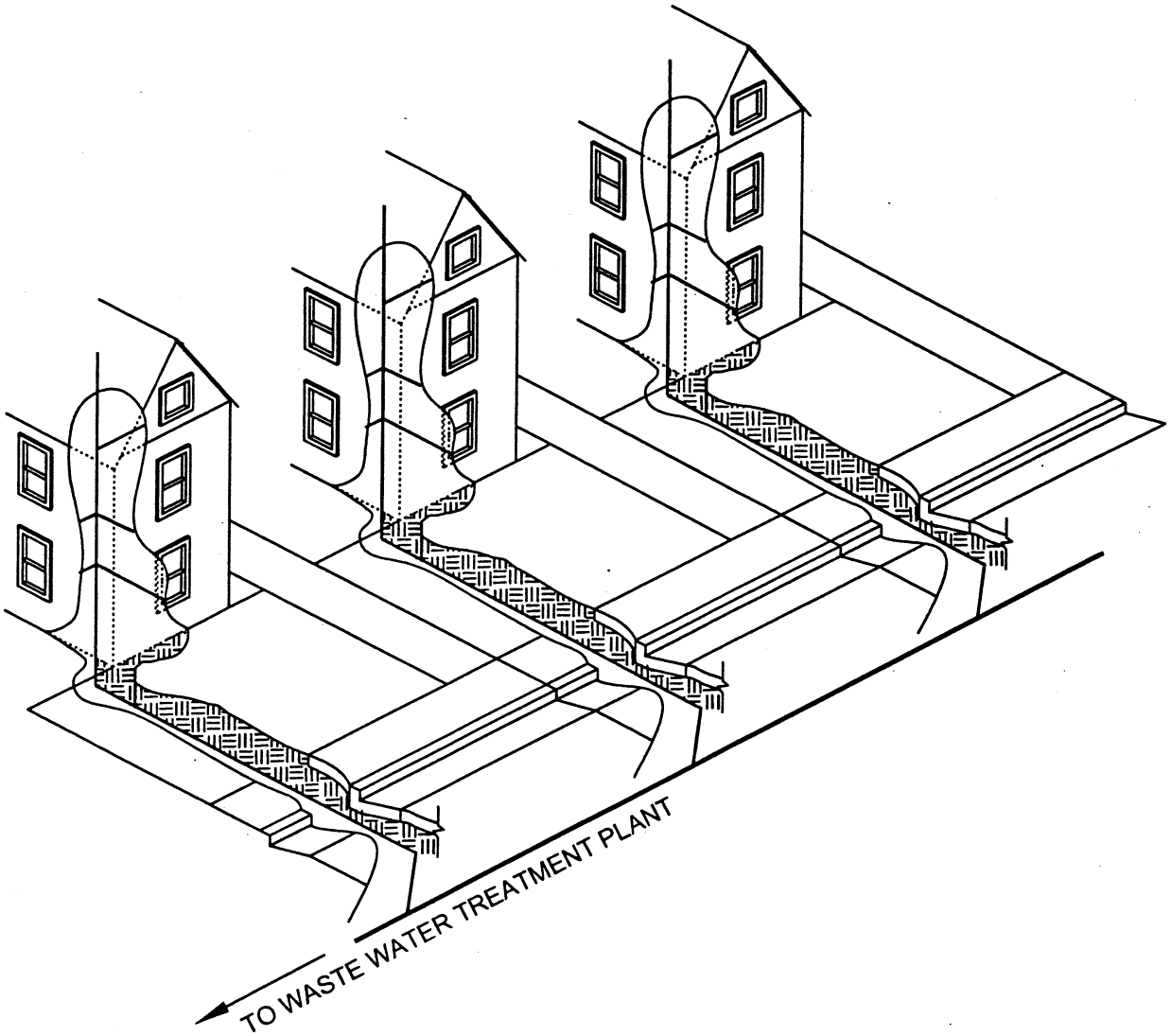
Date: September 2001
Scale: None

Location Map

CASEY PROPERTY @ BOWIE MILL

8TH ELECTION DISTRICT

MONTGOMERY COUNTY, MARYLAND



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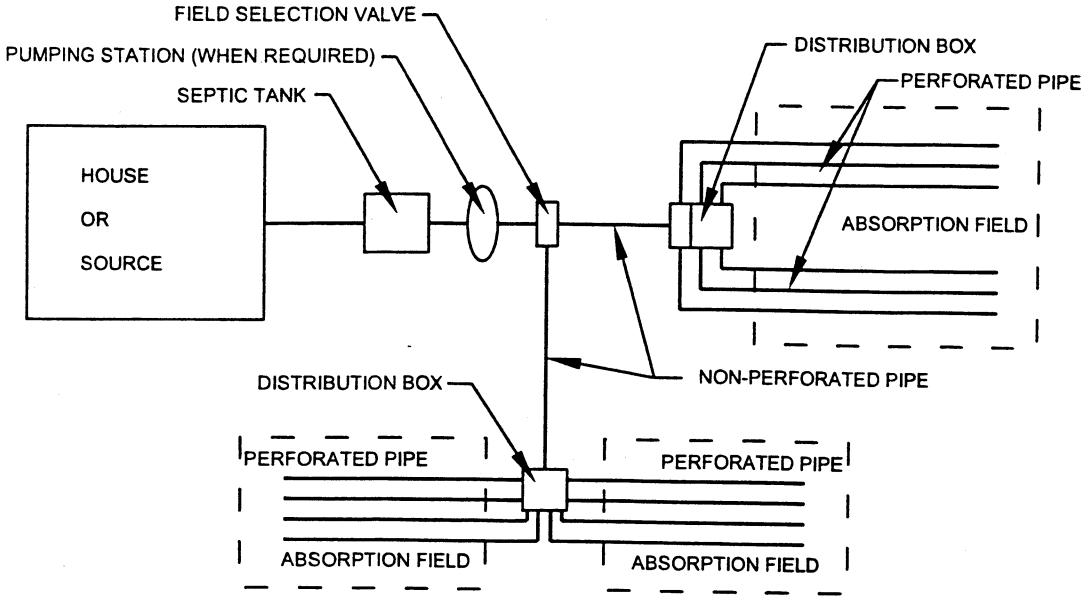
Date: September 2001
Scale: None

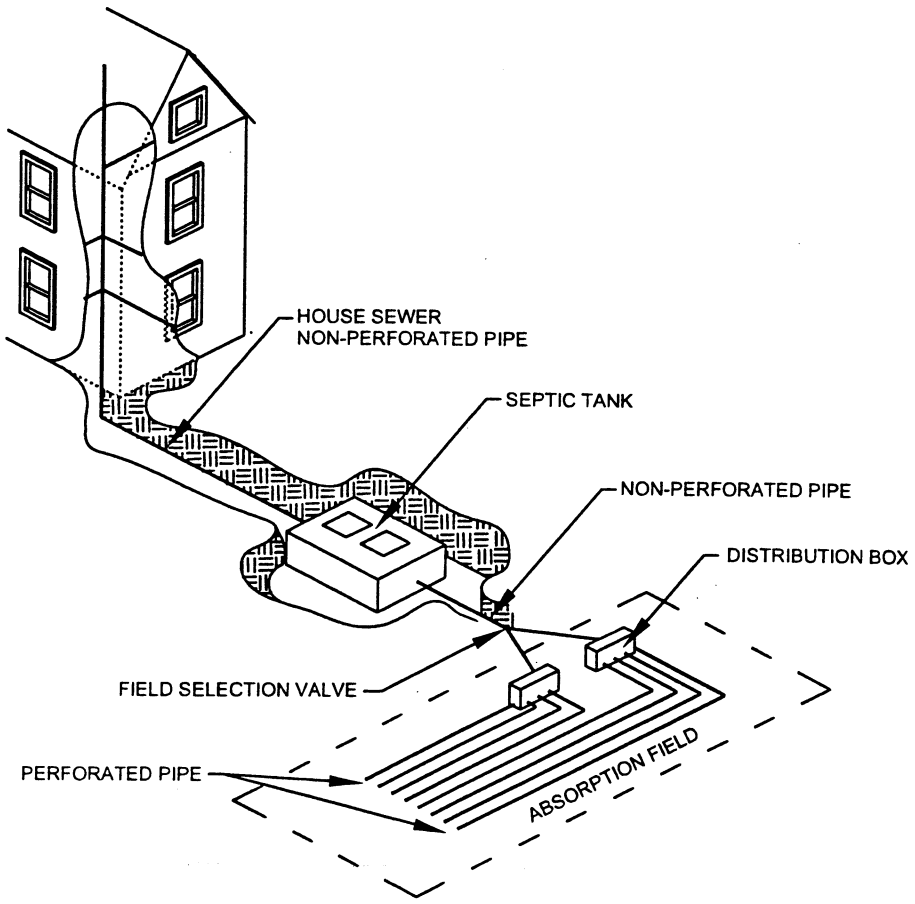
TYPICAL DETAIL MUNICIPAL SYSTEM

CASEY PROPERTY @ BOWIE MILL

6TH ELECTION DISTRICT

MONTGOMERY COUNTY, MARYLAND





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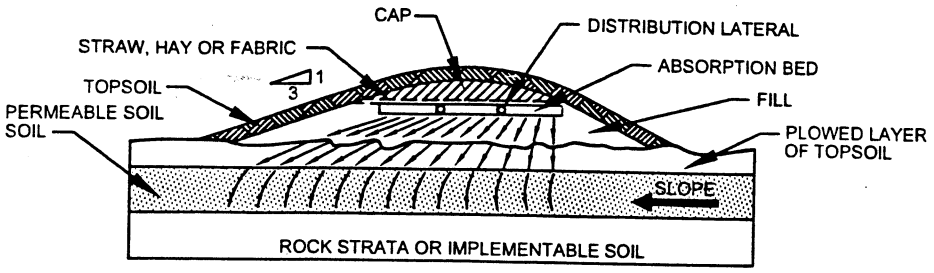
Date: September 2001
Scale: None

Typical Dual-field Septic Tank Soil Absorption Detail

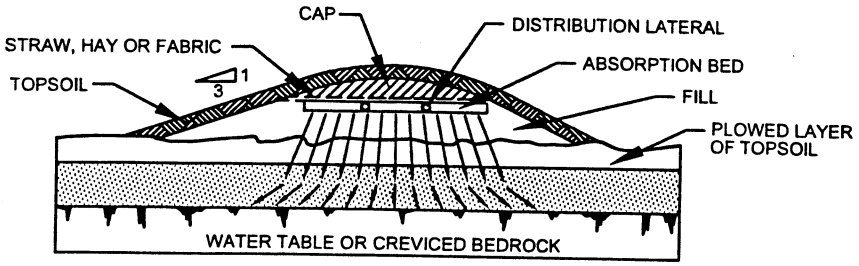
CASEY PROPERTY @ BOWIE MILL

6TH ELECTION DISTRICT

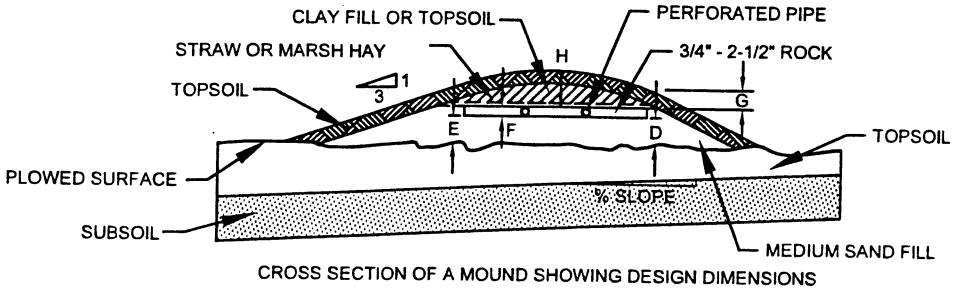
MONTGOMERY COUNTY, MARYLAND



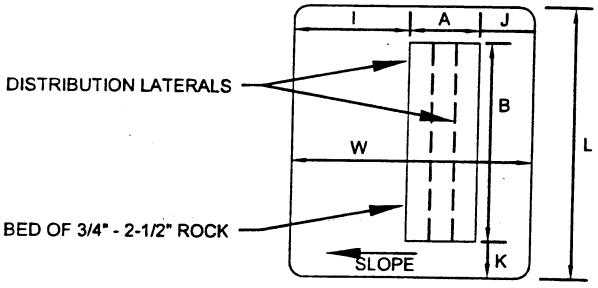
CROSS SECTION OF A MOUND SYSTEM OFOR SLOWLY PERMEABLE SOIL ON A SLOPING SITE



CROSS SECTION OF A MOUND SYSTEM FOR PERMEABLE SOIL
WITH HIGH GROUNDWATER OR SHALLOW CREVICED BEDROCK



CROSS SECTION OF A MOUND SHOWING DESIGN DIMENSIONS



PLAN VIEW OF A MOUND SHOWING DESIGN DIMENSIONS

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Date: September 2001
Scale: None

TYPICAL MOUND ABSORPTION BED DETAIL

CASEY PROPERTY @ BOWIE MILL

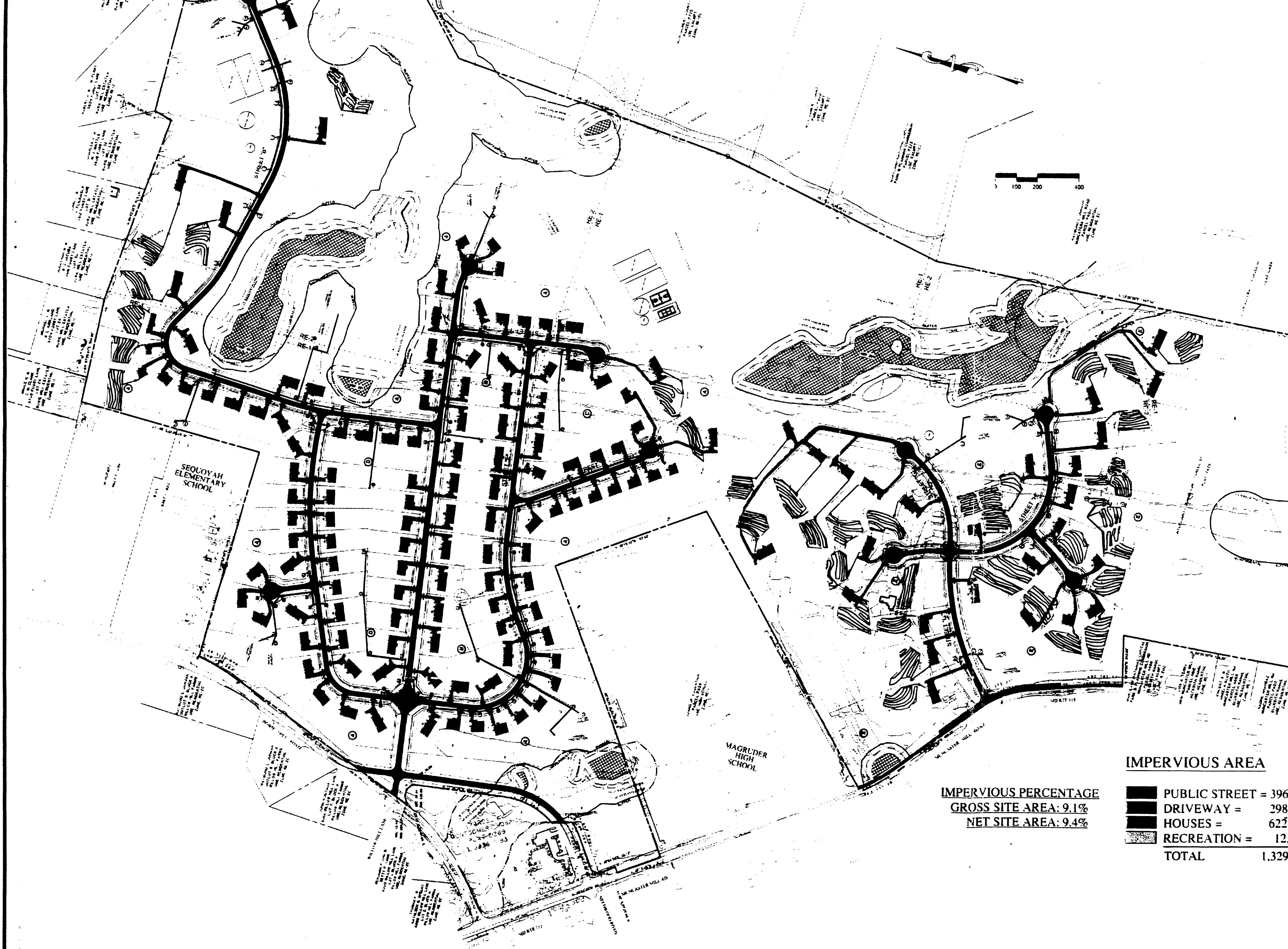
8TH ELECTION DISTRICT

MONTGOMERY COUNTY, MARYLAND

Prepared For:

Oxbridge Development
Re: Casey Property @ Bowie Mill Estates

Dewberry & Davis LLC
A Dewberry Company


SEQUOYAH ELEMENTARY SCHOOL
MAGRUDER HIGH SCHOOL
STREET "B"
RE-2
RE-1
0 100 200 400
IMPERVIOUS PERCENTAGE
GROSS SITE AREA: 9.1%
NET SITE AREA: 9.4%
IMPERVIOUS AREA
PUBLIC STREET = 396
DRIVEWAY = 298
HOUSES = 622
RECREATION = 12
TOTAL 1,329

Attachment 4
Documents for the Freeman Property
Submitted by Linowes and Blocher for Carl M. Freeman Retail

LINOWES AND BLOCHER LLP

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October 24, 2002

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Via Hand Delivery

Derick Berlage, Chairman and
Members of the Planning Board
Maryland-National Capital Park
and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910

Re: Upper Rock Creek Master Plan - Freeman Property

Dear Mr. Berlage and Members of the Planning Board:

In response to Mr. Robinson's request during the discussion on the Freeman Property at the public hearing on October 3, 2002, we have prepared two charts comparing the development standards of the three zones, RE-1, RE-2C, and RNC. The first chart compares the development standards under the standard method of development. The second chart compares the development standards under the cluster or optional method of development. A copy of the charts is attached hereto as Exhibit "A". Based on our analysis of the three zones, we strongly believe that the best land use recommendation for the Freeman Property is to maintain the current RE-1 zone and apply the cluster development method to the Property.

The Freeman Property consists of approximately 339 acres of land located in the headwaters of North Branch and has frontage on Olney-Laytonsville Road (the "Property"). The entire Property is zoned RE-1 and significant natural resources, including forest, wetlands, floodplains, and other sensitive headwater areas, have been identified on the Property as worthy of protection. The Property is located north of Norbeck Grove, which is an area served by community sewer. The main objectives of the Upper Rock Creek Master Plan (the "Master Plan") for this Property are to protect the natural resources and maintain the overall low density character of the Master Plan area. Accordingly, the Freeman Group agrees with the position of your staff that the cluster method of development utilizing public water and sewer is the best way to achieve the goals set forth in the draft Master Plan.

Thus, after extensive review of the various large lot cluster zone alternatives, we strongly believe application of the cluster development method under the RE-1 zone would best achieve the public goals of preserving sensitive environmental areas and open space, minimizing impervious area, and protecting the character of existing neighborhoods while maintaining appropriate limitations on overall densities as set forth in an approved Master Plan. These goals would be achieved through the use of existing public infrastructure, dedication of natural open space, flexibility in lot sizes, and site plan approval under the cluster development method consistent with staff's recommendation. Dedication of open space also will provide the best environmental protection because the open space would be under government control and ownership.

The RE-1 cluster development method requires a minimum of 50 acres for development, a minimum lot area of 15,000 square feet, and a maximum density of one unit per acre. The cluster development method also requires that common open space and preservation of trees are included in the preliminary and site plans. Cluster development under the RE-1 zone requires both subdivision and site plan review, which gives the Planning Board and surrounding community more public input and control of the development process. Under these reviews, a proposed development must satisfy all the adequate public facilities and site plan tests. However, based upon the unique characteristics of the subject property and the fact that the community sewer serving Norbeck Grove, as well as the sewer trunk line serving Norbeck Grove, has the capacity to handle an additional 200 plus homes if developed on the Property, the Freeman Group believes an appropriate density for the Property lies between 175 and 200 lots connected to public sewer.

Regarding the question as to the number of septic and well lots the Property would support, the following should be noted: (i) the Property was previously approved for service by the public water system, thus, any development on the Property will not have to rely on wells for water; and (ii) while the Freeman Group had initiated some percolation testing on the Property, based on the fact that development under the septic scenario would require substantial encroachment into those areas that the Planning Board staff, the Freeman Group and others would prefer not to see disturbed, a comprehensive septic development scenario that maximized the lot layout (and as a by-product, would maximize the disturbance to Property) was not fully completed. However, in order to respond to the septic yield inquiry, the Freeman Group is willing to expend the additional time and financial resources necessary to develop a study and appropriate reports that will indicate maximum use of the entire Property under a septic development scenario which we will in turn submit into the record.

Notwithstanding the specific guidance on minimum lot sizes and maximum density provided under the cluster development method in the RE-1 zone, the Freeman Group believes that working with your staff and the community, appropriate guidelines and restrictions on the development and density of the Property can be set forth in the Master Plan and subsequent to its adoption, covenants of those restrictions can be recorded in the Land Records of Montgomery County. Accordingly, with appropriate language setting forth the necessary criteria unique to this Property placed in the Master Plan, there is no necessity to rezone the Property from the current zone to the RE-2C zone in order to achieve the draft Master Plan's goals and objectives.

If the Property is to be rezoned, we recommend the appropriate zone for the entire Property would be the Rural Neighborhood Cluster (RNC) zone. The RNC zone is a newer zone and respectfully a much better tool than the RE-2C zone to accomplish the public goals discussed above. The optional method of development for the RNC zone requires a minimum of 10 acres for development, and can set a minimum net lot area and a maximum density per acre requiring conformance in the adopted Master Plan. It also requires significant rural open space (65 to 85 percent, depending on the guidelines of the Master Plan) in addition to common open space, connection to public sewer, and a diversity of lot sizes for developments of 70 acres or more. The lot sizes and maximum density would be determined by the unique physical characteristics of the Property and compatibility with existing density. Pursuant to § 59-C-9.575 of the Zoning Ordinance, site plan approval is required under the optional development method for the RNC zone. Consequently, the Planning Board would have significantly more control and the community more input through the public process in the development of the Property under the RNC optional method.

If you have any further questions, please feel free to contact me.

Sincerely yours,

LINOWES AND BLOCHER LLP

Stephen Z. Kaufman

Enclosure

cc: Mr. Tom Gallagher
Mr. Tom Halverstadt

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Below are two charts comparing the development standards of the RE-1, RE-2C, and RNC zones. The first chart compares the development standards under the standard method of development. The second chart compares the development standards under the cluster or optional method of development.

Chart 1: Standard Method of Development

Development Standards	RE-2C[1]	RE-1[1]	RNC
Min. net lot area for one-family detached dwelling	87,120 square feet	40,000 square feet	25,000 square feet
Max. density of development	1 unit per 2 acres	1 unit per acre	1 unit per 5 acres
Min. lot width at front bldg line for one-family detached dwelling[2]	150 feet	125 feet	100 feet
Min. lot width at existing or proposed street line	25 feet	25 feet	25 feet
Min. setback from street for *main building* In case of a corner lot, if adjoining lot on one of the streets either does not front on that street or is in a nonresidential zone, the setback from street must be	50 feet 20 feet	50 feet 20 feet	40 feet N/A
Setback from adjoining lot for *main building* - one side - sum of both sides - rear - abutting a public street	 17 feet 35 feet 35 feet N/A	 17 feet 35 feet 35 feet N/A	- 2 side yards required - 15 feet N/A 35 feet 50 feet[3]
Min. setback from street for *accessory building* from - street line - rear lot line - side lot line of an interior lot of a lot abutting a public st.	 80 feet 10 feet 15 feet	 80 feet 10 feet 15 feet	 80 feet 10 feet 15 feet 50 feet

Setback from streets for <u>corner lots</u> for *accessory building* - an accessory bldg or structure must not be closer to a street line than a main bldg - if adjoining lot on a side street is in a residential zone and has frontage on the side street, the setback from - side street line - rear lot line - if there is no residentially zoned lot on the side street in the same block and on the same side of the street, the setback from side street line	 50 feet 12 feet 20 feet	 50 feet 12 feet 20 feet	N/A
Max. bldg height	50 feet	50 feet	35 feet
Max. net lot coverage	25%	15%	10%
Min. Rural Open Space	N/A	N/A	60%, consistent with guidelines of the master plan
Public Water and Sewer	N/A	N/A	No public service, unless recommended by the master plan

[1] The following lots shall have the area and dimensional requirements of the zone applicable to them prior to their classification in the RE-2, RE-2C, and RE-1 zones: (1) A record lot approved for recordation by the Planning Board prior to the approval date of the most recent sectional map amendment that included the lot; (2) A lot created by deed on or before the approval date of the most recent sectional map amendment that included the lot; and (3) In the RE-2C zone, a lot created as a one-family residence by a child of the property owner or the spouse of a child or by the parents of the property owner, provided the property owner can establish that he/she had title on or before March 16, 1982. This provision permits the creation of only one lot for each child, whether created for the child or the spouse of the child, and only one lot for the parents, whether created for one or both parents. The overall density of the property shall not exceed 1.1 dwelling units per acre in any subdivision recorded.

[2] For the RE-2C and RE-1 zones, the minimum lot width at the building line and yard requirements for a main building or an accessory building or structure may be reduced when the lot is located in an historic district in accordance with the provisions of § 59-A-6.23.

Chart 2: Cluster[4] or Optional Method of Development

All requirements of the standard method of development in Chart 1 apply except as modified below.

Development Standards	RE-2C[5]	RE-1	RNC[7]
Min. area for development	50 acres[6]	50 acres[6]	10 acres[8]
Max. density of development	0.4 unit per acre	1 unit per acre	1 unit per acre, conform with guidelines of the master plan
Min. net lot area	25,000 square feet	15,000 square feet	4,000 square feet
Min. lot width at front bldg line	standard dev'pmt requirement of 150' does not apply	standard dev'pmt requirement of 125' does not apply	100 feet
Min. lot width at existing or proposed street line	25 feet	25 feet	25 feet
Max. net lot coverage	25%	15%	35%
Setbacks			
Setback from street	40 feet	40 feet	15 feet
No dwelling unit can be nearer to any lot line than	15 feet	15 feet	side yard, if provided – 8 feet; for side or rear yard abutting a lot not developed under optional method, setback must be at least equal to that required by abutting lot, provided that no rear yard less than 30 feet
except that a side yard adjoining a boundary line of the subdivision must not be less than that required in the adjoining zone	applicable	applicable	
minimum rear yard setback from any boundary line of subdivision	50 feet	50 feet	
except that the Planning Board may permit a lesser setback if the adjoining land is subdivided by the cluster method or is not classified in one-family residential zone	applicable	applicable	setback for accessory structures – 60 feet from street; 5 feet for side and rear yard

	RE-2C	RE-1	RNC
Sewer and Water	Connection to community water and sewer system is **required** except where land that is not served by community sewer in the RE-2C zone may be subdivided under the cluster development method if it meets all the following conditions: (a) an approved and adopted master plan or sector plan specifically recommends cluster development with community water but not community sewer; (b) the resulting development will be connected to community water; (c) the resulting development meets all of the individual sewerage systems outline in the most recent County Comprehensive Water Supply and Sewerage Systems Plan and Executive Regulation No. 5-79 on individual water supply and sewage disposal systems.		Connection to community water and sewer system is **required**, unless it can be demonstrated that at the time of subdivision that a limited number of lots on a private well and septic facility within the cluster will provide a more beneficial subdivision design because of environmental or compatibility reasons.
Common Open Space	The preliminary or site plan must include a description of the procedures and methods to be followed for assuring the common use and adequate maintenance of common open space included in the plan.		Required for all development of 10 units or more; such space, if provided, must not applied towards the Rural Open Space requirement.
Rural Open Space	N/A		65% - 85%, consistent with guidelines of master plan[9]
Preservation of Trees	The preliminary plan and site plan must show the location and extent of all trees as well as methods for preservation of those trees selected to remain.		
Dedicated Land	Land dedicated to public use for school and park sites may be included in the calculation of the density of development; provided, that development of the remaining land can be accomplished in		All land[10] in Rural Open Space must be preserved either by dedication to public use or by

[4] The Planning Board may permit the combining of 2 or more cluster developments in the same zone or in different zones. See § 59-C-1.526 of the Zoning Ordinance.

[5] In the RE-2C zone, lots may front on a private cul-de-sac if the Planning Board finds, as part of the cluster subdivision plan approval, that the private cul-de-sac: (1) provides safe and adequate access; (2) has sufficient width to accommodate the dwelling units proposed; (3) will better protect significant environmental features on and off site than would a public road; and (4) has proper drainage. Each private cul-de-sac must comply with the requirements of § 59-C-7.235 of the Zoning Ordinance and § 50-25(h) of the subdivision regulations pertaining to private roads. A subdivision with lots fronting on a private cul-de-sac may also be required to comply with the site plan review provisions of Division 59-D-3. See § 59-C-1.527 of the Zoning Ordinance.

[6] This minimum area requirement may be waived by the Planning Board upon a finding that the cluster development is more desirable for environmental reasons.

[7] Pursuant to § 59-C-9.575 of the Zoning Ordinance, site plan review is required under the optional method. Under § 59-C-9.573(e) of the Zoning Ordinance, lots may front a private street if the Planning Board finds, as part of the cluster subdivision plan approval, that the private street: (1) provides safe and adequate access; (2) has sufficient width to accommodate the dwelling units proposed; (3) will better advance the goal of preserving rural open space and the rural character than would a public road; and (4) has proper drainage. Each private road must comply with the requirements of § 59-C-7.234 of the Zoning Ordinance and § 50-25(h) of the subdivision regulations pertaining to private roads.

[8] The Planning Board may waive this requirement where the property abuts an existing property developed under the optional method of development, and the resulting development is a logical extension of the existing development. See § 59-C-9.573(a) of the Zoning Ordinance.

[9] The Planning Board may approve a minor variation in the recommendation of the master plan if the Board finds that the variation would retain both the quality and character of the open space as set forth in the guidelines of the master plan. The rural open space should be a contiguous area and be located and designed to: (1) protect rural features and other sensitive areas identified in the applicable master plan; and (2) maximize common boundaries with rural open space on adjacent tracts where recommended in the master plan, or as otherwise required by the Planning Board. See § 59-C-9.573(g)(1),(2) of the Zoning Ordinance.

[10] A developed lot intended to provide any portion of the Rural Open Space requirement must be a minimum of 10 acres, and a substantial majority of the lot must be encumbered by the instrument regulating the rural open space. See § 59-C-9.573(g)(4) of the Zoning Ordinance.

[11] The easement or covenant must restrict uses in the Rural Open Space to those set forth in the zone, establish procedures for the management of natural or agricultural features as set forth in the approved site plan and prohibit any further development or subdivision within the Rural Open Space. See § 59-C-9.573(g)(4) of the Zoning Ordinance.