VI 295-06 Vienna Village
SUB

MSA. S. 1829-6130

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

Margaret G. McHale
Chair

Ren Serey
Executive Director

STATE OF MARYLAND
CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100, Annapolis, Maryland 21401
(410) 260-3460 Fax: (410) 974-5338
www.dnr.state.md.us/criticalarea/

July 14, 2010

The Honorable Russ Brinsfield
Town of Vienna
P. O. Box 86
Vienna, Maryland 21869

RE: Town of Vienna Greenbelt and Wetland Restoration
VI 229-10

Dear Mayor Brinsfield:

The purpose of this letter is to officially notify you of the Critical Area Commission's action on the Town of Vienna Greenbelt and Wetland Restoration plan. On July 7, 2010, the Commission approved the design plans as submitted. The motion for approval included the following provision, "This motion is not intended to commit the Commission to a reduction in Critical Area buffer requirements for future growth allocations."

It is the Commission's understanding that the portion of the Larmore property retained by the developer may be the subject of a request for growth allocation in the future. At such time as a growth allocation request is submitted, the acquisition of the portion of the property that is now being conserved as a greenbelt and the related Town of Vienna Greenbelt and Wetland Restoration effort can be considered a part of the overall project. This consideration would be part of the Commission's evaluation of the growth allocation request as it relates to the standards and factors to be considered in § 8-1808.1 of the Natural Resources Article of the Annotated Code of Maryland.

In 2008, the Critical Area Program was comprehensively amended, and there have been significant changes to the Critical Area law and regulations. These changes affect many of the provisions in the law and Criteria, including those that are applicable to growth allocation, the Buffer, lot coverage, and nontidal wetlands. Changes to the law also gave the Commission regulatory authority, so it is likely that new regulations will continue to be drafted, reviewed, revised, and adopted through the Administrative and Executive Legislative Review (AELR) Process as necessary to improve the clarity and effectiveness of the Critical Area Program.

As you know, new development projects and growth allocation requests must be reviewed for consistency with the law and regulations in effect at the time the project is submitted. At such

time as a conceptual project is proposed, please feel free to request assistance from Commission staff in understanding and applying the new regulations. Close coordination will facilitate an efficient and effective review process.

As always, it was a pleasure to work with you and Kevin Smith on this important conservation and restoration effort. Projects like these that involve significant land areas and the protection of Natural Heritage Areas are significant to not just the Town, but to the State as a whole. If you have any questions, please do not hesitate to contact me at (410) 260-3480.

Sincerely,

Mary R. Owens
Education and Conservation Coordinator

cc: Kevin Smith, DNR
Keith Lackie, MDP
Pete Johnston, Circuit Rider Consultant

Critical Area Commission

STAFF REPORT
July 7, 2010

APPLICANT:	Town of Vienna (Dorchester County)
PROPOSAL:	Town of Vienna Greenbelt and Wetland Restoration
JURISDICTION:	Town of Vienna
COMMISSION ACTION:	Vote
STAFF RECOMMENDATION:	Approval
STAFF:	Mary Owens
APPLICABLE LAW/ REGULATIONS:	COMAR 27.02.05 State Agency Actions Resulting in Development on State-Owned Lands

DISCUSSION:
This is a greenbelt and wetland restoration proposal by the Town of Vienna. In April 2005 and July 2006, a growth allocation proposal for the Vienna Village Project was presented to the Program Subcommittee for discussion and comment. That project has not gone forward and the Town, with assistance from the Department of Natural Resources, proposes to restore and enhance the wildlife and water quality functions of the site and surrounding areas. Development is not proposed at this time.

Background
The original development project involved a planned 350-400 unit residential development to be designed in a neo-traditional style, similar in character to that of the existing town and requiring the use of growth allocation. The proposal involved two farms—the Phillips Farm and the Legg Farm, which are located on both sides of Elliot Island Road, and total about 373.3 acres. The properties include extensive frontage on the Nanticoke River and a tidal wetland complex, known locally as Trunk Creek. The properties are located generally south and west of the Town of Vienna in Dorchester County.

The development project was part of a comprehensive planning effort by the Town that also involved permanent conservation of portions of these properties to facilitate the creation of a "conservation greenbelt" that would protect sensitive environmental areas and limit further expansion of the Town to the south. The properties are and have historically been farmed, producing primarily corn and soybeans. The properties include extensive areas of waterfront and marshfront on the Nanticoke River, and are divided by a tidal tributary with connecting tributary streams and adjacent tidal wetlands. Based on information from the Maryland Department of Natural Resources (DNR), the Natural Heritage Area (NHA) of Mill Creek is located next to and

overlaps portions of these properties. This wetland is also designated as a Wetland of Special State Concern (WSSC), and is documented as supporting several rare and endangered plant species. This NHA is one of only two documented sites in the State where Marsh Wild Senna has been identified, and is one of only two documented sites in Dorchester County, and one of six documented sites in the State where the Spongy Lophotocarpus is found. The DNR has also indicated the adjacent open waters are known historic waterfowl concentration areas, and the site may support the Delmarva Fox Squirrel (DFS) and Forest Interior Dwelling (FID) Bird habitat.

In late 2007, the original developer had decided not to pursue the Vienna Village Project. In light of the conservation value of the properties and the Town of Vienna's desire to see portions of the properties developed in a sustainable way, the Department of Natural Resources acquired a 96-acre parcel to the west of Trunk Creek and a 122-acre parcel south and west of Trunk Creek. The goal of the acquisition was to enhance protection of the Mill Creek NHA through various restoration efforts and to restrict development to a maximum of 135 units on approximately 100 acres, which were retained by the original owner. The Program Subcommittee was briefed on the proposed acquisition in December 2007. At the time, it was discussed that reforestation and other restoration activities would be proposed by DNR and the Town as a means of enhancing and optimizing the long-term protection of the NHA. It was acknowledged that minimizing the area proposed for development, conserving significant acreage in the watershed, converting agricultural lands to forest, and establishing the 100-foot Buffer on all tidal waters, tidal wetlands, and tributary streams would significantly improve the likelihood of maintaining current hydrologic conditions and potentially improving water quality. The Program Subcommittee was generally supportive of the project.

Restoration Project

Following acquisition of the property in late spring of 2008, the Town and DNR staff began working on plans for restoration of the property. It was determined early in the process that significant portions of the property would remain in agricultural use, but that the areas determined to have the most significant ecological benefits would be targeted for restoration efforts. The restoration would consist of several elements including the planting of forested buffers, the planting of warm-season and cool-season grassed buffers, the planting of forested "connections" to improve wildlife habitat, and the restoration of nontidal wetlands. The plans as proposed include 69 acres of enhancement and restoration and 149 acres of agriculture.

At this time the restoration plans for the property are basically complete. The State has transferred the properties to the Town of Vienna, and the Town is requesting Commission approval of the restoration plan. The restoration plan has been developed by a consultant, Dan Kramer of Sweetbay Watershed Conservation, under the guidance of DNR staff. The plan is proposed to be implemented by DNR staff as well. The first element of the restoration involves planting 21 acres of forest in the Critical Area Buffer adjacent to Trunk Creek and the Mill Creek Natural Heritage Area. These areas are currently tilled and the nominal 25-foot agricultural Buffer will be widened to a minimum of 100-feet adjacent to Trunk Creek and approximately 300-feet adjacent to the NHA. In addition to the forest planting in the Buffer, additional water quality enhancements are proposed along the agricultural draingage ditches on the site. Four of the agricultural drainage ditches on the property were determined to be tributary streams.

Historically the land was tilled to within eight feet of the ditches. Agricultural use is proposed to continue at this time, but the restoration will establish 50 feet of cool season grass buffers on both sides of the streams. In addition, grass buffers will be planted on both sides of four other agricultural ditches that were not classified as streams. This will result in an additional 22 acres of new grass buffers.

In order to improve wildlife habitat on the property, approximately 20 acres of tilled land will be planted with a variety of tree species. Planting of approximately 10 acres of forest in the northwest quadrant of the property will provide an important connection between two large forested tracts, identified as Delmarva Fox Squirrel Habitat. Forest planting of approximately eight acres in the southwest corner of the property will also provide an important corridor for other wildlife as well, connecting the large forested tracts to the new riparian buffer adjacent to the Mill Cove NHA and the Nanticoke River. This area is also one of the areas where nontidal restoration activities will take place.

The fourth component of the restoration involves the creation of four nontidal wetlands to promote improved soil conservation and water quality management on the property and to create additional forested nontidal wetland and emergent intertidal habitat. Three of the nontidal wetland creation sites are located outside the Critical Area. The fourth site is located where the southern tributary stream meets Trunk Creek. All four of the sites are low-lying and are periodically flooded during storm events. They are classified as "prior converted wetlands;" therefore, authorization from the MDE is not required for the disturbance associated with the restoration. Generally, the restoration efforts involve slight manipulation of the landscape to modify the contours to allow water draining from the agricultural areas to be retained in the new wetlands and planting of appropriate wetland species. The land area that will taken out of production and converted to wetlands is generally characterized as having a high water table and heavy soils, which are not conducive to sustainable and efficient agricultural production.

The creation of the wetland within the Critical Area is a significant component of the restoration; however, there will be some disturbance within the 100-foot Buffer. Approximately 40,000 square feet of grading will be necessary to adjust the topography to convey the water into the wetland and provide ponded areas. It is anticipated that the thoughtful design of the four new wetlands will better manage stormwater flows on the site and promote a more natural hydrologic balance on the property. By providing approximately 20 acres of new nontidal wetlands, adverse impacts to the Natural Heritage Area associated with nutrients, herbicides, and sediments from the agricultural use of the property should be dramatically decreased, or possibly eliminated. Approximately 12 acres of the new wetlands are forested nontidal wetlands and the remaining eight acres are emergent wetlands.

Conclusion

If the Commission approves the restoration plan as submitted, it is anticipated that the implementation will begin later this summer. Although the Town is still interested in the future development of the 100 acres retained by the original owner, no development proposal is currently being reviewed. It is likely that any proposal will require growth allocation. It is the Town's desire that this restoration effort and the related conservation acquisition that took place

last year be considered by the Commission as part of the project at such time as the Town may submit a request for growth allocation.

Staff Recommendation

Staff recommends approval of the project as proposed.

Vienna Greenbelt
Resource Enhancement Draft Concept Plan

Imagery: MD 2007/2008

Maryland Department of Natural Resources
Natural Resources Information Services
DNR, November 2008

Resource Enhancement Areas

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Feet

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January 10, 2008

The Honorable Russ Brinsfield
Town of Vienna
P O Box 86
Vienna, Maryland 21869

RE: Town of Vienna – Growth Allocation and Land Acquisition

Dear Mayor Brinsfield:

The purpose of this letter is to follow up on the recent discussion of the Town of Vienna's proposal involving the use of growth allocation and the acquisition of ecologically significant lands adjacent to the Mill Creek Natural Heritage Area (NHA) in Dorchester County. On December 5, 2007, you, Tim Brower, and Glenn Therres from the Department of Natural Resources (DNR) presented information about the proposal and received comments from the members of the Program Subcommittee.

The Town's proposal involves the use of approximately 100 acres of growth allocation to change land currently designated Resource Conservation Area (RCA) to Intensely Developed Area (IDA) in order to develop a maximum of 135 dwelling units. A significant portion of the land proposed to be retained by the developer is within the 100-foot Buffer of Trunk Creek and would be established in natural vegetation as required by the Critical Area regulations. The developer is not proposing to provide a 300-foot setback, but would explore opportunities to increase the Buffer beyond 100-feet where feasible. As you described the situation to the Subcommittee, by allowing the developer the flexibility to more fully develop land close to the existing developed portions of the Town, there is an opportunity to permanently protect a 108-acre parcel to the west of Trunk Creek and a 165-acre parcel south and west of Trunk Creek. Significant portions of these properties are within the Critical Area, and the 165-acre tract is adjacent to the Mill Creek NHA. This land would be purchased by DNR to enhance protection of the Mill Creek NHA. These tracts are currently in agricultural use, and reforestation and other restoration activities are proposed by DNR and the Town as a means of enhancing and optimizing the long-term protection of the NHA.

At the Program Subcommittee meeting, you said although the property owner and the Town do not have a conceptual plan for the future development of the 100 acres proposed to be retained by the developer, you were seeking feedback from the Subcommittee regarding the use of growth allocation. Specifically, you said you were interested in determining if the Commission would look favorably upon a request for growth allocation that did not include a 300-foot setback if alternative conservation measures involving the permanent protection of approximately 275 acres generally adjacent to the Mill Creek NHA were proposed. DNR staff stated that the proposal involved a unique opportunity to protect a significant area of land and that the vast majority of the Mill Creek NHA is south of the tidal creek where the developer is not proposing to provide a 300-foot setback. DNR staff indicated that the permanent protection of much of the property would offset the reduction in the setback and that the required 100-foot Buffer should be adequate to protect Trunk Creek given the permanent protection afforded the remainder of the property.

After listening to your presentation and the comments and recommendations from DNR staff, the Program Subcommittee's initial reaction to the proposal as generally described was positive. While the Program Subcommittee's comments do not represent those of the full Commission and are not an "official action" by the Commission, the Subcommittee looks forward to working with you as the proposal moves forward. It is important to acknowledge that any growth allocation proposal reviewed by the Commission will be reviewed in accordance with the provisions of the law and Criteria in effect at the time that the proposal is submitted.

The following issues were discussed and will likely warrant further discussion by the Town, the developer, and the DNR with Commission staff and the Program Subcommittee as the various aspects of the acquisition, development, and permanent protection of the properties are coordinated:

- Significant tracts of land west and south of the property are protected for conservation purposes and other nearby lands may become available if development of this property is limited as proposed.

- Much of the site is currently in agricultural use, and if DNR acquires these lands, there are excellent opportunities to expand forested habitats on and off-site through targeted reforestation efforts. Reforestation will provide additional forested habitat for Delmarva Fox Squirrel and Forest Interior Dwelling Bird species.

- This site and adjacent NHA includes numerous rare, threatened, and endangered plant species, many of which are dependent on distinct hydrologic regimes. Minimizing the area proposed for development, conserving significant acreage in the watershed, converting agricultural lands to forest, and establishing the 100-foot Buffer on all tidal waters, tidal wetlands, and tributary streams will significantly improve the likelihood of maintaining current hydrologic conditions and potentially improving water quality.

- Much of the land proposed for acquisition by DNR contains hydric soils, potentially providing opportunities to restore prior converted cropland to functioning wetlands, particularly on the southwestern portion of the site.

- The Commission's favorable consideration of a proposal that does not include a 300-foot setback would not preclude the Commission from imposing other conditions on the request for growth allocation. These conditions may include removal or alteration of existing culverts affecting tidal flows into Trunk Creek, restrictions regarding community ownership and maintenance of the 100-foot Buffer, limitations on impervious surface coverage of any proposed development, restrictions on stormwater discharges to any tidal waters or wetlands, and implementation of recommendations resulting from a hydrologic study of surface and sub-surface flows, and other measures as may be required by the Commission.

- The developer is proposing to convey approximately 1.75 acres of land that fronts directly on the Nanticoke River to the Town of Vienna as an extension of the Town's "public waterfront." Town ownership of this land would ensure that no lots would be developed as waterfront lots, the 100-foot Buffer would be properly established and maintained, and that a pedestrian connection could be developed that would connect the Town's existing waterfront park to the lands proposed for conservation.

Thank you for presenting information about this important planning and conservation effort by the Town of Vienna to the Program Subcommittee in the early stages of the proposal. I look forward to the opportunity to work with you through the design development process. If you have any questions, or if I can provide further assistance, please do not hesitate to call me at (410) 260-3480.

Sincerely,

Mary R. Owens

Mary R. Owens
Education and Conservation Coordinator

cc: Tim Brower, DNR
Glenn Therres, DNR
Program Subcommittee, CAC

VIENNA VILLAGE

ECOLOGICAL ASSESSMENT

Prepared For:

Elm Street Development
6820 Elm Street, Suite 200
McLean, Virginia 22101

Prepared By:

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November 28, 2005

TABLE OF CONTENTS

INTRODUCTION

This report provides a summary of ecological conditions on a 377 acre site located immediately to the southwest of the town of Vienna, Maryland. Vienna is located in eastern Dorchester County on the west bank of the Nanticoke River, a major tributary to the Chesapeake Bay.

The purpose of this assessment and report is to provide the prospective developer of the site, Elm Street Development, and other interested parties, with initial ecological information to assist with conservation and site utilization planning. Plans are being developed by Elm Street Development and Urban Development Associates, the site designer, for some type of conservation design development for this site. The density and layout of this design has yet to be finalized, but it is anticipated that a neo-traditional approach to site design utilizing traditional town grid patterns will be utilized. The proposed development framework will provide for the conservation of large contiguous areas of ecologically significant land adjacent to existing natural areas.

The site consists of two primary tracts of land known locally as the Phillips and Legg farms, named after their longtime owners. These two farms are separated by Vienna-Henrys Crossroads Road (also known as Elliott's Island Road), with the Phillips farm to the northwest and the Legg farm to the southeast. Although these farms are currently separate tracts, they are now in unified ownership and will be assessed and developed in a comprehensive manner as a single entity. However the large size of the combined area and the distinct boundary created by the public road necessitates that some of the analysis and mapping in this report will be presented for each farm separately.

The Phillips farm is bounded to the southeast by Vienna-Henry's Crossroads Road, and by private property on all other sides. Access to this approximately 178 acre tract is provided via several gravel/dirt roadways that are utilized predominantly by agricultural equipment. This tract is currently utilized as agricultural land, with a primary land use of row crops and smaller limited natural areas. Several farm buildings exist on the southeastern portion of this tract, just off of Vienna-Henrys Crossroads Road.

The Legg farm is bounded to the northwest by Vienna-Henry's Crossroads Road, to the northeast by public and private property, to the southwest by private agricultural land, and to the east by the Nanticoke River and its associated tidal marshes. Access to this approximately 199 acre tract is provided via a loop gravel/dirt roadway that is utilized predominantly by agricultural equipment. This tract is also utilized as agricultural land, with a primary land use of row crops, and smaller natural areas dominated by tidal marsh.

This assessment incorporates information and data provided in a Preliminary Ecological Assessment report for the Phillips farm tract completed by the author in 2003. The Conservation Fund provided some mapping and correspondence relating to that study as the town of Vienna's conservation partner. Additional mapping for both tracts has been provided for this current report by Lane Engineering of Easton, Maryland.

This assessment focuses on the overall ecological condition and setting of the site, and does not purport to be an exhaustive survey. Additional detailed assessments are currently underway, including detailed topographic surveys, wetland delineations and assessments, and plant community and rare, threatened, and endangered (RTE) species surveys. These more detailed studies will provide additional valuable ecological information that will be further utilized to refine conservation planning and site design.

The author was joined in these detailed assessments by Bill Sipple and Charlie Davis, Maryland ecologists with extensive experience in wetland and botanical surveys. Their contributions to those studies were invaluable and their subsequent incorporation into this preliminary assessment is hereby acknowledged. It is anticipated that the final wetland and plant community assessments will be completed by early 2006.

This report discusses the physical and biological resources of the site, with discussions of unique ecological features and management recommendations. A copy of an aerial photograph for each farm tract with the site boundaries overlaid is provided in Appendix A, along with recent infrared aerial photographs with site boundaries.

SITE PHYSIOGRAPHY

The site is located on the Eastern Shore of the Coastal Plain physiographic province. The Coastal Plain is generally low elevation, flat land, with minimal relief (Schmidt, 1993), and this site exhibits typical Coastal Plain physiography. A copy of the relevant portion of the most recent USGS topographic quadrangle is provided in Appendix B that shows the site and its immediate surroundings.

Topographic maps for each farm tract are provided in Appendix A. There are several topographic high points on-site with no discernible ridgeline, as is typical in this portion of the coastal plain. The topographic information presented on these maps was obtained using LIDAR technology, which is highly reliable in open areas, but can become less reliable in heavily forested areas. The topography shown in the northwestern portion of the site is noticeably inaccurate, but appears to be accurate elsewhere on-site.

The highest overall natural elevation is in the vicinity of 11 feet above mean sea level at the far northwestern corner of the site. There are scattered higher elevations in this area due to earthmoving activities. The other most prominent highpoint on-site occurs at the far northeastern corner of the site where a terrace above the adjacent Nanticoke River rises to approximately 9 feet above mean sea level. The majority of the site lies between 5 and 8 feet in elevation, with generally sharp elevation drops into tidal marshes and waters roughly at sea level.

The entire site drains to the internal tidal gut and/or the Nanticoke River, with the exception of isolated depressions and perhaps the far northwestern corner of the site. The local high point on the northwestern portion of the site soon dips down towards Otter Pond Branch to the west. Otter Pond Branch is a tributary to the Chicawicomico River, a

tributary to the Transquaking River, which flows into Fishing Bay. Based on available topography and observation of the drainage patterns on-site, it appears that this small portion of the site may be part of the Chicawicomico drainage.

The 1968 Geologic Map of Maryland (Maryland Geological Survey, 1968) shows that this site is underlain by Quaternary Lowland Deposits. These are relatively young deposits of mixed sands, silts, and clays that were recently deposited. This map is considered somewhat dated, and is in the process of being revised, according to the MGS website, but the general geologic description of this area should not change significantly. A copy of the relative portion of this map is provided in Appendix B with the appropriate keys.

The soil survey of Dorchester County was recently updated (USDA, 2002), and a copy of the soil map for the site area is provided in Appendix B along with a key to map units. The general soil map provides a broad overview of distinct natural landscapes and formations that are expressed on the land surface. Most of this site falls within the Fallsington-Woodstown-Pone map unit, with the Othello-Elkton map unit and the Bestpitch-Transquaking map unit also present.

The Fallsington-Woodstown-Pone soil unit is comprised of soils that are nearly level to gently sloping with a wide range of drainage characteristics, and formed in loamy or sandy sediments. This map unit is the most prevalent on the site, occupying most of the northern portions of the site. The Othello-Elkton map unit is comprised of soils that are nearly level and poorly drained, formed in silty materials over sandy materials. This map unit is found on the southern portion of the site. The Bestpitch-Transquaking map unit consists of organic soils over clayey estuarine sediments found on nearly level land near sea level. This map unit is found in the Nanticoke River marshes and in the lower portion of the tidal gut draining the site.

Fallsington sandy loam is a dominant soil on-site, occurring on the level flats on the west-central portion of the site. This is a hydric soil series that is poorly drained, very deep, and typically found in low uplands, depressions, and swales. Nearly all of this soil on-site has been drained and utilized for agricultural production, and this soil is classified as Prime Farmland where drained by USDA.

Othello silt loam is another dominant soil on-site, occupying much of the southwestern portion of the site. This is a hydric soil series that is poorly drained, very deep, and typically found on broad lowland flats. All of this soil on-site has been drained and utilized for agricultural production, and this soil is classified as Prime Farmland where drained by USDA.

Woodstown sandy loam is also dominant on-site, and is found on the higher elevation terraces and level ground to the west of the tidal gut and on the northeastern corner of the site. This is a non-hydric soil series that is moderately well-drained, very deep, and typically found on upland flats and shallow depressions. Nearly all of this soil on-site is utilized for agricultural production, and it is classified as Prime Farmland by USDA.

The similar Mattapex and Mattapeake silt loams are found on the uplands of the northeastern portion of the site. These are non-hydric, very deep soils typically found in lowland flats. Mattapeake soils are well-drained versus the moderately well-drained Mattapeake soils, and the latter also exhibits redoximorphic features in its B-horizon, which the former lacks. These soils differ primarily from the somewhat similar non-hydric Woodstown soils in their silty loam versus sandy loam texture. Nearly all areas of these soils on-site are utilized for agricultural production, and are classified as Prime Farmland by USDA.

Pone mucky loam is mapped in a broad depression on the west-central portion of the site. This is a hydric soil series that is very poorly drained, very deep, and typically found in lowlands, depressions, and swales. Pone is a mucky soil very high in organic content that generally forms in closed depressions subject to long duration ponding. All of this soil on-site has been drained sufficiently for utilization for agriculture. This soil is not classified as Prime Farmland, even when effectively drained.

Sunken mucky silt loam is mapped in the upper portion of the tidal gut, and is also a hydric soil series. This is a very poorly drained, very deep soil typically found on lowland flats that are often inundated by brackish water during storm and high spring tides. All of this soil on-site remains as natural forested wetland, although past excavation and disturbance has occurred.

The Bestpitch-Transquaking map unit is mapped at the lower end of the tidal gut and consists of intermingled Bestpitch and Transquaking soils that were not easily mapped separately. Both of these soils are hydric soil series that are very poorly drained, very deep, and typically found in estuarine tidal marshes. The Bestpitch and Transquaking soils are very high in organic matter and of low strength and stability, and are high in salts due to their tidally influenced landscape position.

There are very small areas of Hambrook loam along the northern property boundary, and Keyport silt loam and Elkton loam along the western property boundary. Hambrook and Keyport are non-hydric soils that are well drained and moderately well drained, respectively. Elkton is a poorly drained hydric soil.

The overall physiography of the site is reflected by the distribution of soil types. The driest soil type, Matapeake silt loam, is found on the high terrace adjacent to the Nanticoke River, with an adjacent area of Mattapex silt loam. These areas are extensions of the local higher elevation terrace that supports the town of Vienna and extends southward to the tidal gut that intrudes into the site. Woodstown sandy loam surrounds this area and also forms the opposite terrace confining the tidal gut. Both the Matapeake/Mattapex and Woodstown terraces exhibit relatively steep topography as they descend to the tidal gut. The tidal gut is a formative and distinctive feature on the landscape and is underlain by Transquaking-Bestpitch soils in the lower tidal brackish reach, and by Sunken mucky loam in the upper fresh tidal reach.

The elevated lowland flats to the west of the upland Woodstown terrace are the outer edge of a broad area of depressional and nearly level low-slope wetland soils typical of the lower coastal plain. Fallsington sandy loam and Pone mucky loam are found on the northern portion of the site, and Othello silty loam is found on the southern portion of the site. Although the Fallsington, Othello and Pone soils are designated hydric soil series, these areas have been effectively drained by ditch construction, with perhaps subsurface drains also employed. This conversion has altered the moisture regime of these soils so that they no longer support wetlands and apparently produce good crop yields.

Natural stream channels certainly once dissected these broad flats, as evidenced by the distinctive broad lateral swales off of the primary tidal gut and smaller swale mouths along the Nanticoke River marshes. Manipulation of the landscape for conversion to agricultural use has either obliterated these former streams or confined them within constructed and maintained ditches. This landscape-level disturbance of hydrologic patterns is common throughout the lower Eastern Shore.

AQUATIC RESOURCES

The Nanticoke River is a large tributary to the Chesapeake Bay, and this site drains to the lower tidal portion of the river downstream of Vienna. The Nanticoke and its tributaries are classified as Use II by the Maryland Department of the Environment (MDE). The tidal gut extending into the site is the primary drainageway for this site and surrounding lands, including portions of western Vienna.

The physical and biological attributes of the streams located on-site are discussed below, along with adjacent wetlands. These aquatic resources are labeled on the Ecological Features Map provided in Appendix C. The extent of federal and state jurisdiction over these resources has not been determined as of this date. Wetland and waters identification and delineation activities have recently been completed and await final mapping and consultation with the regulatory agencies before final boundaries can be established. The boundaries provided herein are preliminary based on recent fieldwork and available mapped information.

Nanticoke River

The Nanticoke River is a large tidal river that begins in Delaware and flows on to the Chesapeake Bay through Maryland. The Nanticoke River is a significant eastern shore resource, providing substantial discharge to the Chesapeake Bay and supporting a diverse riverine ecosystem with especially diverse and productive wetland resources (Sipple 1999).

Direct access to the Nanticoke from the site is possible only at the northeastern corner of the site where a relatively high terrace abuts the river. Approximately 600 feet of direct river frontage exists along this terrace, which has been armored against erosion with

broken concrete. A narrow sandy beach with limited vegetation exists along the base of this armoring.

Nanticoke Marshes

The Nanticoke River proper is separated from much of the frontage of the site by extensive tidal marshes. Although well vegetated, these lateral marshes are integral parts of the Nanticoke River system. Smaller tributary tidal creeks and open water pockets exist throughout these marshes, providing open water connectivity and pathways to the larger Nanticoke system.

The tidal extensive tidal marsh fronting the property has developed at an extensive low point bar position on the inside of a large meander of the Nanticoke River. Erosion appears to be limited along the Nanticoke River interface, but is apparent in localized areas, primarily along the northern edge where the transition from outer meander at the direct river frontage to point bar occurs. The entire Nanticoke River and marsh complex is an obvious high value waterfowl habitat, and several waterfowl hunting blinds are scattered through the marsh. Several swales, apparently remnants of historic stream confluences, exist along the upland – wetland transition area. Non-tidal fringe wetlands are present at these swales and at other limited seepage areas along the wetland boundary.

Tidal Gut

A wide tidally influenced stream and wetland system, commonly referred to as guts, that transects the interior of the site. This tidal gut is comprised of various sections that vary along its length and are demarcated by various perpendicular crossings. The lowest portion is a classic upper tidal estuarine tributary from its confluence at the Nanticoke River to the crossing of Vienna-Henrys Crossroads Road. A causeway of indeterminate age was constructed near the mouth of this system to facilitate travel between separated sections of the Legg farm. This causeway is constructed of a variety of fill materials with twin culverts near the center providing for hydrologic continuity. A small concrete box culvert provides for hydrologic continuity under Vienna-Henrys Crossroads Road. An old wooden bridge crossing exists approximately 200 feet upstream from the road crossing with lateral fills extending from each side of the tidal gut. This bridge and the associated fill appear to be subsiding into the unstable marsh soils. The upper end of the tidal gut is marked by a small metal culvert under a farm road near the northern property boundary. Tidal influence extends at least up to this culvert, and possibly further upstream, but tidal influence is not readily apparent above this point.

These hydrologic restrictions make suitable break points for analysis and discussion. The tidal gut below the causeway is as much influenced by the Nanticoke River as it is by the tidal gut itself, with many similarities between the Nanticoke tidal marsh and this lowest portion of the tidal gut. This area has been consolidated into the Nanticoke marsh habitat patch for subsequent analysis and discussion. The tidal gut from the causeway upstream to Vienna-Henrys Crossroads Road, including the tidal lateral arms, is hereby labeled as the lower tidal gut. The upper portion of the tidal gut from the public roadway crossing

to the farm road culvert is hereby labeled as the upper tidal gut. The upper and lower tidal gut habitat patches are roughly equal in size. There are visible differences in the upper tidal gut on either side of the abandoned bridge crossing, but these are part of a continuum of gradual changes as one progresses upstream.

The lower tidal gut possesses a very well defined central channel following a tortuously meandering course through the broader vegetated tidal marsh system. This pilot channel ranges in width from 20-50 feet and up to 6 feet in depth. Smaller pilot channels flow into this channel from the two primary ditches to the southwest. Tidal action is concentrated at the causeway restriction, with certain effects on salinity gradients, nutrient cycling, flushing, and other hydrologically related phenomena, which have not been assessed at this time, and may include positive as well as negative effects.

The culvert carrying the tidal stream under Vienna-Henrys Crossroads Road is a small, low concrete box culvert that similarly constricts the tidal system to a very narrow cross section. The same phenomena discussed above are further exacerbated by this additional restriction. This culvert is generally underwater during high tide, with vortexes developing during tidal shifts.

The abandoned bridge crossing just upstream from the roadway crossing also acts as a restriction, although to a lesser degree than the roadway culvert. The bridge is rapidly deteriorating and subsiding into the marsh along with the lateral fill dikes. Tidal influence continues well above the culvert and old bridge crossings. The tidal gut above the roadway culvert consists of a central channel averaging 8-10 feet in width and 2-4 feet in depth with tidal wetland fringes on both sides. This channel is relatively straight and appears to have been artificially straightened, although there are no signs of side-cast levees.

Upstream of the old bridge, the central channel and tidal wetland fringe pattern continues, with a gradual transition to a more freshwater tidal forested wetland. The central channel becomes more narrow and shallow with evidence of historic ditching. There are distinct side-cast levees on either side of the channel, with occasional breaks accessing low flooded wetland areas.

A significant side pool exists in the upper reaches of this area on the eastern side. This pool is up to 3 feet in depth and is approximately 70 feet in width and 200 feet in length. Two prominent breaks in the northern levee at the upper and lower end suggest that this was a man-made depression, or perhaps was a natural depression that was allowed to remain connected to the central channel.

Above the confluence of the major northwestern ditch, the wide tidal gut system narrows to a narrow ditched channel with very little natural buffer. However, there is still evidence of tidal influence at least up to the small culvert that carries the farm access road over the ditch. For the purposes of this report, this culvert will be utilized as the dividing line between the tidal gut and ditch systems.

Northeastern Tidal Gut

The northeastern tidal gut is a smaller tidal gut located at the northeastern corner of the site. This tidal gut is largely outside of the boundaries of this site, but the site boundaries include a small portion of the outer fringe of the tidal wetland and adjacent forested non-tidal wetland swale and their forested buffer. Due to its limited extent on-site, this area is considered as one system for the purposes of this assessment.

This tidal gut has a poorly defined central channel in its upper and lower reaches, with no apparent channel throughout the center. A narrow non-tidal wetland swale descends relatively sharply into the tidal wetland system. Historic fill is apparent on the opposite side of this swale off-site. A small isolated depressional wetland exists at the upper end of this swale that may or may not be considered jurisdictional.

Streams / Ditches

Channelized ditches of varying depths and widths are found throughout the site. While all of these ditches are obviously man-made, some carry sufficient baseflow to warrant consideration as channelized streams. The regulatory status of these ditches will need to be determined by the Corps of Engineers (COE) and Maryland Department of the Environment (MDE).

From an ecological perspective, the larger channels serve many of the functions of natural streams by transporting water, sediment, and nutrients and providing habitat for aquatic organisms and water for terrestrial wildlife. Those channels that were constructed to drain areas of high water tables are likely to have a perennial or semi-perennial discharge regime as they collect and transport collected groundwater discharge. These channels are identified on the Ecological Features Map as major ditches and are likely to be considered jurisdictional streams by COE and MDE.

Smaller channels and those draining areas of lower groundwater tables may flow only intermittently during periods of higher groundwater (spring) and for short periods after storm events. Intermittent discharge regime channels may also be considered jurisdictional streams by COE and MDE. COE may also take jurisdiction over larger ephemeral channels with no obvious baseflow, but generally do not do so with obviously man-created ditches.

The primary ditches on-site consist of (in counter-clockwise order from Vienna) the northeastern, northern, northwestern, western, southwestern, and southern ditch systems. These ditch systems generally consist of a network of ditches of various types. Several smaller ditches exist throughout the site that drain directly to the tidal gut or the Nanticoke marshes.

The northeastern ditch system collects much of the drainage from western Vienna through several feeder ditches. The upper portions of these ditches appear to flow ephemerally or intermittently, with perennial flow conditions only noted below the

confluence of the last feeder ditch prior to its confluence with the northwestern ditch system. The upper portions of this ditch system were created within non-hydric upland soil series and should not be considered jurisdictional.

The northern ditch flows from the gravel pit pond along the northern site boundary then turns southward to the tidal gut. Several other ditches enter this ditch from off-site to the north. This channel appears to be intermittent in flow regime until its juncture with the northeastern ditch system where perennial flow conditions are apparent.

The northwestern ditch flows eastward into the tidal gut at the head of the wide wetland system. Two significant tributary ditches join at the west-central corner of the site, one carrying drainage from the northwestern portion of the site, and one carrying drainage from the southwestern portion of the site. Both of these primary forks and the combined channel appear to be nearly perennial in flow regime. Several smaller intermittent to ephemeral ditches join these two main forks of the western ditch system.

The western ditch flows along the northwestern side of Vienna-Henrys Crossroads Road, eventually crossing under the road through a culvert pipe and on to the lower tidal gut. The primary channel is perennial in flow regime, and collects drainage from several smaller ditches on both sides of the roadway. The largest feeder ditch drains the northern portion of the Legg farm, running parallel to the southwestern ditch.

The southwestern ditch is the smallest primary ditch system on-site with limited short feeder ditches. This ditch appears to be intermittent in flow regime at best, with increasing evidence of hydrology as it descends towards the lower tidal gut.

The southern ditch flows along the southern property line to the Nanticoke marshes, and is nearly perennial in flow regime throughout its length. This ditch collects drainage from the southeastern side of Vienna-Henrys Crossroads Road and a series of agricultural field ditches both on-site and on the adjacent farm. Large schools of killifish (*Fundulus diaphanus*) were observed in this ditch during the spring of 2005.

Those ditches labeled as major ditches on the Ecological Features Map were observed to have evidence of nearly perennial flow and drain formerly hydric soils or other wetland areas. All of these ditches carried baseflow at some time during the site investigations, and are likely to be classified as jurisdictional waters. Those ditches labeled as minor ditches are primarily dry and exhibited little or no evidence of baseflow or wetland conditions. These are predominantly ephemeral ditches that were created for conveying surface drainage or were created in definitively upland soils and are not likely to be considered jurisdictional waters.

Gravel Pit Pond

A small open-water / wetland complex has developed at the far northwestern corner of the site in an old gravel pit. According to Steel Phillips, the long-term owner of the Phillips tract, this area was mined for gravel during the construction of Route 50 in the

early 1950s. An earthen berm of up to five feet above local elevation surrounds this pond, apparently cast-off overburden. This berm is well stabilized with vegetation. There is no direct inlet to this pond, and a high-pass culvert outlet is located at the northeastern corner at the head of the northern ditch system.

A band of open water up to 8 feet in depth exists in a regular width band along the southern and eastern edges. There is a very sharp transition to the upland berms. The northwestern portion of the pond is much shallower with depths of 1-3 feet and significant woody plant growth. Water levels were observed to be down by approximately 4-5 feet during September 2005 field visits. Occasional drought-related drawdowns are likely and allowed for the vigorous woody plant colonization observed.

No fish were observed, but there were no intensive search efforts conducted. Steel Phillips recalled that largemouth bass were once plentiful in this pond. This pond does provide ideal amphibian habitat and several species were observed during this assessment, as well as a relatively permanent water source for terrestrial wildlife.

Wetlands

The aquatic resources discussed above are primarily open water (pond), riverine (non-tidal stream) or estuarine (tidal) habitats. Wetlands are landward extensions of these types of habitats characterized by wetland hydrology (flooding, ponding, or saturation), hydric soils, and hydrophytic vegetation.

Wetlands are identified and delineated by the U.S. Army Corps of Engineers Wetlands Delineation Manual (USACOE, 1987) for most regulatory purposes. The Corps of Engineers (COE) and MDE are the primary regulators of wetland-related activities in Maryland under the authority of section 404 of the federal Clean Water Act and the Maryland Non-tidal Wetlands Act. Tidal wetlands are governed by a separate set of regulations in Maryland, also administered by MDE.

In areas of active agricultural use, the Corps Manual is supplanted by the National Food Security Act Manual (USDA, 1994) administered by the USDA Natural Resources Conservation Service (NRCS). This manual requires more significant evidence of wetland hydrology on active agricultural lands to characterize these lands as jurisdictional wetlands.

Former wetlands that have been maintained in agricultural use for some time and which have been modified by this use may be classified as Prior Converted Cropland (PC) and no longer considered to be wetlands for regulatory purposes. Active agricultural lands that meet certain wetland parameters may be classified as Farmed Wetland (FW) or Farmed Wet Pasture (FWP). These types of wetlands can continue to be utilized for their current agricultural use, but cannot be converted to other non-agricultural uses. Regardless of the jurisdictional status of these types of wetlands, they are still worthy of protection when possible, and are often excellent candidates for wetland restoration.

Although there are large areas of hydric soils mapped on-site, most of these have been effectively drained with major and minor drainage ditches. The currently drained and farmed hydric soils on-site are Fallsington sandy loam, Pone mucky loam, and Othello silt loam.

The Fallsington soils are generally easier to drain due to their sandy texture, and all of these farmed soils are effectively well drained and are not likely to revert to wetlands with the cessation of agricultural activities. The drainage network is well maintained and appears to be historic. Therefore these areas of the site should meet Prior Converted Wetland status criteria and not be subject to wetland regulation.

The Pone soils are more difficult to drain due to their mucky, high organic content texture, and generally have a higher water table. A sizable area of Pone soil is mapped on the western portion of the site, and the general extent of this soil was evident in the field due to its darker surface color. A major ditch of surprisingly large size and discharge was cut into the center of this area and apparently provides sufficient drainage to adequately drain this area for crop production. There was no evidence of significant ponding in the field, and this area should also qualify as Prior Converted Cropland and not be subject to wetland regulation.

The Othello silt loam soils are located on the Legg farm tract and are apparently very well drained by the extensive network of major and minor ditches. These soils are generally more difficult to drain than sandy Fallsington soils due to their silty texture and higher water table, but are not as problematic as Pone mucky loam. The more extensive network of ditches in this area appears to be necessary to maintain adequate drainage for agricultural production. This effectiveness of this system appears to be high, and these fields should qualify as Prior Converted Cropland and not be subject to wetland regulation.

The primary wetland systems on-site are the extensive Nanticoke marshes and the central tidal gut system. These systems are significant features on the landscape and are readily apparent. The northeastern tidal gut, the gravel pit pond, and the northwestern forested wetland are less extensive but still ecologically significant wetland features. Additionally, there are several small scattered wetland depressions and ditches of various levels of function and value.

The marshes along the Nanticoke River and the tidal gut are primarily tidal estuarine emergent wetlands, which become progressively less tidally influenced with less salinity and greater woody plant dominance as distance from the Nanticoke River increases. Tidal influence appears to extend to the head of the tidal gut system, if only at extreme tidal events at the upper end. The tidal wetlands immediately adjacent to the Nanticoke and lower central channel are tidal brackish emergent fringes with standing water up to several feet in depth, depending upon tidal stage. These tidal fringe wetlands grade into semi-regularly inundated and occasionally inundated tidal and non-tidal wetlands. Non-tidal fringes exist along the upland transition edge, and are more extensive in the upper reaches of the system.

Narrow bands of wetlands exist along most of the major ditches on-site. These are almost all scrub-shrub or emergent non-tidal wetlands, although a narrow band of tidal freshwater emergent wetlands extends up to the access road culvert from the tidal gut. These narrow bands may or may not be taken as jurisdictional wetlands due to their location in agricultural ditches.

There are two larger wetland areas associated with the ditch system where drainage has been impeded by ditch blockages, or where topographic low areas allowed for dispersion of drainage. One such area is located near the central portion of the northern border ditch, and is scrub-shrub in form, with a strong dominance of common reed (*Phragmites australis*) along the agricultural field edge. Another expanded wetland area is located at the juncture of the two forks of the western ditch, and is an emergent wetland dominated entirely by common reed.

Common reed is an extremely aggressive rhizomatous grass with persistent vegetative matter, and is certainly a factor in the blockage of drainage and creation of expanded wetland conditions at these locations. More detailed discussions of the plant communities of the wetlands on-site are provided in the section below.

PLANT COMMUNITIES

Due to the intensive agricultural use of the site, natural plant communities are limited to those areas that were too wet to effectively conduct agricultural operations on. In these natural or semi-natural areas, a variety of plant communities exist. These plant communities include old fields, hedgerows, and forested, scrub-shrub, and emergent tidal and non-tidal wetlands.

Detailed plant community mapping or analysis was not conducted during fieldwork for this preliminary assessment. A reconnaissance of the entire site was conducted, with observations made as to the general location and extent of major plant community types on-site. The dominant plant species of each community were noted, although there are certainly variations within each identified community. Each community is discussed in greater detail below, and is identified on the Ecological Features Map provided in Appendix C.

A detailed plant community assessment and RTE species search was launched in early 2005 to describe the primary natural communities on-site and attempt to locate any RTE plant species on the site. This assessment focused on the northwestern forested wetland and gravel pit pond, the lower and upper tidal guts, the northeastern tidal gut, and the Nanticoke marshes and their surrounding limited upland forest buffers. Three seasonal surveys were conducted of these habitats in May, July, and September 2005 to coincide with various flowering and fruiting times of various species. Relative dominance rankings were applied to each species, and several hundred pressed specimens were collected for later specific identification. The final results of this assessment are not yet

available, but will be made available to interested parties upon completion. Several significant finds were made during the course of this assessment, which will be presented here in preliminary form.

Farmsteads

Two farmstead areas exist on-site, one on the southeastern portion of the Phillips farm, and one at the northeastern portion of the Legg farm. The Phillips farmstead area currently supports two agricultural buildings and limited dumping and burning of yard waste has occurred on this portion of the site. The Legg farmstead area currently supports no buildings and is relatively free of debris.

Formerly managed lawn comprises most of these areas, dominated by lawn-type cool season grasses and common native and exotic weed species. A small patch of Canada thistle (*Cirsium arvense*), a state-designated noxious weed, is found along the Vienna-Henry Crossroads Road near the Phillips farmstead.

Agricultural Fields

Traditional row-crop agriculture covers the majority of this site. Plant diversity is expectedly low in these fields, and is currently dominated by corn and soybeans, with varying concentrations of native and exotic weed species. The most common weed species observed are foxtails (*Setaria* spp.), pigweed (*Amaranthus* sp.), morning glory (*Ipomoea* sp.), groundsel (*Senecio vulgaris*), and speedwell (*Veronica* sp.).

These fields appear to have been managed with frequent tillage, with minimal organic residue levels. Soil erosion is obvious on most fields, with accumulations of eroded material in lower landscape positions. However, soil erosion is limited by the generally very low slopes throughout the site.

Most areas of agricultural fields on-site are on mapped former hydric soils that have been ditched and drained to allow for crop production. The larger excavated ditches are supplemented by smaller tractor blade created feeder ditches to assist with field drainage.

Old Fields

Two old fields exist along the western border of the Phillips farm tract that were recently abandoned from active agricultural use. These two fields are under long-term set-aside agreements in the Conservation Reserve Enhancement Program (CREP) administered by the U.S. Department of Agriculture, as stated by Steel Phillips.

The northern old field is strongly dominated by tall fescue (*Festuca arundinacea*), a non-native aggressive pasture grass. This species exhibits strong allelopathy, which is the secretion of chemical compounds that are toxic to other species. As a result of the strong fescue dominance, there is little diversity or woody plant invasion, with native goldenrods (*Solidago* spp) most common, which can be equally as aggressive and

allelopathic. Common reed, another aggressive plant species, is dominant along the northern edge.

The southern old field is much more diverse, although many of the dominant species are exotic or native weedy species. Tall fescue is again common, with foxtails (*Setaria* spp.) the co-dominant grass and soft rush (*Juncus effusus*) and several sedge species (*Carex* spp.) common in wetter areas. Common forbs include buttercup (*Ranunculus* sp.), broad-leaved dock (*Rumex obtusifloius*), dogbane (*Apocynum cannabinum*), and clovers (*Trioiium* spp.). Limited woody invasion is occurring along the forest edge. There are several depressions located within this field that exhibit varying degrees of wetland characteristics.

Hedgerows and Ditches

Several hedgerows of varying widths exist throughout the site, serving as boundaries between agricultural fields and between agricultural fields and other land uses. These are linear communities of young age, with a mix of young forest and old field characteristics.

Most hedgerow-type habitats on-site have developed along linear agricultural ditches, and differ from typical hedgerows in having a central ditch carrying water with associated hydrophytic plant species. Most hedgerows on-site exhibit a pattern of wet-adapted species centrally, with drier-adapted species towards the edges and field boundaries.

Dominant tree species include sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and black cherry (*Prunus serotina*), with sassafras (*Sassafras albidum*), persimmon (*Diospyros virginiana*), black gum (*Nyssa sylvatica*), and the exotic white mulberry (*Morus alba*) also common. Black willow (*Salix nigra*) is common in wetter areas. The shrub component is dominated by several species of brambles (*Rubus* spp.) and the exotic species multiflora rose (*Rosa multiflora*), Tatarian honeysuckle (*Lonicera tatarica*), and privet (*Ligustrum obtusifolium*). Woody vines such as poison ivy (*Toxicodendron radicans*), common greenbrier (*Smilax toundifolia*), grapes (*Vitis* spp.), and the exotic Japanese honeysuckle (*Lonicera japonica*) are also common.

Herbaceous plants vary in type and density depending on the level of shade provided by larger woody plants and moisture regime. Tall fescue and goldenrods are most dominant, with pokeweed (*Phytolacca americana*) brome grass (*Bromus* sp.), and foxtails also common. Jewelweed (*Impatiens capensis*), soft rush, and rice cutgrass (*Leersia oryzoides*) are also common in wetter areas, along with common reed in the two larger wet ditch areas.

Several unusual species were observed in scattered ditch-side habitats. Scattered ragged fringed orchids (*Platanthera lacera*) were observed along the lower portion of the southwestern ditch. A small patch of the unusual primitive fern adder's tongue (*Ophioglossum vulgatum*) was also found at the lower end of the southern ditch just prior to its confluence with the Nanticoke marsh. These specimens are somewhat intermediate

between the two recognized subspecies and deserve further attention. The westernmost portion of the northwestern ditch system supports several SAV species in limited numbers that were not found elsewhere on-site. Water-milfoil (*Myriophyllum* sp.) and water starwort (*Callitriche* sp.) plants as yet unidentified to species were observed or collected in this ditch on several occasions.

The most notable upland hedgerow on-site is a narrow hedgerow consisting of larger trees 15-24 inches diameter breast height (DBH) located on the north side of the access road west of the uppermost tidal gut culvert. Several large water oaks (*Quercus nigra*) exist in this hedgerow, along with many of those species listed above.

Riparian Forest Buffer

The narrow upland forest buffer surrounding the extensive tidal wetlands on-site is variable throughout, but generally similar in species composition and community structure. Trees generally range from 10-20" DBH, with only a few exceeding 30 inches DBH. Dominant tree species include red maple, black cherry, and southern red oak, with sweetbay magnolia (*Magnolia virginiana*) common along the lower wet edge. Arrowwood viburnum (*Viburnum dentatum*), pepperbush (*Clethra alnifolia*), and brambles are the most common shrubs, with poison ivy and common greenbrier the most common woody vines. Herbaceous species are highly variable depending on shade and moisture regime.

Exotic invasive species are generally limited in extent, but are establishing and spreading in several areas. These areas are predictably closest to the roadway and the farmstead areas. Oriental bittersweet (*Celastrus orbiculatus*) and wild potato vine (*Disoscorea battatas*) are the two most potentially problematic species and should be controlled before progressing further.

Much of the narrow buffer along the lower tidal gut and the Nanticoke marshes has recently been cleared of vegetation by some type of heavy brush cutting device. Shrubs and small trees up to six inches in diameter were shredded to ground level. Although this eliminated above-ground growth, nearly all cut plants appear to have survived and are vigorously re-sprouting. Those areas that were not cut over are nearly impenetrable in most areas with heavy greenbrier growth.

There are several areas of particular interest along this linear forest system. The most significant is the presence of the state endangered (S1) velvety sedge (*Carex vestita*) in a small area of outer edge on the Legg farm (see Ecological Features Map). This sedge is present as a small clonal patch located immediately at the agricultural field edge, with several apparently conspecific vegetative culms scattered throughout the adjacent forest. The general area in which this species was found is one of the most interesting and diverse areas of the narrow riparian forest, with a strong sideslope seep dominated by netted chain fern and a narrow upland forest intrusion into the tidal wetland, with non-tidal seeps to either side. This general area produced several other species unique to the site, several of which remain to be identified to species.

The vast majority of the site consists of active agricultural fields or various types of wetland habitats, with limited upland natural areas. The few relatively natural upland forest and edge habitats occur along the forested wetland edges. One such area is mentioned above and supports a state endangered species, and other such areas on-site may yield other unusual species after further study. These areas also support species generally common to such habitats, but which are relatively uncommon on-site. These areas will serve as important refugia for upland forest species that can provide focal points for the recolonization of future upland reforestation areas.

Upper Tidal Gut Wetlands

The wetlands of the upper tidal gut exhibit the greatest diversity on this site, as expected. There are three general plant communities in this area, the open emergent estuarine tidal marsh below the old bridge, the scrub-shrub/emergent tidal fresh/slightly brackish water wetland above the old bridge, and the tidal freshwater forested wetland at the head of the system. All of these communities are tidally influenced to a greater to lesser degree, and are bordered by narrow non-tidal fringes transitioning to the upland forest buffer.

The lower estuarine tidal marsh is dominated by arrow arum (*Peltandra virginica*), sweet flag (*Acorus calamus*), and common reed in distinct parallel bands moving landward and higher in elevation from the central channel. Common subdominants include marsh hibiscus (*Hibiscus moeschutos*), water dock (*Rumex verticillatus*), wild rice (*Zizania aquatica*) and soft-stemmed bulrush (*Scirpus validus*). The areas dominated by common reed are effectively monocultures.

The scrub-shrub and emergent wetland area above the old bridge consists of a matrix of scrub-shrub and young forest with a central band of emergent vegetation along the central channel and emergent areas along prominent side channels. The dominant woody plants are young red maples, swamp rose (*Rosa palustris*), and poison ivy, with silky dogwood (*Cornus ammomum*) and groundsel tree (*Baccharis halmifolia*) common along the upper edges. The emergent areas are dominated by arrow arum and sweetflag along the channel, with pickerelweed (*Pontederia cordata*), broad-leaved cattail (*Typha latifolia*), and rice cutgrass also common. Royal fern (*Osmunda regalis*), lizardstail (*Saururus cernuus*), and meadow-rue (*Thalictrum* sp.) are also common in the more shaded areas.

The upper forested wetland area is strongly dominated by red maple, with subdominant black gum, ranging in size from 8-18" DBH. Young red maples are also common in the shrub layer, along with arrowwood viburnum (*Viburnum dentatum*), silky dogwood, and the exotic Russian olive (*Eleaganus umbellatus*) on higher elevation hummocks. Poison ivy and common greenbrier (*Smilax rotundifolia*) are the common woody vines. Small black cherries, red cedars (*Juniperus virginiana*) and Virginia creeper (*Parthenocissus quinquefolia*) are found on drier hummocks and old levees. Common herbaceous plants are royal fern and jewelweed.

Lower Tidal Gut

The lower tidal gut plant community is similar to the lowest portion of the upper tidal gut system. Arrow arum, sweet flag, and wild rice are the dominant species throughout the area, with scattered areas of common reed dominance. This area is subject to significant structural and aesthetic fluctuations through the seasons as plant dominance changes. Wild rice is an annual grass that begins slowly, becomes strongly apparent during summer, then rapidly fades. This area is strongly dominated visually in late summer by smooth tickseed sunflower (*Bidens laevis*). The state rare (S2S3) northern tickseed sunflower (*Bidens coronata*) was found in limited numbers in the northeastern portion of this area, and probably occurs as scattered individuals throughout.

The tidal/non-tidal fringe areas are often shaded by trees, predominantly red maples and sweetbay magnolias (*Magnolia virginiana*). Shaded areas are dominated by ferns, including royal fern, cinnamon fern (*Osmunda cinnamomea*), and netted chain fern (*Woodwardia aereolata*).

Nanticoke Marshes

The Nanticoke marshes are very similar to the lower tidal gut plant community described above in the areas proximal to the upland edges. Several additional interesting species were found in these upper tidal areas including marsh rattlesnake master (*Eryngium aquaticum*) and the state watchlist (S3) elongated lobelia (*Lobelia elongata*). The latter species was found as single individuals in several areas, but was somewhat common in one particular small cove (see Ecological Features Map). The state rare (S2S3) northern tickseed sunflower was actually very common throughout these marshes from the upper tidal fringe to the edges of the Nanticoke River. Big cordgrass (*Spartina cynosuroides*) was found along the upper non-tidal fringes and in scattered patches in the outer marsh.

The outer tidal fringes of these marshes became dominated in areas by smooth cordgrass (*Spartina alterniflora*) and an as yet unidentified rhizomatous spikerush (*Eleocharis* sp.) that generally lacked reproductive structures. Common reed was aggressively colonizing higher elevation areas of the outer marshes, with several smaller patches along the shoreline.

Northeastern Tidal Gut

The northeastern tidal gut exhibits a more compact non-tidal to tidal transition than the central tidal gut. The upper portion of this area is non-tidal swale with extensive exotic invasive species composition, including English ivy (*Hedera helix*) and daylilies (*Hemerocalis fulva*). The lower portion is forested with red maple dominant, with winterberry (*Ilex verticillata*) and lizardstail dominant in the shrub and herbaceous layers, respectively. The swale is constricted by fill on the off-site opposite side, then opens into an upper tidal freshwater marsh dominated by rice cutgrass and wild rice. Common reed is present as an outer fringe along the opposite shoreline. The lower tidal emergent zone is dominated by arrow arum, marsh hibiscus, and other typical species. The narrow on-

site buffer is partially forested and heavily dominated by exotic invasive species, including a patch of white poplar (*Populus alba*) at the eastern edge.

The most interesting portion of this system is a narrow band of sandy shore colonized by vegetation at its juncture with the Nanticoke River. Many of these colonizing species are found throughout the other wetland habitats on-site, but this area hold the potential to support species unique to the site. A *Lilaeopsis* species was collected only at this location on-site. No flowering specimens were collected, but this is apparently the introduced *Lilaeopsis chinensis*.

Gravel Pit Pond

The gravel pit pond consists of three distinct plant communities, the open water portion of the pit, the flooded shallow water portion of the pit, and the dry berms formed by side-cast overburden. This assemblage of habitats is unique in a local context, and has the potential for supporting rare or unusual plant species due to the unusual conditions found here and its isolated and buffered location resulting from the high surrounding berms.

The open water portion of the pond is predominantly non-vegetated due to its greater depths, but several types of submerged aquatic vegetation (SAV) were observed. Mermaid weed (*Proserpinaca palustris*) was found in this area, predominantly along the shallower edges, and duckweed (*Lemna* sp.) was also found on the surface of the pond. The aquatic liverwort *Riccia* was also found in this portion of the pond.

The shallow swamp-like portion of the pond is densely vegetated with pioneer 2-6" DBH sweetgum saplings. These saplings likely became established during low water conditions resulting from the severe drought conditions of the last several years. Large buttonbush (*Cephalanthus occidentalis*) are also common along the edges of the pond. Tickseed sunflowers (*Bidens* sp.) have germinated at the high water mark on the bark surfaces of the sweetgum and buttonbush stems and eventually rooted into the soil surface 2-3 feet below. Even with low water conditions, these plants were able to survive and set seed. Prostrate rush (*Juncus repens*) has colonized large areas of the upper level basin floor.

The dry edges exhibit a remarkable diversity that has developed on the side-cast overburden excavated to access sub-surface gravel deposits. Tree diversity is high and lacking strong dominance by any particular species. Common tree species are loblolly pine (*Pinus taeda*), sweetgum, red maple, black cherry, American holly (*Ilex opaca*), water oak, willow oak (*Quercus phellos*), southern red oak (*Quercus falcata*), and swamp white oak (*Quercus bicolor*). Diversity of structure and tree size is also high, with the largest trees approximately 24" DBH. Shrub diversity is limited, with wax myrtle (*Myrica cerifera*) common along the pond edges, and brambles found along the field edges. Common greenbrier and the exotic Japanese honeysuckle are the common woody vines.

Herbaceous diversity is moderate, with sedges (*Carex* spp.) most dominant. Ebony spleenwort (*Asplenium platyneuron*), a small fern, was also common. Moss and lichen

cover of much of the soil surface was extensive and dense, which is common in exposed low-nutrient soil. Notable finds in this area included bartonia (*Bartonia virginica*) along the waters edge and a cluster of southern twayblade orchids (*Listera australis*) along the western edge. Although this area is limited in size, it has the potential to support additional rare or unusual species and is certainly a unique habitat on-site.

Northwestern Forest

A small section of a much larger mature lowland forest exists at the extreme northwestern corner of the site. This forest is a relatively mature deciduous forested wetland dominated by trees ranging in size from 15-24 inches DBH, with several larger specimens primarily along the western property boundary. The dominant tree species are red maple, sweetgum, and willow oak (*Quercus phellos*), of which there are several large specimens over 30 inches DBH. The understory is dominated by smaller individuals of the canopy species, with a strong component of American holly (*Ilex opaca*). The shrub layer is dominated by pepperbush, with common greenbrier the most common woody vine. The herbaceous layer is generally sparse, and virtually non-existent in areas of heavy American holly coverage. Sedges and several species of ferns dominate the herbaceous flora.

Two significant RTE finds occurred in this habitat patch during the plant community assessment fieldwork. The state rare (S2) wooly sedge (*Carex pellita*) was found growing as a large clonal patch around the northwestern property corner stake, extending onto all adjacent properties. Scattered vegetative culms that appeared to be conspecific occurred as scattered patches throughout the lower portions of this area. According to the latest *Carex* atlas and annotated list (Frye and Lea 2001), this find constitutes a new county record for this species. The state watchlist (S3) Joor's sedge (*Carex joorii*) was also found in this plant community, primarily in the southern portion of this plant community in relatively open canopy gaps in seasonally flooded depressions.

Adjacent Forests

Although not on-site, two distinct forest stands are adjacent to the western edge of this site and have ecological significance to the subject site. These forest stands are obviously important as wildlife habitats, but also exert influences on the plant communities of the site. These forests exert immediate influences to adjacent agricultural fields in terms of shade, windbreak effects, and competition for water and nutrients. These forest stands also act as seed dispersers to the agricultural fields, which is unwelcome from an agricultural perspective, but will be valuable in colonizing CREP lands and any other future set-aside lands with local native species.

The central adjacent forest is a pioneer loblolly pine stand developing after a recent forest harvest. Dominant tree size is 6-12 inches DBH, with larger mature oaks scattered along the northern edge. Subdominant tree species include southern red oak, black cherry, sweetgum, and red maple.

The southern adjacent forest near the pumping station is a mature mixed deciduous forest with a minor pine component. Dominant tree size is 16-24 inches DBH, with very good structure and vertical stratification. Dominant tree species are sweetgum, red maple, willow oak, southern red oak, black gum, and loblolly pine.

WILDLIFE COMMUNITIES

A detailed wildlife inventory or survey was beyond the scope of this study. However, the habitat types provided by the site can offer some generalizations as to wildlife usage of the site. The primary wildlife needs of food, water, and cover are provided for on this site for a wide variety of species, along with areas suitable for breeding and raising of offspring. Brief discussions of the major vertebrate wildlife types are provided below.

Amphibians and Reptiles

Amphibians and reptiles, collectively referred to as herptiles, occupy a wide variety of habitats. Due to the variety of habitats present on-site, a wide variety of herptiles may be expected to occur, although they will be normally limited to the edges of the agricultural fields, ditches, and the natural areas on-site.

Amphibians, including salamanders, frogs, and toads, all require water for breeding and many species are highly water-dependent as adults. Therefore, the greatest amphibian diversity and densities should be expected to occur in and around the larger ditches, the pond, and non-tidal and tidal wetland habitats on the site.

Reptiles, including turtles, snakes, and lizards, utilize more diverse habitats and are generally not as water-dependent as amphibians, although many species are semi-aquatic. The limited but diverse range of natural habitats on-site should support a wide variety of terrestrial and semi-aquatic reptiles.

The most suitable herptile habitats on site are the Nanticoke marshes and tidal gut with their associated wetlands and forest buffer, and the gravel pit pond. The gravel pit pond could be a locally significant breeding ground for local herptiles, especially if fish are limited in number or absent, as appears to be the case.

Herptile sightings were limited during this survey, but no intensive surveys were conducted. Green frogs (*Rana clamitans melanota*) were observed in great numbers in the gravel pit pond, and bull frogs (*Rana catesbeiana*) were also heard calling at this location. A southern leopard frog (*Rana utricularia*) was observed in the western ditch. Green treefrogs (*Hyla cinerea*) were observed along the edges of the tidal gut, and spring peepers (*Pseudacris crucifer*) were heard calling along ditches. Fowler's toads (*Bufo woodhousei fowleri*) were observed on several occasions, including young of year. Painted turtles (*Chrysemys picta*) were observed in the tidal gut, along with single mud turtles (*Kinsosternon subrubrum*) and snapping turtles (*Chelydra serpentina*). Black rat snakes (*Elaphe obsoleta*) were observed on several occasions, as was a garter snake

(*Thamnophis sirtalis*). A single five-lined skink (*Eumeces fasciatus*) was observed in the tidal gut forest buffer.

The most significant herptile sighting was the close encounter with a copperhead (*Agkistrodon contortrix*) snake on June 28, 2005 by the author and Bill Sipple near the northwestern corner of the site. The copperhead is generally well distributed in the state of Maryland, with exception of the mid-Eastern Shore (Harris 1975, White and White 2002). Unfortunately this observation was not photo-documented, but the sighting was reported to DNR Heritage herptile specialist Scott Smith in writing.

Birds

Birds utilize an extremely wide range of habitats, and species assemblages can vary greatly over time, due to migratory behavior and their inherent mobility. The variety of habitats on this site provide food, cover, and breeding habitat suitable for a number of generalist bird species. Water-dependent bird habitat is provided in the tidal gut, and to a lesser extent in the larger ditches and the gravel pit pond.

Birds of scrublands and edges are most suited to this site, with agricultural operations providing additional food sources. These agricultural operations may also attract and provide food for migratory waterfowl and other game birds. Hedgerows provide cover and food for scrubland species and ground-oriented game birds such as pheasants and quail. Grassland-nesting species may also find suitable habitat in the old field and open wetland habitats.

Habitat for forest-dwelling species is extremely limited on the site, with species of young forests and forest edges most suited to the available habitat. However, there are larger blocks of forest located immediately adjacent to the northwestern portions of the site that provide such habitat.

Notable bird sightings included common yet numerous waterfowl species on the Nanticoke, wild turkeys (*Meleagris gallopavo*) foraging in the agricultural fields, a red-shouldered hawk (*Buteo lineatus*) apparently protecting a nest along the western forest edge, northern harriers (*Circus cyaneus*) foraging over the Nanticoke marshes and adjacent agriculutral fields, and frequent observations of bald eagles (*Haliaeetus leucocephalus*) overhead. A green heron (*Butorides striatus*) was observed foraging in the gravel pit pond on several occasions, and two partially constructed nests were observed in the sweetgum saplings within the pond itself.

The bald eagle deserves special consideration due to its state and federal Threatened status. Up to four individuals were sighted at one time, with most sightings occurring over the Nanticoke or its marshes. Individuals occasionally overflew the site, but no direct foraging activities were observed. One large southern red oak bordering the Nanticoke marsh served as a regular perching location for up to two eagles at one time. Numerous muskrat, turtle, and snake carcasses were observed under this tree, which may be remnants from eagle feeding, or possibly from red foxes that have burrowed

extensively in this particular area. There were no signs of nest-building activities in this tree or any other suitable large trees adjacent to the Nanticoke, but this tree could be potentially utilized for nesting in the future.

Mammals

On-site habitat is suitable for a number of mammal species common to the area. Typical farmland mammals such as white-tailed deer (*Odocoileus virginianus*), red foxes (*Vulpes vulpes*), groundhogs (*Marmota monax*), cottontail rabbits (*Sylvilagus floridanus*), and various species of small rodents, shrews, and moles are likely to be present throughout the site in open areas, hedgerows, and along forest edges. Forest dwellers such as squirrels and forest-dwelling small mammals are likely to be present in limited numbers in the northwestern forest, along the tidal gut forest, and along the edges of off-site forest.

Dorchester County and surrounding areas of the eastern shore of Maryland are unique in that they support sustaining populations of the sika deer (*Cervus nippon*), a deer introduced to the area from Japan. This is a smaller deer than the native whitetail, and appears to be particularly well-suited to the densely vegetated wetland habitats of the lower eastern shore. Although habitat on-site is limited by the large expanses of agricultural land on this site, suitable habitat does exist along the tidal gut and one was flushed from the gravel pit pond on the northwestern corner of the site.

Habitat is present for water-dependent mammals such as beaver (*Castor canadensis*) or muskrat (*Odantra zibethicus*) along the tidal gut and in adjacent wetlands. Muskrats were not directly observed, but lodges and feeding evidence are evident throughout the Nanticoke marshes and the lower tidal gut. River otter (*Lutra canadensis*) also likely occur along the Nanticoke River and its tributaries.

Various species of bats are likely to occur on-site, although their occurrence may be temporary and change with the occurrence of insect prey and also with the season. Additional mammal sightings included white-tailed deer, cottontail rabbit, and groundhog, with sign of raccoon (*Procyon lotor*) observed.

One mammal of particular concern in this region is the state and federally endangered Delmarva fox squirrel (*Sciurus niger cinereus*), which is found in relatively high numbers in Dorchester County. This subspecies prefers mature, open woodlands, and therefore this site is very limited in potential habitat. The only potentially suitable habitat occurs at the far northwestern corner of the site in mature forested wetland. Suitable habitat may occur, however, in the mature forests adjacent to this area and the southern portion of the site.

EXISTING CONSERVATION PRIORITIES

This section will summarize the current state of knowledge in regard to existing conservation priorities on this site. These are existing features on or adjacent to the site with high conservation value and regulatory implications. Included in this discussion are rare, threatened, and endangered (RTE) species and communities, aquatic and wetland resources, and regulatory buffers. Proposed additional conservation priorities and management options are discussed in the following section.

DNR Heritage Records

Several requests for information were made to the Maryland Department of Natural Resources (DNR) Wildlife & Heritage Division for information pertaining to RTE species occurrences on or in the immediate vicinity of the site. An initial request was made by The Conservation Fund in 2001 for the Phillips farm as part of the initial ecological assessment work for that tract. The resulting letter and information provided as part of that request is provided in Appendix D. There were no RTE occurrences noted in the DNR database for the Phillips farm itself, but several species were noted from surrounding areas, including the nearby Mill Creek Natural Heritage Area (NHA). A list of RTE species recorded for the Mardela Springs USGS topo quad on which the site is included was also provided as part of this response.

An additional request was made of DNR Heritage in 2005 to include an observation search for the Legg farm tract, any recently recorded observations for the Phillips farm, and additional information on the Mill Creek NHA. In the DNR response letter, no additional information was provided for the Philips farm, but additional information was provided on the Legg farm and the Mill Creek NHA. A copy of this response is also provided in Appendix D with the enclosed additional DNR database information on the Mill Creek NHA.

The Mill Creek NHA was designated by DNR as an exemplary example of high-quality marsh along the Nanticoke River with confirmed heritage elements. The boundaries of this NHA extend from Mill Creek to the south of the site along the northwest side of the Nanticoke River with its upper terminus at the Legg farm portion of the site. On-site the designated boundaries of the Mill Creek NHA include all of the Nanticoke marsh habitat as designated in this assessment, including the entire Nanticoke marsh system up to the upland interface and the lowest portion of the tidal gut up to the causeway. The Mill Creek NHA does not extend upstream of the causeway in the tidal gut or include the sandy beach or northeastern tidal gut habitats on-site.

According to the latest DNR Heritage correspondence, The Mill Creek NHA is known to support populations of two state listed plant species, but not necessarily on this site. These species are marsh wild senna (*Chaemecrista fasciculata* var. *macrosperma*), a variety of the common partridge pea, which is ranked as highly state rare (S1) with a protective status of endangered, and spongy lophotocarpus (*Lophotocarpus calycina*), ranked state rare (S2) with no protective status.

Two other state-listed plant species are known to occur in the vicinity of the site, but not necessarily within the NHA. These are shoreline sedge (*Carex hyalinolepis*), ranked S2 with no protective status, and a tickseed sunflower (*Bidens coronata*), ranked S2S3 with no protective status. In addition to these plant species, the state rare (S2) redbelly water snake (*Nerodia erythrogaster erythrogaster*) has also been reported in the vicinity of the NHA and the site.

RTE Plant Species

A primary objective of the plant community and RTE plant species survey that was conducted in 2005 was to assess the occurrences and distributions of plant species on the site, with special attention to RTE species. Initial fieldwork took place over three separate seasonal surveys, with additional fieldwork completed along with other tasks on-site. Although initial fieldwork has been completed, many pressed specimens await identification, and may require expert determinations and verification from widespread academic institutions. Although all results are not yet available, a substantial amount of preliminary information has been accumulated in regard to plant occurrences and distributions on-site and can be initially shared in this preliminary assessment report.

Further detailed analysis of plant specimens may yield additional RTE species, as may future fieldwork. The failure to locate these or other listed species is not a guarantee that they do not exist on-site, but does lower the probability that they may be found in the near future. There is also the potential for future colonization of appropriate habitats on-site, especially by those species known to occur in the immediate vicinity.

According to personal communications with Jason Harrison with DNR Heritage, the shoreline sedge and spongy lophotocarpus populations within the Mill Creek NHA are located near the mouth of Mill Creek some distance south of the site. This is confirmed by Bill Sipple in his book Days Afield (1999). Thorough searching of the appropriate habitats along the Nanticoke River and its marshes and the lower tidal gut failed to locate any specimens of these species.

The state endangered marsh wild senna was also searched for diligently in the same habitats and was not located. Partridge pea (*Chaemecrista fasciculata*) was observed in several locations, primarily along ditches, and examined in detail, but did not conform with any of the distinct characteristics of var. *macropserma*.

The tickseed sunflower species *Bidens coronata* was confirmed for the site. This species was found primarily as an extensive subdominant in the Nanticoke marshes within the boundaries of the Mill Creek NHA, but was also found in small numbers outside of the NHA boundaries in the lower tidal gut and the northeastern tidal gut. This species can be difficult to separate from the highly state rare (S1) and state endangered *Bidens mitis*, and collected specimens and photographs will be sent to the appropriate experts for confirmation.

In addition to those species listed by DNR Heritage as occurring in the immediate vicinity of the site, several other state-listed species have been confirmed for the site during the 2005 plant community survey. These species were discussed briefly along with the habitat in which they were located. The locations for these species occurrences, including the tickseed sunflower discussed above, are shown on the Ecological Features Map.

Two additional species with state protective status were discovered on-site. The highly state rare (S1) and state endangered velvety sedge (*Carex vestita*) was found at the interface of an agricultural field and the lower tidal gut forest buffer on the northeastern side of the tidal gut. The state rare (S2) and state threatened swamp oats (*Sphenopholis pennsylvanica*) was found in an open area on the northeastern side of the upper tidal gut.

The state rare (S2) wooly sedge (*Carex pellita*) was found in an open forested wetland at the far northwestern corner of the site. The state watchlist (S3) Joor's sedge (*Carex joorii*) was found in a separate area of the same forested wetland on the northwestern corner of the site. The state watchlist (S3) blue lobelia (*Lobelia elongata*) was found scattered in several locations in the Nanticoke marshes.

All of these species are afforded protection under various Maryland regulations pertaining to wetland protection and permitting and the Chesapeake Bay Critical Area regulations, in addition to specific regulations protecting those species with protective status designations of endangered and threatened. Every effort should be made to preserve these species occurrences and their critical habitats.

RTE Animals

Due to the relative scarcity of documented RTE animal occurrences and the increased difficulty in assessing often mobile and secretive animal populations, no specific animal surveys have been conducted. However, general information was collected on the RTE animal species found on the local quad map, and the field biologists conducting the surveys were familiar with the species in question.

The redbelly water snake was noted as occurring in the immediate vicinity of the site in the DNR Heritage response letter. This is a very secretive species that often ranges far from water, and is at its northern range limit in Maryland (White and White 2002, Conant and Collins 1991, Harris 1975). On-site habitats thoroughly searched for plant species are potentially suitable habitats for this species and none were observed. However, direct observation of this species would be unlikely even if it occurred on-site. The conservation of suitable habitats in which this species may occur on-site is mandated by wetland protection regulations at the state and federal levels.

Although the copperhead (*Agkistrodon contortrix*) is not listed in Maryland, it was observed on-site in an area of the Eastern Shore with a curious distribution gap. This sighting and its implications were discussed in greater detail under the Herptile section of

Wildlife Communities. Conservation of the area in which this observation occurred is mandated by wetland protection regulations at the state and federal levels.

Bald eagles (*Heliaeetus leucocephalus*), listed as state and federally threatened, have been observed over the site on numerous occasions, and are relatively common along the Nanticoke River and the area of Blackwater National Wildlife Refuge. The Maryland Breeding Bird Atlas shows no breeding observations in the quadrangle section occupied by the site (Therres, 1996). Although no nests were observed on or in the immediate vicinity of the site, one large southern red oak on the edge of the Nanticoke River marshes is utilized often as a perch. This tree should be preserved with a suitable buffer, and this level of conservation will be mandated for the site by the state wetland buffer and critical area buffer regulations.

The state and federally threatened Delmarva fox squirrel (*Sciurus niger cinereus*) is not documented from the site or its immediate surroundings, according to the DNR Heritage database search, but the site is within the general known range of this species. This large squirrel is known to favor mature open woodlands, a habitat which is basically absent from the site. The northwestern wetland forest may provide suitable habitat for this species, but this limited potential habitat will be preserved due to regulatory restrictions. Adjacent forests to the west may provide suitable habitat for this species and should be adequately buffered.

Natural Heritage Areas

The Mill Creek Natural Heritage Area (NHA) extends onto the site, encompassing the Nanticoke marshes along the southeastern portion of the site and the lower portion of the tidal gut up to the existing causeway. The marsh was designated as a NHA as an example of high quality tidal freshwater/low salinity marshland, and for its populations of state-listed species. Two primary ecological communities are listed for the NHA, a Tidal Freshwater Mixed Community and a Tidal Mudflat Community. The tidal freshwater marsh strongly dominates that portion of the NHA adjacent to the site, with very limited tidal mudflats along the outer marsh edge and lower tidal creeks. Non-tidal fringe wetlands are also mentioned in the ecological significance discussion for the NHA and occur along the upland interface. See the DNR Heritage correspondence in Appendix D for more information.

This exemplary natural community deserves the greatest extent of conservation possible, and such conservation will be mandated by applicable federal, state, and local laws and regulation. As noted in the NHA summary discussion, the freshwater inputs to this system are critical components of its ecological integrity and must be preserved to ensure long-term function.

Tidal and Non-tidal Waters and Wetlands and Buffers

As discussed often in this report, extensive tidal and non-tidal waters and wetlands occur on and adjacent to the site. These waters and wetlands are regulated by federal, state, and local governments under a wide variety of laws and regulations.

Of special note is the designation of the Nanticoke Natural Heritage Area wetlands as a Wetland of Special State Concern (WSSC). This designation confers additional protections and buffering requirements above and beyond those required for most wetlands regulated by the state.

All jurisdictional waters and wetlands on and adjacent to the site are subject to state buffer requirements. These regulatory buffers are mandated to provide water quality and habitat benefits to receiving waters and wetlands. Under the current agricultural use of the site, buffers are practically non-existent and have been for decades. Agricultural uses remain exempt from most buffer regulations.

Any land use conversion of the site will require the establishment of buffers from all jurisdictional waters and wetlands. There are currently no buffers mandated for waters and wetlands under federal law. Wetland buffers of 25 feet are mandated by MDE for all non-tidal wetlands under the Maryland Non-tidal Wetland Protection Act and subsequent regulations, with no overall state mandate for stream buffers.

Tidal waters and wetlands are protected by buffers mandated under the Chesapeake Bay Critical Area regulations. Tidal water and wetland buffers can range from a minimum 100 feet to a maximum 300 feet. Perennial streams are also afforded 100-foot buffers under the CBCA regulations, with a 25-foot non-tidal wetland buffer similar to the overall state wetland buffer also mandated.

Historic Waterfowl Concentration Areas

The Nanticoke River adjacent to the site is a known historic waterfowl concentration area. This location is ideal habitat for a variety of waterfowl and other water-dependent bird species due to its high productivity and extensive fringing marshes. Waterfowl hunting is prevalent in the area, with several waterfowl hunting blinds located in the Nanticoke marshes on-site.

The conservation of these areas is given special consideration under the CBCA regulations, especially in regard to water-dependent facilities. The ecological integrity of waterfowl concentration areas depend heavily on surrounding land uses in addition to the open water and marsh habitats themselves, and consideration of waterfowl habitat requirements is essential in any proposed land use conversions.

Habitat Protection Areas

Habitat Protection Areas (HPA) are elements of the Chesapeake Bay Critical Areas regulations that are designed to afford additional protections to habitats of significance. The Mill Creek NHA is a designated HPA to protect the extensive Nanticoke marshes and their supported heritage elements.

CBCA regulations also impose HPA designations around RTE species and waters and wetlands resources. The extent of waters and wetlands HPA boundaries are determined by the buffers discussed above. RTE location HPAs are determined on a case by case basis, but generally include the extent of the RTE species occurrence and a 100 foot buffer. All of these HPA areas on-site deserve full protection.

Conservation Priorities

The ecological and regulatory elements discussed in the above sections deserve the highest level of conservation priority from both ecological and regulatory perspectives. The bases for the regulation of these elements are based on sound ecological science and conservation practices. The protection and conservation of these resources are important for biodiversity, water quality, and aesthetic reasons and essential to maintaining a properly functioning local and regional ecosystem.

In addition to those conservation priorities listed above, there are several other unique ecological elements on-site that deserve conservation consideration. The most unique area from an ecological perspective on this site not discussed separately above is the gravel pit pond and surrounding berms. Abandoned gravel pits are known to commonly support rare or unusual plant species due to their harsh environment. However, this small gravel pit differs from the typical gravel pit in its small size and high water table that has flooded most of the exposed gravels. This gravel pit is also likely to be higher in nutrients than most due to its immediate proximity to active crop fields that are certainly fertilized.

Although this gravel pit may not be typical, it does possess unique habitat features. The ponded area is rather isolated and certainly attracts waterfowl and other water birds, which is important alone, but also increases the possibility of rare or unusual plant propagule introduction. The gravel pit pond also provides fresh water for wildlife usage, and a valuable breeding ground for local amphibians and reptiles. Finally, the very dry berms surrounding the ponded area do provide more typical gravel pit conditions of low nutrients and extreme droughty conditions that could potentially support rare or unusual plant species.

Although very limited in extent, the narrow hedgerow with mature trees near the head of the tidal gut is a unique feature in the relatively homogenous surrounding open agricultural landscape. Hedgerows are disappearing features in the modern agricultural landscape and should be preserved when possible.

FUTURE CONSERVATION PRIORITIES AND MANAGEMENT

Conservation and management opportunities exist to enhance and ensure the ecological value of this site and surrounding areas. While the site currently supports a wide variety of habitats and heritage elements, the landscape and its ecological features have been manipulated to a great extent since pre-settlement times. These significant landscape alterations include deforestation, hydrologic modifications, and intensive agricultural operations.

Current regulations prohibit or limit the extent of these types of landscape alterations. However, it appears that nearly all of the currently evident landscape alterations have occurred prior to the onset of applicable regulations. These alterations are therefore "grandfathered" and are considered existing normal circumstances under the regulations. Any land use conversion requiring regulatory review and approval will mandate the imposition of many environmental restrictions, including waters and wetlands protection, protection of RTE species and other heritage elements, and the establishment of buffers around water and wetlands and other heritage elements.

The proposed residential development of the site will initiate regulatory review of the site and the imposition of additional environmental controls above and beyond those currently governing the use of the site. The cessation of agricultural activities on all or most of the site will eliminate some existing environmental degradation factors, but will pose other challenges. A variety of techniques will need to be explored to minimize the anticipated impacts, and monitoring and adaptive management should be implemented to ensure performance. Stormwater management will probably be the single most important mitigation item to minimize the impact of any increases in impervious surfaces. These issues will be explored in much greater detail in future analyses.

Although land use conversion will initiate a series of regulatory controls and environmental improvements, additional voluntary measures for additional conservation enhancement are plentiful on-site. It is acknowledged that the ultimate conservation plan for this site would be full preservation and habitat restoration. However, this is not judged to be realistic under current circumstances. Therefore, additional conservation measures are provided below which can provide significant ecological value to the site and region while allowing for appropriate utilization of the site.

Buffer Enhancements

The establishment of buffers around the waters and wetlands on the site will be mandated with any land use conversion. However, planting and management of these buffers is often not mandated. Since much of the future area of buffers on the site is currently active agricultural land, revegetation efforts will be critical to establishing effective and appropriate buffers. Simple abandonment of the agricultural activities may be appropriate if natural regeneration with indigenous species occurs, but it is likely that these areas will become dominated by agricultural weeds and/or exotic invasive species.

A comprehensive revegetation and management plan should be developed for all buffer areas to ensure appropriate vegetative communities develop.

The establishment of buffers around the waters and wetlands will significantly increase the amount of available habitat for terrestrial species and provide additional protection and ancillary habitat for aquatic and semi-aquatic species. These buffers will also provide significant increases in habitat connectivity between the larger habitat patches on and adjacent to the site. Increases in the width of these riparian corridors should be explored to ensure the greatest utility for a variety of species.

Wildlife Corridors / Greenbelt

The establishment of additional non-riparian wildlife corridors should also be explored, especially between the site and adjacent forest to the northwest of the site. A forested band along the western property boundary would provide an important missing linkage between separate forest patches.

Such a forested band would also serve as an effective greenbelt separating the site from continuing agricultural and forested lands to the south and west. This greenbelt will buffer potentially incompatible uses visually, with eventual screening of light and airborne pollution if densely forested.

Wetland Restoration

There are large areas of potential Prior Converted Wetlands on this site that once were hydric soil areas that supported wetlands. Some of these areas should be assessed for their potential to be restored to wetland conditions either for habitat restoration, or perhaps as mitigation for on-site or nearby impacts. Any wetland restoration on-site should maximize habitat for wetland-dependent species. Seasonally flooded vernal pool areas can be incorporated into the design to provide additional breeding habitat for many amphibian species, and open water features can be designed to maximize breeding opportunities for wetland-dependent bird species.

Most of the areas of Failsington sandy loam on-site are well drained and could prove difficult to restore due to their sandy texture. The large areas of Othello silt loam on the southwestern portion of the site are potentially suitable for restoration, but could require extensive ditch work and grading to restore adequate hydrologic conditions. The depressed area of Pone mucky loam on the southwestern portion of the site has excellent restoration potential. Relatively simple restoration approaches may be utilized to restore lost wetland functions, primarily involving the blockage of the ditch draining groundwater from the area. Potential exists for an open water pond to also be part of the restoration and enhancement of this area.

Tidal Gut Restoration

The initial ecological assessment for the Phillips farm included a discussion of the potential of restoring pre-settlement tidal flows into the tidal gut. This linear wetland system is currently constricted at three primary man-made points along its length – the lower causeway, the culvert under Vienna-Henrys Crossroads Road, and the old wooden bridge and associated side fills above the roadway culvert. The upper culvert marking the apparent upper end of tidal influence is located on a narrow ditch and less significant.

The removal of these constrictions or modification to allow greater tidal exchange was initially viewed as a potential for restoring pre-settlement conditions. However, these constrictions have been in place for long periods and the resulting hydrologic regime has shaped the current plant communities that have developed between each primary constriction. The restoration of pre-existing tidal flows and salinity gradients could lead to significant shifts in plant species composition and community structure, with a concurrent disruption to resident wildlife. The plant community assessment fieldwork, although not yet completely analyzed, showed a general increase in plant diversity in an upstream direction, with distinct assemblages present along existing water level and tidal gradients.

The preliminary determination at this stage is that the preservation of the existing hydrologic conditions, including the existing culverts and constrictions, is preferable to restoring unimpeded tidal flows in the tidal gut. The current hydrologic processes have been in place for many years and have resulted in diverse, productive wetland communities that support RTE species. Additional ecological and hydrologic analyses may be necessary to provide definitive recommendations.

Exotic Invasive Plant Species

Exotic invasive species are not a significant threat at this time in many areas of the site, but are present in various locations in varying densities. Control of these exotic invasive species is recommended at the earliest stage to control their effects on native plant communities. Initial infestations of highly problematic species should take first priority. These include an initial infestation of Oriental bittersweet at an old dump site near the southern end of the causeway, and wild potato vine along the upper edges of the tidal gut on both sides of Vienna-Henrys Crossroads Road.

Other exotic invasives worthy of control include Japanese honeysuckle along many edges and ditches, white poplar, English ivy, and daylilies along the northeastern tidal gut, and scattered patches of the exotic marsh dayflower (*Murdannia keisak*) in marshes along the Nanticoke. Although manual removal may be possible in some areas, carefully targeted applications of appropriate herbicides is often the most economically feasible and effective method of control.

Common reed, also commonly referred to by its generic name, Phragmites, is prevalent in several patches throughout the site, both in non-tidal and tidal habitats. Although there is

some debate in regard to the nativity of this species, it is generally believed that the aggressive, monoculture-forming type is of exotic origin, and removal of this species is encouraged by the resource agencies. Carefully applied herbicides are the best solution due to its vigorous root stocks. Control of the common reed will allow for the regeneration of a more diverse native tidal marsh community in these areas.

Heritage Element Management

Specific management plans should be developed for each heritage element on-site, including the Natural Heritage Area as a whole. Individual RTE species should be monitored and adaptive management plans put into place should threats develop. Active management of some species may not conform exactly with general management restrictions for regulated resources, and regulatory agency coordination will be essential.

The field-edge population of the state endangered *Carex vestita* is an excellent example where active suppression of woody and other competing vegetation may be necessary to ensure the continued existence of the population. With the establishment of extensive restored habitats in regulatory buffer areas, opportunities may exist for the propagation and out-planting of this and other local RTE species on-site.

Additional Opportunities

The lowest priorities from an ecological conservation perspective are the non-wetland agricultural fields and farmstead areas. These areas are man-made landscapes of generally low species diversity, high exotic species dominance, and low wildlife value. However, these areas have intrinsic human and aesthetic value, and may deserve conservation for these purposes.

Cultural resources are limited on this site, but additional research may reveal potential historic or archaeological resources that deserve further exploration. An interesting stone marker exists at the southern corner of the tidal gut confluence with the Nanticoke with the inscription 'HxH 1786'. This stone was recently uncovered by the buffer clearing and may have gone unnoticed for many years due to extreme overgrowth. Additional analysis by a local historical researcher is recommended.

Finally, numerous opportunities exist on-site for supporting educational, research, and passive recreational activities. Local and regional educational and non-profit institutions can be sought out to engage in research and conservation activities on the site and in the surrounding natural areas. Passive recreational opportunities, including interpretive trail systems, can also be utilized to allow for public involvement in these educational and research activities.

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1998 Dorchester Image
660 0 660 1320 1980 2640 3300 Feet
N


P&M 61/6
P 16
MAP 66 - P.28
MAP 66 - P 16
WAYNE S. PHILLIPS
242/ 229
67.97A
P 8
P 13
P 3
P 2

ABRAHAM A. McDOWELL &
RUTH & JAMES McDOWELL
PLC/ 279/ 565

ROBERT H. & GENE C. SPEAR
MLB/ 358/ 447

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PLC/242/229

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VIENNA
PLC/ 221/ 687

ENJO ISLAND ROAD

LAYTON FARM, LLC
MLB/ 594/ 271
MLB/ 653/ 718

COMMISSIONERS OF
VIENNA
PLC/ 220/ 156

GRAPHIC SCALE

0 200 400 800

(IN FEET)

1 inch = 400 ft.

NOW OR FORMERLY THE LANDS OF
THE COMMISSIONERS OF VIENNA
242/229

ELLIOTT ISLAND ROAD

GUY S. PHILLIPS
257/477
145.31 ACRES±

GRAVEL ROAD

GRAVEL ROAD

GRAVEL ROAD

NOW OR FORMERLY
THE LANDS OF
JEAN O. AND
FLEMING OUTTEN
PLC/208/47

NOW OR FORMERLY THE LANDS OF
OUTTEN FARMS LTD. PARTNERSHIP
256/162

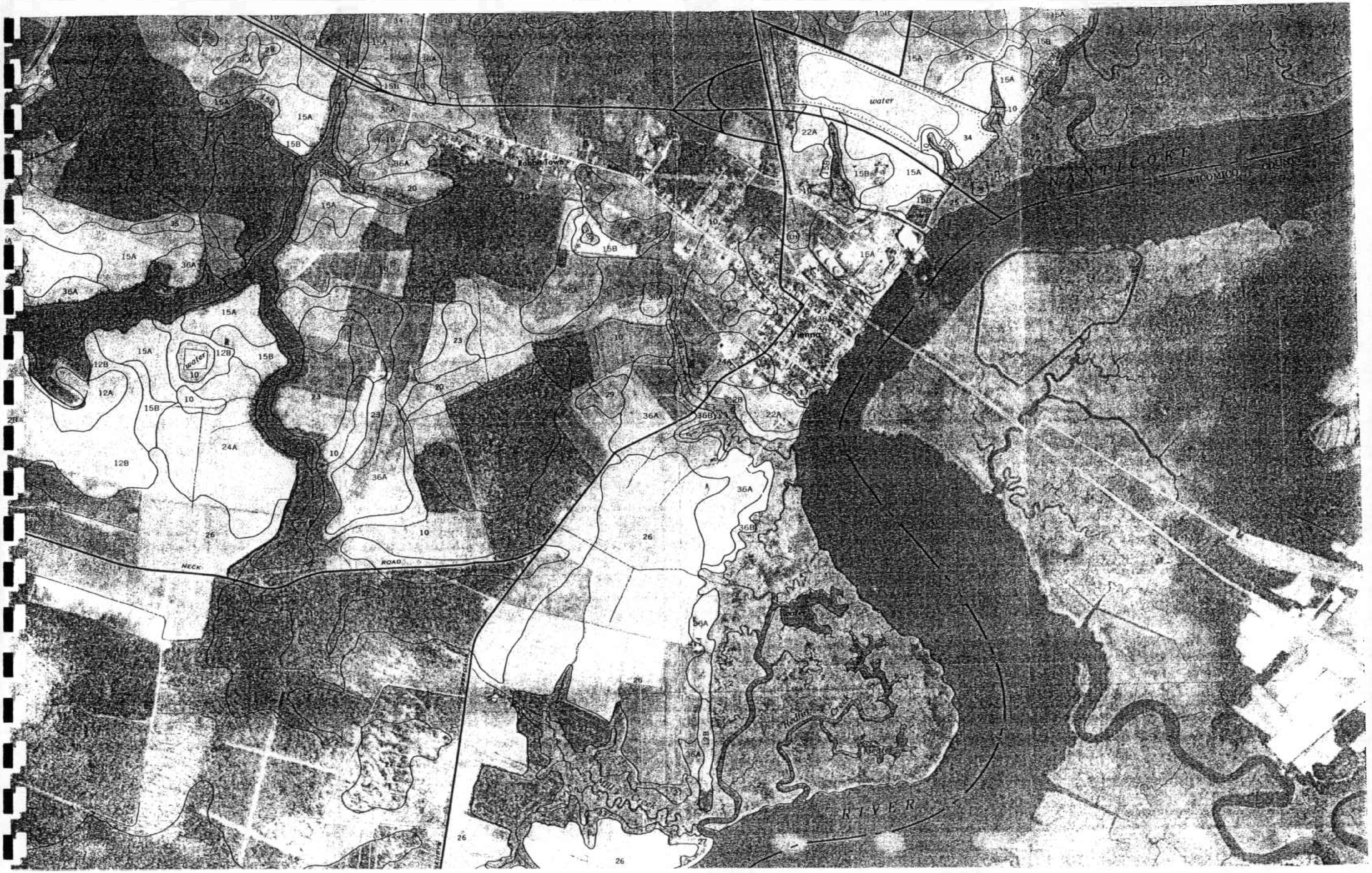
NANTICOKE RIVER

GRAPHIC SCALE

0 150 300 600

(IN FEET)

1 inch = 300 ft.


NANTICOKE
WICOMICO COUNTY
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ROAD

use of this map is limited to illustrative purposes only

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Maryland Geo
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Base map from Army Map Ser
Culture partly revised, 1967

5 0 5

Maryland Geological Survey

Coastal Plain Rocks and Sediments

Geologic Map Legends

contact: Jerry Baum (gbaum@mgs.md.gov)

The information contained on this page was adapted from Maryland Geological Survey's ***Geologic Map of Maryland (1968)***. This information reflects geologic interpretations from over 20 years ago and do not necessarily represent an accurate interpretation of currently accepted geologic theory. We present this information for historic purposes only. Do not use this information for anything other than illustrative purposes. When a corrected and updated geologic map of Maryland is available you will see a notification on our web site.

QUATERNARY

PLEISTOCENE TO RECENT

Qcu

Lowland Deposits
Undifferentiated gray to buff sand and gravel, gray to brown lignitic silt and clay, occasional boulders, and rare shell beds.
Surficial deposits occur as intercalated fluvial sands and marsh muds (e.g. in upstream floodplains of the Wicomico and Nanticoke Rivers), well sorted, stabilized sand dunes (e.g. eastern Wicomico County), shell-bearing estuarine clays and silts (e.g. lower Dorchester County and Pocomoke River basin of Worcester County), and beach zone sands (e.g. Fenwick and Assateague Islands). Wisconsin to Holocene in age.
Subsurface deposits of pre-Wisconsin age consist of buff to reddish-brown sand and gravel locally incised into Miocene sediments (e.g. Salisbury area), estuarine to marine white to gray sands, and gray to blue, shell-bearing clays (e.g. Worcester County).

Ql

Lowland Deposits
Gravel, sand, silt and clay. Medium- to coarse-grained sand and gravel; cobbles and boulders near base; commonly contains reworked Eocene glauconite; varicolored silts and clays; brown to dark gray lignitic silty clay; contains estuarine to marine fauna in some areas (includes in part Pamlico, Talbot, Wicomico and Sunderland Formations of earlier reports); thickness 0 to 150 feet.

Qu

Upland Deposits (Eastern Shore)
Gravel, sand, silt, and clay. Mostly cross-bedded, poorly sorted, medium- to coarse-grained white to red sand and gravel, boulders near base; minor pink and yellow silts and clays; (Wicomico Formation of earlier reports); thickness 0 to90 feet, locally thicker in paleochannels.

PLIOCENE (?)

Q1

Upland Deposits (Western Shore)
Gravel and sand, commonly orang-brown, locally limonite-cemented; minor silt and red, white, or gray clay; (includes Brandywine, Bryn Mawr, nad Sunderland Formations of earlier reports); lower gravel member and upper loam member in Southern Maryland; thickness 0 to 50 feet.

subsurface **Yorktown Formation**

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Index to Map Units

ABRAHAM A. McDOWELL &
RUTH & JAMES McDOWELL
PLC/ 279/ 565

CAREX PELLITA (S2)

NORTHERN FOREST

CAREX JOORII (S3)

GRAVEL PIT POND

ROBERT H. & GENE C. SPEAR
MLB/ 358/ 447

GRAPHIC SCALE

NORTHERN DITCH

AG

MATURE HEDGEROW

PINE FOREST (OFF-SITE)

OLD FIELD (CREP)

NORTH WESTERN DITCH

WAYNE S. PHILLIPS
PLC/ 212/ 229

BOARD OF EDUCATION
FOR DORCHESTER
COUNTY
99/75

MIXED FOREST (OFF-SITE)

CULVERTS

JAMES L. &
CAROLE M. SPEAR
MLB/ 459/ 732

UPPER TIDAL GUT

NORTH EASTERN DITCH

OLD FIELD (CREP)

SPHENOPHOLIS PENSYLVANICA (S2,T)

OLD BRIDGE

FARMSTEAD

COMMISSIONERS OF
VIENNA

WESTERN DITCH

ELLIOTT ISLAND ROAD

CULVERT

LAYTEN FARM, LLC

COMMISSIONERS OF
VIENNA

VIENNA VILLAGE - PHILLIPS FARM
ECOLOGICAL FEATURES MAP

AG - AGRICULTURAL FIELDS
HR - HEDGEROWS
---- USGS MAPPED STREAMS
—·—·— PERENNIAL DITCHES / STREAMS
—·—·— INTERMITTENT DITCHES
WETLANDS
POTENTIAL WETLANDS

NOW OR FORMERLY THE LANDS OF
THE COMMISSIONERS OF VIENNA
242/228

ELLIOTT ISLAND ROAD

GLEN S. PHILLIPS
257/7
45.5 ACRES±

WESTERN DITCH

SOUTH WESTERN DITCH

SOUTHERN DITCH

Ag

CAREX VESTITA (S1, E)

LOWER TIDAL GUT

CAUSEWAY

TWIN CULVERTS

NORTH-EASTERN TIDAL GUT

FARM STEAD

BIDENS CORONATA (S2)

SANDY BEACH

HxH 1786 STONE

BIDENS CORONATA (S2)

LOBELIA ELONGATA (S3)

NANTICOKE MARSH / MILL RUN NHA

NANTICOKE RIVER

NOW OR FORMERLY THE LANDS OF
OUTTEN FARMS LTD. PARTNERSHIP
256/182

VIENNA VILLAGE – LEGG FARM
ECOLOGICAL FEATURES MAP

Ag – AGRICULTURAL FIELDS
– – – – USGS MAPPED STREAMS
—··— PERENNIAL DITCHES / STREAMS
—·—·— INTERMITTENT / EPHEMERAL DITCHES
WETLANDS
POTENTIAL WETLANDS

GRAPHIC SCALE
0 150 300 600
(IN FEET)
1 inch = 300 ft

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor

C. Ronald Franks
Secretary

W. P. Jensen
Deputy Secretary

Maryland Department of Natural Resources
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

August 12, 2003

Ms. Sara Elliott
The Conservation Fund
1800 North Kent Street, Suite 1120
Arlington, VA 22209-2156

RE: Environmental Review for Property in and adjacent to Town of Vienna, Dorchester County, Maryland.

Dear Ms. Elliott:

The Wildlife and Heritage Service's Natural Heritage database indicates that there is a Natural Heritage Area (NHA) known as Mill Creek NHA known that appears to overlap with your study area. Activities within NHAs are regulated so that the structure and species composition of the area are maintained. Please see the attached map for the approximate boundaries of this NHA.

The Wildlife and Heritage Service has the following recent records for species of concern known to occur within the vicinity of the project site. These species could potentially occur on the study area itself, especially in areas of appropriate habitat. Most of these records area associated with the NHA:

Scientific Name	Common Name	State Status
Chamaecrista fasciculata var. *macrosperma*	Marsh Wild Senna	Endangered
Sagittaria calycina	Spongy Lophotocarpus	Rare
Carex hyanlinolepis	Shoreline Sedge	Rare
Bidens coronata	Tickseed Sunflower	Rare

Also, the Delmarva fox squirrel, a state and federally listed endangered species, is known to occur on or in the immediate vicinity of the property. Protection of endangered species habitat is required within the Critical Area. Delmarva fox squirrel habitat is generally characterized as forests with relatively mature trees, either hardwoods or loblolly pine, with a relatively sparse understory. The following guidelines are routinely provided to planners and developers for the conservation of Delmarva Fox Squirrel habitat:

If your proposed activities do not occur within the forested areas on the property, then Delmarva fox squirrel habitat will not be impacted. However, if development in the forested areas or timber harvesting is being planned, the following should be considered:

1. As much contiguous forested acreage as possible should be retained.

2. If clearing is necessary, at least 25% of the suitable forested area should remain unaltered or a minimum of 10 acres whichever is greater.

3. This unaltered Delmarva fox squirrel habitat should be retained as a contiguous forested tract, not as small disjunct parcels.

4. Required forested buffers, such as buffers along streams or nontidal wetlands, should be expanded to at least 100 feet and preferably 300 feet in width.

5. Retention of mast producing trees such as oaks, hickories and beech is encouraged.

In addition, the wetland on site associated with Mill Creek is designated in state regulations as a Wetland of Special State Concern (WSSC) and regulated by Maryland Department of the Environment. Your project may need to be reviewed by Maryland Department of the Environment for any necessary wetland permits associated with the WSSC.

Also, the forested area on the project site contains potential Forest Interior Dwelling Bird Habitat. The conservation of this habitat is mandated within the Critical Area and must be addressed by the project plan. The following guidelines are routinely provided to planners and developers for conservation of FIDS habitat:

1. Restrict development to nonforested areas.

2. If forest loss or disturbance is absolutely unavoidable, concentrate or restrict development to the perimeter of the forest (i.e., within 300 feet of the existing forest edge), particularly in thin peninsulas of upland forest less than 300 feet wide.

3. Limit forest removal to the "footprint" of houses and to that which is absolutely necessary for the placement of roads and driveways.

4. Wherever possible, minimize the number and length of driveways and roads.

5. Roads and driveways should be as narrow and short as possible; preferably less than 25 feet long and 15 feet wide.

6. Maintain forest canopy closure over roads and driveways.

7. Maintain forest habitat up to the edges of roads and driveways; do not create or maintain mowed grassy berms.

8. Maintain or create wildlife corridors.

9. Do not remove or disturb forest habitat during April-July, the breeding season for most FIDS. This seasonal restriction may be expanded to February-July if certain early nesting FIDS (e.g., Barred Owl) are present.

10. Afforestation efforts should target (1) riparian or streamside areas that lack woody vegetation, (2) forested riparian areas less than 300 feet, and (3) gaps or peninsulas of nonforested habitat within or adjacent to existing FIDS habitat.

The presence of FIDS habitat can be confirmed by a qualified observer using standardized procedures outlined in the Critical Area Commission's document entitled "A Guide to the Conservation of Forest Interior Dwelling Birds in the Chesapeake Bay Critical Area" dated June 2000.

Finally, the open waters that are adjacent to or part of the site are known historic waterfowl concentration areas. If there is to be any construction of water-dependent facilities a time-of-year restriction on work may be recommended by us.

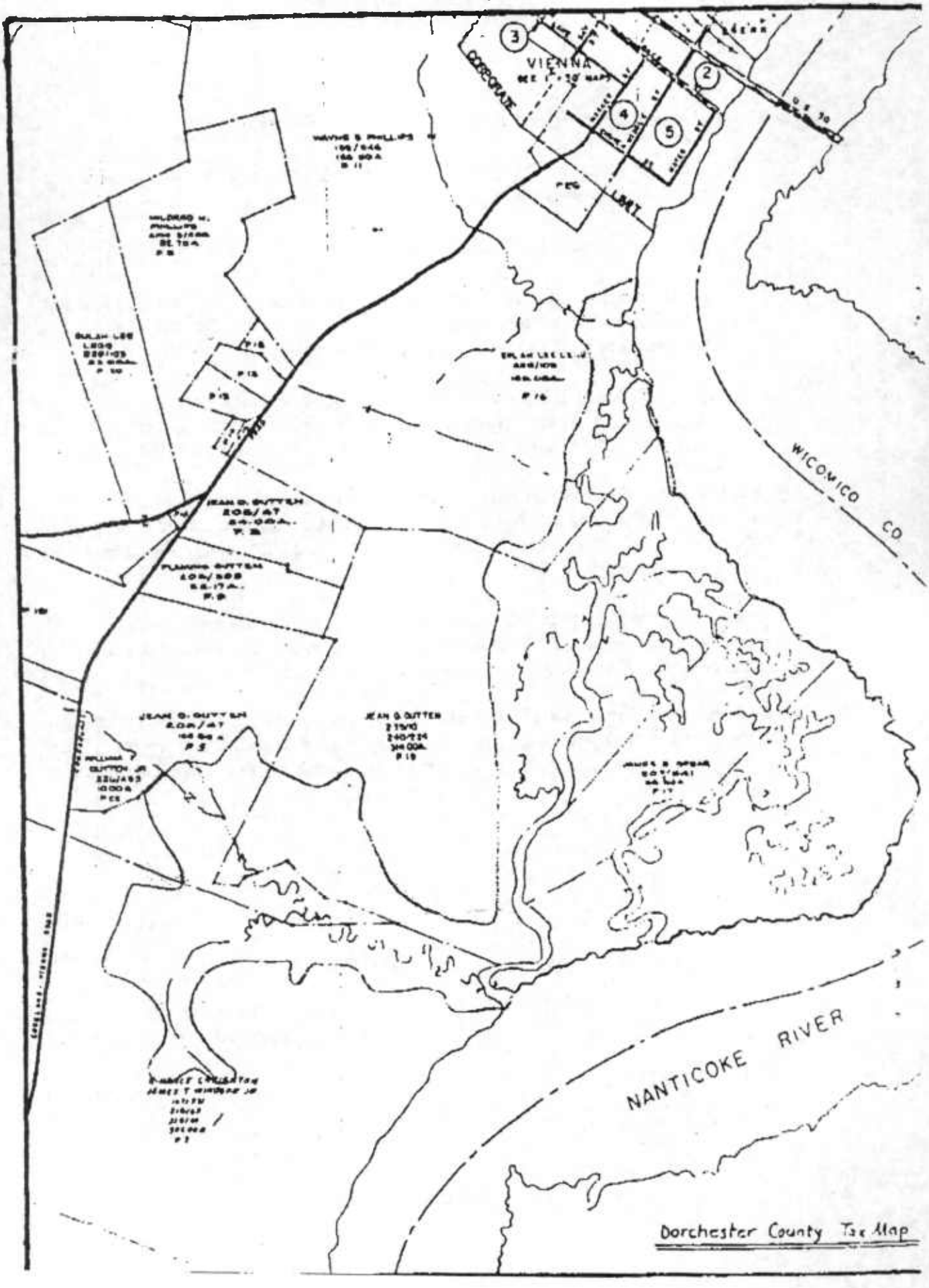
Attached is a listing for all RT&E records known to occur on the Mardela Springs Quad, as requested. Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, feel free to contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne
Environmental Review Coordinator,
Wildlife and Heritage Service
Maryland Department of Natural Resources

ER# 2003.0727.do
Cc: R. Esslinger, CAC
S. A. Smith, DNR
Attachments (2)

Mill Creek NHA- Approximate boundaries



Mardela Springs Quad – RT&E Records from MD Natural Heritage Database
August 12, 2003

Scientific Name	Common Name	State Status	Date
Aeschynomene virginica	Sensitive Joint-vetch	Endangered, also Federally Endangered	1906
Agalinis setacea	Thread-leaved Gerardia	Endangered	1992
Alnus maritima	Seaside Alder	Rare	1976
Ambystoma tigrinum	Eastern Tiger Salamander	Endangered	1933
Ammodramus henslowii	Henslow's Sparrow	Threatened	1987
Aster spectabilis	Showy Aster	Endangered	1906
Bidens coronata	Tickseed Sunflower	Rare	1993
Bidens mitis	Small-fruited Beggar-ticks	Endangered	1996
Carex glaucescens	A Sedge	Endangered	1999
Carex hyalinolepis	Shoreline Sedge	Rare	1993
Carex striatula	Lined Sedge	Rare	1998
Chamaecrista fasciculate var. *macrosperma*	Marsh Wild Senna	Endangered	1996
Cistothorus platensis	Sedge Wren	Threatened	1984
Desmodium rigidum	Rigid Tick-trefoil	Endangered	1993
Desmodium strictum	Stiff Tick-trefoil	Endangered	1995
Desmodium viridiflorum	Velvety Tick-trefoil	Watchlist	1995
Eleocharis rostellata	Beaked Spikerush	Rare	1995
Erianthus contortus	Bent-awn Plumegrass	Threatened	1997
Fraxinus profunda	Pumpkin Ash	Rare	1993
Haliaaetus leucocephalus	Bald Eagle	Threatened, also Federally Threatened	2000
Lampsilis radiata	Eastern Lampmussel	Uncertain	1993
Myrica heterophylla	Evergreen Bayberry	Endangered	1997
Nerodia erythrogaster erythrogaster	Redbelly Water Snake	Rare	1987
Pilea Fontana	Coolwort	Watchlist	1993
Platanthera blephariglottis	White Fringed Orchid	Threatened	2000
Plantanthera cristata	Crested Yellow Orchid	Threatened	1993
Polygala cruciata	Cross-leaved Milkwort	Threatened	2000
Rhynchospora glomerata	Clustered Beakrush	Threatened	1910
Rhynchospora microcephala	Tiny-headed Beakrush	Rare	1987
Rhynchospora torreyana	Torrey's Beakrush	Threatened	2000
Saccharum alopecuroidum	Woolly Beardgrass	Rare	1993
Sagittaria calycina	Spongy Lophotocarpus	Rare	1988
Sagittaria engelmanniana	Engelmann's Arrowhead	Threatened	1925
Sarracenia purpurea	Northern Pitcher-plant	Threatened	1993
Solidago speciosa	Showy Goldenrod	Threatened	1995
Tephrosia spicata	Southern Goat's Rue	Endangered	1995
Trichostema setaceum	Narrow-leaved Bluecurls	Rare	1998

Please note that most bird records are breeding records and that the date shown is the most recent observation date. Watchlist species shown here are only for those that are actively tracked by our program.

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Robert L. Ehrlich, Jr., *Governor*
Michael S. Steele, *Lt. Governor*
C. Ronald Franks, *Secretary*

June 23, 2005

Mr. Jeffrey Wolinski
Consulting Ecologist
38643 Lovettsville, VA 20180

RE: Environmental Review for Legg Farm Tract, Expansion of Town of Vienna, Dorchester County, Maryland.

Dear Mr. Wolinski:

The Wildlife and Heritage Service has determined that the project site overlaps in part with a Natural Heritage Area (NHA) known as Mill Creek NHA. Activities within NHAs are regulated so that the structure and species composition of the area are maintained. Please see the enclosed write-up for further information regarding this Natural Heritage Area. The NHA is known to support:

Scientific Name	Common Name	State Status
Chamaecrista fasciculata var macrosperma	Marsh Wild Sienna	Endangered
Sagittaria calycina	Spongy Lophotocarpus	Rare

In addition, there are records for the following species of concern known to occur within the vicinity of your project site, but not necessarily within the NHA. These species could also occur on your project site, within areas of appropriate habitat. They are:

Scientific Name	Common Name	State Status
Nerodia erythrogaster erythrogaster	Redbelly Water Snake	Rare
Carex hyalinolepis	Shoreline Sedge	Rare
Bidens coronata	Tickseed Sunflower	Rare

We would also like to bring to you attention that a portion of the wetland that overlaps with the project site is designated in state regulations as a Wetland of Special State Concern (WSSC) and regulated by Maryland Department of the Environment. Also, the open waters that are adjacent to or part of the site are known historic waterfowl concentration areas. If there is to be any construction of water-dependent facilities please contact Larry Hindman of the WHS at (410) 221-8838 for further technical assistance regarding waterfowl.

Though there are no known occurrences of endangered Delmarva fox squirrels on the property, your project may need federal approval because the property is within the range of this endangered species. The Delmarva fox squirrel is listed by the federal government as endangered and as such protection for this species comes under federal jurisdiction as well. Federal requirements may differ from ours. To avoid any violations of the federal Endangered Species Act during your project implementation we suggest you consult with Mary Ratnaswamy, U.S. Fish & Wildlife Service, 177 Admiral Cochrane Drive, Annapolis, MD 21401.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER #2005.0785.do
Cc: S.A. Smith, DNR
R. Esslinger, CAC
M. Ratnaswamy, USFWS
Enclosure

Mill Creek Natural Heritage Area
(Critical Area Site DO NHA-21)

County: Dorchester USGS Quad: Mardela Springs

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Mill Creek Natural Heritage Area is an expansive complex of tidal and non-tidal wetlands. About two-thirds of the area is comprised of an "extensive marsh" type along the Nanticoke River. This type of marsh is of similar length and width and is drained by many tidal channels and creeks which have some freshwater input from land. It is occupied by two communities, a Tidal Freshwater Mixed Community and a Tidal Mudflat Community. The Freshwater Mixed Community ls characterized by Giant Cordgrass (Spartina cynosuroides), Wild Rice (Zizania aquatica), Arrow arum (Peltandra virginica), Cutgrass (Leersia oryzoides), Marsh Mallow (Hibiscus moscheutos), Marsh Elder (Iva frutescens), Waterdock (Rumex verticillatus), Switchgrass (Panicum virgatum), and a variety of other species. The Tidal Mudflat Community ls non-vegetated, exposed at low tide, and is characterized by spionid worms, mud snails, razor clams, and bloodworms. Other polychaetes, mollusks, and crustaceans also are present.

The above communities also occur along Mill Creek, a drowned creek valley. Populations of the above plant species segregate generally into zones along the salinity gradlent from head to mouth. Contlguous with the tidal communities are four types of non-tidal wetlands; a seasonally flooded mixed-deciduous wetland, a seasonally flooded scrub/shrub wetland, a seasonally flooded pine-deciduous wetland, and an intermittently flooded pine-deciduous wetland. Portions of the latter have been converted to loblolly pine monocultures.

The Tidal Freshwater Mixed Community is one of the most important marsh types, based on total ecological value. It is among the highest in productivity and wildlife and waterfowl utility, and ls usually closely associated with fish spawning and nursery grounds. This community is also highly valued as a natural shoreline stabilizer and sediment trap for upland runoff. The 3-5 tons of plant biomass produced per acre each year is fully accessible to the estuary. In addition, it supports at least two State-listed species, the Rare ~~Threatened~~ Spongy Lophotocarpus (Sagittaria calycina) and the Endangered Marsh Wild Senna (Cassia fasciculata var. macrosperma). The latter is also a candidate for Federal listing, and the population at Mill Creek is the only one known in the State.

The Mud Flat Community is highly important as foraging area for waterfowl, sport and commercial fishes, and many other species of food web value in the marine ecosystem. It also interacts significantly with adjacent vegetated areas in the cycling of nutrients, and the Mud Flat Community is probably the most important of the three tidal flat communities for nutrient cycling.

The non-tidal wetland communities are part of the same expansive complex. Besides providing plant and wildlife habitat, these wetlands are very important filters for upland runoff, especially when excessive levels of nutrients, pesticides, and sediment occur. Furthermore, they discharge freshwater into contiguous tidal marsh communities and thus contribute to their high productivity and species diversity.

ELEMENT SUMMARY TABLE:

Element	Common Name	Status
Cassia fasciculata var. macrosperma	Marsh Wild Senna	Endangered
Sagittaria calycina Lophotocarpus	Spongy	~~Threatened~~ Rare

OTHER VALUES AND SIGNIFICANCE

Because of the high species diversity and productivity of this wetland complex, waterfowl hunting and fishing are current recreational uses. The area is also valuable for passive recreational activities such as birdwatching.

THREATS AND MANAGEMENT NEEDS:

Primary threats to the Area are excessive nutrient, pesticide, and sediment loading from agricultural land, and timbering of non-tidal wetlands. The former could be reduced by flanking tributaries of Mill Creek with naturally vegetated 25-foot setbacks. Currently, most of the length of these drainage channels are completely lacking in vegetative buffers, although they cross agricultural land. Of special concern are the tidal tributary leading into the head of Mill Creek, which has been ditched and cleared of vegetation, and a sizeable portion of a non-tidal wetland which also has been cleared of vegetation. Proper management of the drainage area of Mill Creek would contribute to better water quality in the Creek as well as in the Nanticoke River, a major tributary of the Chesapeake Bay.

Timbering of non-tidal wetlands would increase nutrient and sediment runoff. In addition, groundwater discharge into the Tidal Freshwater Mixed Community would be altered; the effect of this alteration on the two State-listed species is unknown. However, adherence to the Critical Area Criteria would preclude this and other potential threats to the Natural Heritage Area. Specific provisions of the Criteria are discussed in the next section.

BOUNDARY DISCUSSION:

The Natural Heritage Area boundary is also the boundary of Habitat Protection Areas for the two State-listed species. Pursuant to the Criteria, the boundary of the Buffer must be expanded to include all non-tidal wetlands since they are "contiguous, sensitive areas ... whose development or disturbance may impact streams, wetlands, or other aquatic environments (14.15.09.01.C(7)). As a result, the entire Natural Heritage Area falls inside the Buffer.

The following activities are specifically allowed in portions of Habitat Protection Areas inside the Buffer, assuming rare and endangered species are not adversely affected:

Hunting
Fishing
Trapping
Educational Pursuits
Scientific observation
Non-commercial, passive recreation; e.g.,
Hiking
Nature photography [14.15.10.N]

Cutting of trees for personal use, if
replaced on an equal basis and
does not impair water quality or
habitat value [14.15.09.01.C(5)c]

Individual private piers installed and
maintained by the riparian
landowner [14.15.03.01.C]

Public beaches, launching and docking
facilities, fishing piers if
5 requirements are met [14.15.03.08]

One subdivision-owned slip, pier, or mooring buoy per
300 feet of shoreline [14.15.03.07]

Water-dependent research facilities [14.15.03.09]

Commercial water-dependent fisheries facilities
[14.15.03.10]

The following activities are specifically disallowed in portions of Habitat Protection Areas inside the Buffer, assuming rare and endangered species are not adversely affected:

Development activities, including structures, roads,
parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with
acceptable water-dependent facilities [14.15.09.01.C]

Industrial and port-related facilities, and non-public
marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative
exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

a. backfill for permitted shore erosion protection structures
b. use in approved vegetated shore erosion projects
c. placement on previously approved channel maintenance spoil disposal areas
d. beach nourishment [14.15.03.04(7)]

Clearing of existing natural vegetation except

a. to provide access to private piers
b. to install or construct a legally permitted shore protection device or measure
c. to install or construct a legally permitted water-dependent facility
[14.15.09.01.C(4)(e) & (5)(c)]

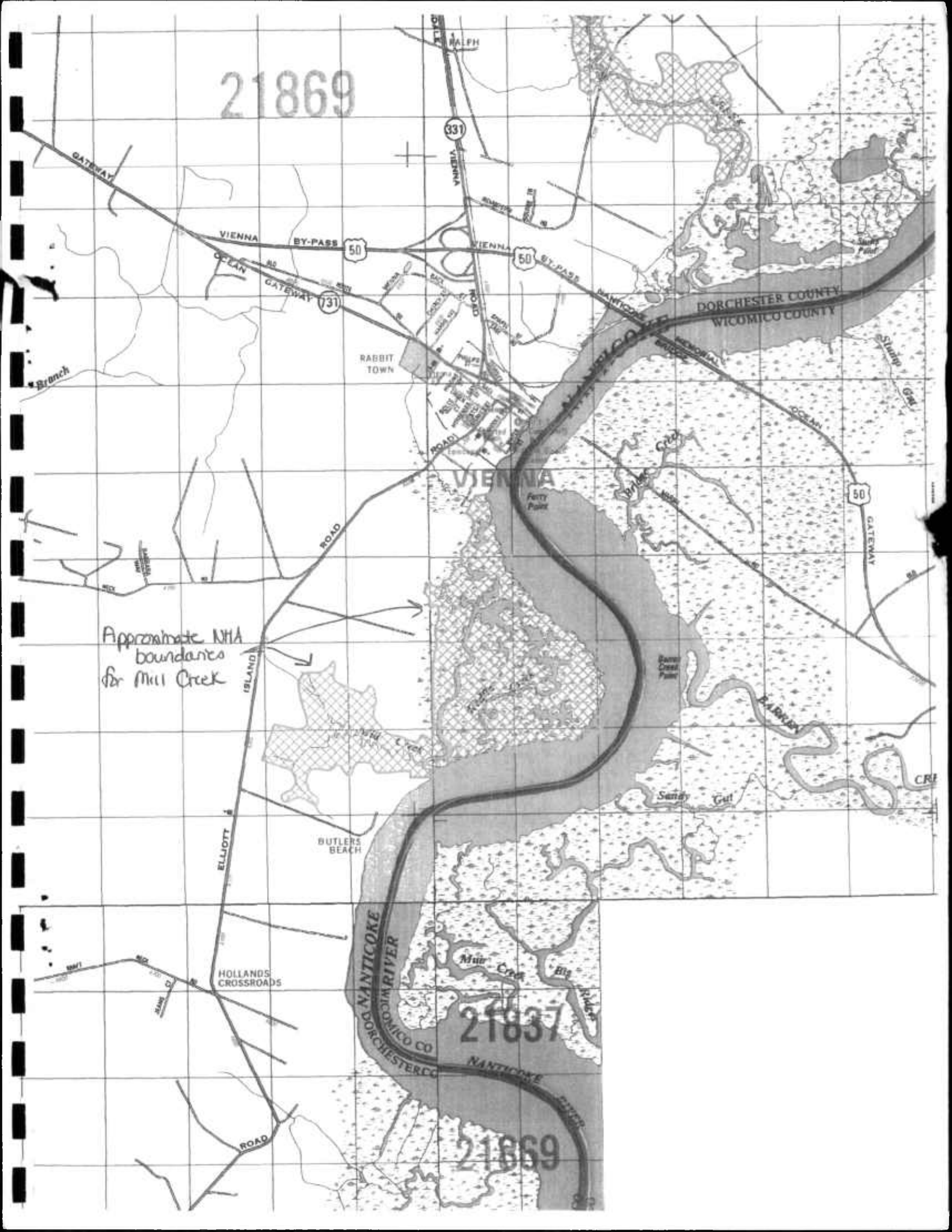
Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

Threatened and Endangered Species Habitat Protection Areas also are protected from other development activities and disturbances "... unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats (14.15.03.C(2)(a)). Therefore, any proposed activity should be reviewed on a case-by-case basis to assure adequate enforcement of this and other provisions.

In addition to the above provisions which are applicable to all types of Habitat Protection Areas, a minimum 25-foot buffer is required around non-tidal wetlands (14.15.09.02.C(3)(b)(i)). Furthermore, the hydrologic regime and water quality of non-tidal wetlands are to be protected "... by providing that development activities or other land disturbances in the drainage area of the wetlands will minimize alterations to the surface or subsurface flow of water into and from the wetland and not cause impairment of the water quality or the plant and wildlife and habitat value of the wetland." (14.15.09.02.C(3)(b)(ii).) Other provisions also may be applicable.

(August 1988)


21869
RALPH
331
VIENNA
GATEWAY
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OCEAN GATEWAY
731
RABBIT TOWN
ROAD
NANTICOKE
DORCHESTER COUNTY
WICOMICO COUNTY
Stanley Gut
Ocean
Briggs Creek
Ferry Point
Approximate NHA boundaries for Mill Creek
ISLAND
Mill Creek
Barren Creek Point
BARREN
Sandy Gut
ELLIOTT
BUTLERS BEACH
HOLLANDS CROSSROADS
Muir Creek
Big River
21837
WICOMICO CO
DORCHESTER CO
NANTICOKE RIVER
21869

CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100
Annapolis, Maryland 21401

MEMORANDUM

To: Program Subcommittee

From: Mary Owens

Date: December 5, 2007

Subject: Vienna Growth Allocation and Mill Creek Natural Heritage Area Land Acquisition

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This memorandum provides background information on a conceptual proposal for growth allocation in the Town of Vienna in Dorchester County.

In the mailing you will also receive a memorandum from Russ Brinsfield, Mayor of Vienna, in which he describes why the Town looks favorably on this concept.

Background
In April 2005 and July 2006, a growth allocation proposal for the Vienna Village Project was presented to the Program Subcommittee for discussion and comment. The proposal involved two farms—the Phillips Farm and the Legg Farm, which are located on both sides of Elliot Island Road, and total about 373.3 acres. The properties include extensive frontage on the Nanticoke River and a tidal wetland complex, known locally as Trunk Creek. The properties are located generally south and west of the Town of Vienna in Dorchester County.

At these meetings, the Town of Vienna presented Commission staff with elements of the Vienna Community Vision Plan and the Greater Vienna Comprehensive Plan, both of which supported the annexation of these properties for expansion of the Town. Also contemplated was the permanent conservation of portions of these properties to facilitate the creation of a "conservation greenbelt" that would protect sensitive environmental areas and limit further expansion of the Town to the south. The Vienna Village Project as proposed by Elm Street Development, Inc., involved a planned 350-400 unit residential development to be designed in a neo-traditional style, similar in character to that of the existing town. The development proposal involved the use of growth allocation to change the Critical Area designation of approximately 149.01 acres from Resource Conservation Area (RCA) to Intensely Developed Area (IDA).

During these meetings, there was extensive discussion about the environmental features of the properties proposed for development. Approximately 60 percent of the project area is within the Critical Area. Of the Critical Area acreage, approximately 40 acres are within the 100-foot

Buffer. The property includes extensive areas of waterfront and marshfront on the Nanticoke River, and the property is divided by a tidal tributary with connecting tributary streams and adjacent tidal wetlands. An ecological assessment performed by a consultant for Elm Street Development described numerous water courses and wetlands on the site, and identified several significant plant species.

Based on information from the Maryland Department of Natural Resources, the Natural Heritage Area (NHA) of Mill Creek is located next to and overlaps portions of these properties. A letter from the Heritage Division of DNR dated June 23, 2005 indicates that the site is adjacent to a Natural Heritage Area (NHA) and a Wetland of Special State Concern (WSSC), which supports several rare and endangered plant species. This NHA is one of only two documented sites in the State where Marsh Wild Senna has been identified, and is one of only two documented sites in Dorchester County, and one of six documented sites in the State where the Spongy Lophotocarpus is found. The DNR letter also indicates the adjacent open waters are known historic waterfowl concentration areas, and the site may support the Delmarva Fox Squirrel (DFS) and Forest Interior Dwelling (FID) Bird habitat.

Due to the proximity of this site to a NHA and WSSC, the Town and the Department of Natural Resources are very interested in conservation opportunities in and around the NHA. Through funds provided by the Rural Legacy Program, the Maryland Agricultural Lands Preservation Foundation, Program Open Space, and private funds, as well as efforts by The Nature Conservancy, several significant properties in the area have been protected or are currently the subject of negotiations for conservation purposes.

Current Proposal

During the past year, the original developer has indicated that the firm will not be pursuing the Vienna Village Project. As a result, the owner of the two properties, Mr. Bill Larmore, has begun pursuing other options. Following discussions with Town officials and Department of Natural Resources staff, an interesting proposal has evolved, whereby only a portion of the property would be developed, and a significant portion of the property would be protected by a conservation easement. The owner's proposal involves retaining approximately 100 acres and using growth allocation to develop a maximum of 135 dwelling units. A significant portion of the land proposed to be retained by the developer is within the 100-foot Buffer of Trunk Creek and would be established in natural vegetation as required by the Critical Area regulations. A 108-acre parcel to the west of Trunk Creek and a 165-acre parcel south and west of Trunk Creek would be purchased by DNR to enhance protection of the NHA. These tracts are currently in agricultural use, and reforestation and other restoration activities are proposed by DNR and the Town as a means of enhancing and optimizing the long-term protection of the NHA.

Issues for Discussion

Although the property owner and the Town do not have a conceptual plan for the future development of the 100 acres proposed to be retained by the developer, they are seeking recommendations from the Commission regarding the use of growth allocation. Specifically, they are interested in determining if the Commission would look favorably upon a request for growth allocation that did not include a 300-foot setback if alternative conservation measures

were proposed that DNR believes would provide an equivalent or greater water quality and habitat protection benefit. In discussing this issue with DNR staff, the following issues were raised as potentially significant to the Commission's consideration:

- Significant tracts of land west and south of the property are protected for conservation purposes and other nearby lands may become available if development of this property is limited as proposed.

- Much of the site is currently in agricultural use, and if DNR acquires these lands, there are excellent opportunities to expand forested habitats on and off-site through targeted reforestation efforts. Reforestation will provide additional forested habitat for Delmarva Fox Squirrel and Forest Interior Dwelling Bird species.

- This site and adjacent NHA includes numerous rare, threatened, and endangered plant species, many of which are dependent on distinct hydrologic regimes. Minimizing the area proposed for development, conserving significant acreage in the watershed, converting agricultural lands to forest, and establishing the 100-foot Buffer on all tidal waters, tidal wetlands, and tributary streams will significantly improve the likelihood of maintaining current hydrologic conditions and potentially improving water quality.

- Much of the lands proposed for acquisition by DNR are comprised of hydric soils, potentially providing opportunities to restore prior converted cropland to functioning wetlands, particularly on the southwestern portion of the site.

- The Commission's favorable consideration of a proposal that does not include a 300-foot setback would not preclude the Commission from imposing other conditions on the request for growth allocation. These conditions may include removal or alteration of existing culverts affecting tidal flows into Trunk Creek, restrictions regarding community ownership and maintenance of the 100-foot Buffer, limitations on impervious surface coverage of any proposed development, restrictions on stormwater discharges to any tidal waters or wetlands, and implementation of recommendations resulting from a hydrologic study of surface and sub-surface flows, and other measures as may be necessary.

- The developer is proposing to convey approximately 1.75 acres of land that fronts directly on the Nanticoke River to the Town of Vienna as an extension of the Town's "public waterfront." Town ownership of this land would ensure that no lots would be developed as waterfront lots, the 100-foot Buffer would be properly established and maintained, and a pedestrian connection could be developed that would connect the Town's existing waterfront park to the lands proposed for conservation.

CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100
Annapolis, Maryland 21401

MEMORANDUM

To: Program Subcommittee

From: Russ Brinsfield
Mayor, Town of Vienna

Date: November 19, 2007

Subject: Town of Vienna – Proposed Growth Allocation Conceptual Design Discussion

Vienna Greenbelt Background:

Over the past decade and a half, a number of organizations including the State of Maryland, Dorchester, Wicomico and Caroline Counties, the US Fish and Wildlife Service, The Conservation Fund, The Nature Conservancy, the Eastern Shore Land Conservancy, and the Nanticoke Watershed Alliance have formed a remarkable partnership to protect the globally significant resources and agricultural economy of the Nanticoke River watershed. At the heart of this partnership is the effort to protect the Town of Vienna.

The citizens of Vienna have a very clear vision for the future of our town. After a series of well-attended public meetings, Vienna completed a comprehensive planning process. The plan works to protect the rural, historic character of the Town by clearly defining areas where growth should occur within and around the Town. A key component of this strategy is to conserve lands along the outer boundaries of Vienna ensuring that the Town would be surrounded by a greenbelt of farms, forest and other natural resources.

Growth pressures on Vienna have increased rapidly over the past several years; the Town has taken a proactive approach to define its own future and work with its partner organizations to create the rural greenbelt along the designated growth boundary. In the past 2 years, a combination of funds from the Rural Legacy Program, the Maryland Agricultural Lands Preservation Foundation, Program Open Space and private funds were utilized to protect important properties through fee simple purchase and conservation easements. The 435-acre Spear farm and the 900-acre Baker farm are currently permanently protected and help form the southwest growth boundary to the Town. Recently The Nature Conservancy (TNC), working in partnership with the Department of Natural Resources (DNR), is exploring the potential to protect the 419-acre Mill Creek Farm containing a high quality tidal wetland complex in the State-designated Mill Creek Natural Heritage Area along the Town's southern borders. Moreover, the partnership is also working to protect the 85-acre McDowell Farm within the proposed greenbelt area along the Town's western boundaries.

Expanded Background:

The Program Subcommittee was provided a memorandum detailing a proposal for this property dated April, 20, 2005. At that time the developer for the site, Elm Street Development, Inc., proposed the creation of 350-400 residential units on the property comprised of two existing parcels (the Phillips Farm and the Legg Farm) that are divided by Elliott Island Road. The total site area contained 373.3 acres. The property was proposed for annexation into the Town of Vienna and required growth allocation to change the Critical Area designation of approximately 250 acres from RCA to Intensely Developed Area (IDA).

The Town of Vienna presented Commission staff with elements of the Vienna Community Vision Plan and the Greater Vienna Comprehensive Plan, both of which support the annexation of these lands for potential expansion of the town. These plans are attached for your general use. Due in part to market conditions and a general downturn in the real-estate economy, Elm Street Development is no longer a part of this proposal.

The Town, working in partnership with DNR, feels it is in a unique position to permanently protect ecologically significant lands by working with the property owner to scale down the original development proposal and consider the in fee purchase of the majority of the property to complete the greenbelt surrounding Vienna. The property owner has presented the partnership with what we feel is a significantly enhanced proposal to protect the Mill Creek Natural Heritage Area; the fee simple purchase of the southern portions of the former Legg Farm and western portions of the former Phillips farm that will safeguard wildlife habitat; provide increased buffers to protect the water quality of Chesapeake Bay; and provide expanded opportunities for environmental interpretation as well as the best opportunity to protect rare and threatened species within the NHA.

The new proposal will greatly reduce the proposed home sites to less than a third of the units requested in the original Elm Street plan. The proposed development will be restricted to two parcels totaling 99.86 acres closest to the existing Vienna town center. Final determination will be based upon regulatory review and parcel limitation in consultation with the Town. This will translate to reduced impervious area and significantly reduced stormwater flow and, coupled with reforestation and best management practices on the greenbelt lands, this scenario represents the best opportunity to protect the adjoining NHA.

Current Project Description:

The project involves the creation of a maximum of 135 residential units on a site that is comprised of two existing parcels (portions of the former Phillips Farm and the former Legg Farm, currently owned by Bill Larmore). The project greatly reduces the number of proposed home sites from the 350-400 units proposed in the original Elm Street Plan. A final determination of units allowed will be based upon input from the property owner in consultation with the town, regulatory review and parcel limitations. The area proposed for development is comprised of two existing parcels totaling 99.86 acres (portions of the former Phillips Farm and the former Legg Farm, currently owned by Bill Larmore) that are divided by Elliott Island Road. The total site area is 374.95 acres. Of this, 99.86 acres will be retained by the property owner (shown as Lot C on the attached maps), of which 69.36 acres would be proposed to be

developed; 273.20 acres (Lot A) will be acquired in fee by DNR to create a greenbelt and 1.89 acres (Lot B) will be acquired and retained as a natural area. The property is designated as a Resource Conservation Area (RCA). The property is proposed for annexation into the Town of Vienna and growth allocation is needed to change the Critical Area designation of approximately 99.86 (of which 69.36 acres will be developed; the remainder being the area contained within the 100' Buffer) from RCA to Intensely Developed Area (IDA). The site is bordered by the Nanticoke River to the east, and is divided by an unnamed tidal tributary. To the north is the Town of Vienna and to the south are existing RCA lands. See attached plan.

The Town envisions that the western and southern portions of this project will include a "greenbelt", and that there will be no further expansion of the town to the south. The project will be based on traditional neighborhood design standards and approximately 60 percent of the site will be open space.

At this time, the Town is requesting review by the Program Subcommittee and the following issues are proposed by the Town and the property owner for discussion:

Providing Essential Buffers

The property includes extensive areas of waterfront and marsh front on the Nanticoke River. The property is divided by a tidal tributary with adjacent tidal wetlands. At this time, while there is not a conceptual plan delineating lots, no lots will located on the Nanticoke River as the State proposes to purchase a 125' strip of waterfront land to be titled in the name of the Town of Vienna for use as a natural area. Future lot lines will not extend into a proposed 100-foot Buffer surrounding the tidal tributary and bisecting the portions of the 99.86 acres retained by the property owner. The Buffer will be placed in an open space/conservation area to be owned by the Town. The attached mapping indicates the general and specific location of the 273.2 acre "Greenbelt" area to be purchased fee simple with State Program Open Space funding, titled in the name of the Town.; two parcels containing 29.16 acres (Proposed Lot "A") and 29.16 acres (Proposed Lot "C") totaling 99.86 acres to be retained by the property owner for future development; the aforementioned tidal tributary and proposed 100' buffer; and a 1.89-acre waterfront area labeled Lot "B" to be purchased in fee for public use as a natural area.

Safeguarding Mill Creek NHA

Mr. Bill Larmore (current owner) of the property has made reference to a letter addressed to the former developer, drafted by Commission staff dated November 8, 2006, which provides guidance related to habitat protection and tidal wetlands buffers. That letter also indicates that the site is adjacent to a Natural Heritage Area (NHA) and a Wetland of Special State Concern (WSSC), which supports several rare and endangered plant species. This NHA is one of only two documented sites in the State where Marsh Wild Senna has been identified, and is one of only two documented sites in Dorchester County, and one of six documented sites in the State where the Spongy Lophotocarpus is found. Moreover, a letter drafted by DNR to the Commission dated August 12, 2003, also indicates the adjacent open waters are known historic waterfowl concentration areas, and the site may support the Delmarva Fox Squirrel (DFS), and Forest Interior Dwelling (FID) Bird habitat.

Due to the proximity of this site to an NHA and WSSC, Commission staff met with Heritage staff to discuss appropriate protection measures for the NHA. The Critical Area Criteria require that Natural Heritage Areas shall be protected from alterations due to development activities or cutting or clearing so that the structure and species composition of the areas are maintained. This is generally accomplished through the implementation of enhanced (wider) buffers and through stormwater quality and quantity management. This new proposal would greatly enhance protection of the adjoining Natural Heritage Area and WSSC as the lands bounding the NHA will now be in public ownership; the NHA is bound by the Nanticoke River to the east. Approximately 125' along the northern boundary of the NHA will be protected with purchase of the 1.89-acre Lot "B" area to be acquired for use as a natural area. The remaining NHA northern boundary along the previously referenced tidal creek would be protected with a vegetated 100' Buffer as outlined above.

DNR Heritage staff indicates that portions of the site may support DFS and FIDS habitat, and that conservation measures that create or enhance habitat for these species would be strongly encouraged. These conservation measures could include establishing forest cover in the southern portion of the property to provide wildlife connections to forested areas off-site, and afforesting an area on the western portion of the site in order to link two currently disconnected forested areas. These connected forested areas would increase and establish more DFS and FIDS habitat in that area. It is the intention of the Department of Natural Resources to work in partnership with Vienna to create a restoration and reforestation plan for the greenbelt area to complete these objectives.

Waterfront Natural Area

At this time, the future plan for this property includes no piers or other private access to the river. The owner and the Town have expressed an interest in a town park area on the northwestern portion of the site along the Nanticoke River; the current proposal would allow for the sale of a 1.89 acre (Lot "B") area for the creation of a local waterfront passive park. It is the intention of the Town to create a passive natural area that will provide a vegetated buffer and environmental interpretation.

Stormwater Management and Sewage Treatment

The developer is proposing to use growth allocation to change the Critical Area designation of the site to IDA; therefore, compliance with the 10%pollutant reduction requirement will be necessary. Any stormwater treatment practices will be located within the growth allocation development envelope. The project will be served by public water and sewer.

Expanded Conservation Opportunities

The majority of lands to the south of this site are either part of a designated Rural Legacy Area, in public ownership as part of Chesapeake Forest, or are held in some type of easement. The Department of Natural Resources in partnership with TNC and the Town of Vienna will work to complete a land protection strategy for the remaining targeted greenbelt parcels outside of this proposal as well as expanded conservation strategies within the adjoining Rural Legacy Areas. An adjacent property owner adjoining large portions of the NHA to the south of this site

has indicated a strong willingness to protect his lands with a conservation easement following the successful protection of significant portions of this site.

Setback Requirements and Establishment of a Greenbelt

The Town and the property owner have expressed concern to Commission staff about compliance with the guideline for growth allocation projects involving the application of a 300-foot setback from tidal waters and tidal wetlands. We have shown the 300-foot setback on the conceptual plan to demonstrate how the setback would adversely impact the small portions of land to be retained by the owner (99.86 acre to be retained, approximately 75 acres for potential development, of an original 373.3 acres proposed for development) compared to a 100-foot Buffer particularly if the setback were applied along the tributary that divides the project. In lieu of providing a 300-foot setback for all tidal water and tidal wetlands, the owner has proposed the following alternatives and we would like to discuss them with the appropriate Subcommittee:

- Establish a greenbelt protected by a permanent conservation easement encircling Vienna. This greenbelt is in keeping with the goals of the Vienna Comprehensive Plan and will limit future development within a defined area next to the existing town center. The greenbelt provides opportunities for significant reforestation to provide additional habitat and water quality benefits, along with providing important linking corridors to adjacent forested lands and the Nanticoke.
- Creation of on-site corridors to link the tidal gut with proposed reforestation efforts within the greenbelt area and extensive adjacent off-site forest. These corridors will follow existing ditches to provide additional water quality protection and create travel options for the greatest number of species. Corridors will also provide linkages between the tidal gut and the next most significant body of water on-site, which is the abandoned gravel pit pond.
- Protect and expand forested habitats on and off-site through the establishment of the greenbelt, corridors, and other targeted reforestation efforts. Such efforts will protect and buffer existing forest and eventually provide additional forested habitat. This will protect and ultimately enhance habitat for Delmarva Fox Squirrel and Forest Interior Dwelling Bird species.
- Restore prior converted cropland to functioning wetlands along certain portions of the greenbelt area, particularly on the southwestern portion of the site. Currently drained wetland soils in agricultural production can be relatively easily converted back to wetland conditions with manipulation of grades and drainage systems. Open water components can be incorporated to add habitat diversity.
- Restore ditches to natural stream channel morphology. Currently straightened ditches lack essential habitat features that can be restored through channel reconstruction, providing enhanced aesthetics and natural habitat.
- Establish high quality buffer habitats above and beyond regulatory requirements. Buffer areas currently in agricultural production can be seeded into diverse native and warm season grasses and wildflower meadows, with intermingled clusters of appropriate native trees and shrubs for optimal habitat diversity.
- Establish high quality stormwater wetland systems above and beyond regulatory requirements. Stormwater management can be implemented with bioretention and

wetlands systems incorporating a variety of water regimes for optimal habitat and water quality benefits.

- Incorporate passive recreational and education components throughout the natural areas to encourage ecological stewardship.

I look forward to discussing this great opportunity to help Vienna attain a major goal articulated in its vision plan. We think this proposal is a winner for the Town, the habitat, and the environment, including the Nanticoke River.

STATE OF MARYLAND
CRITICAL AREA COMMISSION
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www.dnr.state.md.us/criticalarea/

November 8, 2006

Mr. Stephen M. Horne
Elm Street Development
175 Admiral Cochrane Drive, Suite 204
Annapolis, Maryland 21401

RE: Vienna Village

Dear Mr. Horne:

I am writing to follow up on our telephone conversation and your letter dated August 30, 2006 regarding the Vienna Village Project in Vienna, Maryland. As we discussed, Critical Area Commission staff have met with Department of Natural Resources (DNR), Maryland Department of Planning (MDP), and Maryland Department of the Environment (MDE) staff to discuss the project and interagency coordination. At the meeting, Glenn Therres of the Heritage Division of the Department of Natural Resources presented the attached memorandum dated October 3, 2006 and explained the basis for the Department's position. It was agreed that if the 300-foot wetland buffer and 100-foot wetland buffer discussed in this memorandum are to properly function to protect the Natural Heritage Area, then further analysis and study of both sub-surface and surface flows will be necessary in order to ensure that no hydrologic changes to the tidal wetlands and the Natural Heritage Area will occur as a result of the development. It was also recommended that an independent third party hydrologic expert review the study design and results.

In addition to the recommendations in the memorandum, the following issues were discussed as being significant to the review of the growth allocation request both by the Town of Vienna and the Critical Area Commission:

1. The preliminary *Vienna Village Ecological Assessment* prepared by Jeff Wolinski and dated November 28, 2005 must be finalized. Section 9.3 of the Town's Critical Area Program includes specific procedures for addressing development projects that may affect threatened and endangered species and includes the development of protection measures that will be imposed on site activities.

2. The memorandum from Glenn Therres discusses environmentally sensitive design and low impact development methods that should be explored to manage stormwater quanity and quality. In comment 8)a., it is recommended that the developer "Pursue stormwater management methods, including but not limited to the use of sheet flow to buffers, vegetated channels (swales) to convey road runoff, and the disconnection of roof and non-roof runoff." It should be clarified that sheet flow should not be directed to the 100-foot Buffer and the 300-foot buffer, and that swales and

disconnections should be the recommended length and distance without encroaching into the 100-foot Buffer or 300-foot buffer.

3. This spring, the General Assembly clarified the guidelines that local governments shall apply when reviewing requests for growth allocation. The restructuring of these provisions establishes that local governments are required to apply these provisions and must address their application. When the Town submits a request for the Commission to review and approve the use of growth allocation, an analysis of each of the following should be included:

   a) Locate a new Intensely Developed Area in a Limited Development Area or adjacent to an existing Intensely Developed Area in the County.

   b) Locate a new Limited Development Area adjacent to an existing Limited Development Area or an Intensely Developed Area.

   c) Locate a new Intensely Developed Area in a Limited Development Area in a manner that minimizes impacts to a habitat protection area as defined in COMAR 27.01.09, and in an area and manner that optimizes benefits to water quality. The growth allocation request should include information regarding the minimization of impacts to all habitat protection areas on the site and any measures implemented to enhance or provide additional protection to these areas. The request should also include detailed information regarding the optimization of benefits to water quality. On past projects, the Commission has discussed that compliance with the 10% pollutant reduction requirement is a minimum standard and that additional water quality benefits should be proposed.

   d) Locate a new Intensely Developed Area or Limited Developed Area in a Resource Conservation Area at least 300 feet beyond the landward edge of tidal wetlands. Historically for projects involving significant growth allocation acreage and intense development, the Commission has looked at the 300-foot setback as a means to mitigate for and offset adverse impacts associated with development. If it is impractical for the applicant to provide a 300-foot setback, then the applicant must demonstrate that the proposed design incorporates other measures that provide equivalent or greater benefits. These measures may include, but are not limited to, options such as the conservation of land areas outside the 300-foot setback, a varying width setback that averages 300 feet, the creation or restoration of nontidal or tidal wetlands for habitat, and the establishment of forested areas to provide Delmarva Fox Squirrel or Forest Interior Dwelling Bird habitat.

   e) New Intensely Developed or Limited Development Areas to be located in the Resource Conservation Area shall conform to all criteria of the Commission for Intensely Developed or Limited Development Areas and shall be designated on the comprehensive zoning map submitted by the local jurisdiction as part of its application to the Commission for program approval or at a later date in compliance with Section 8-1809(g)

   f) Except in Calvert, Caroline, Cecil, Charles, Dorchester, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, Wicomico, and Worcester Counties, no more than one-half of the expansion allocated in the criteria of the Commission may be located in Resource Conservation Areas.

4. In addition, the Code of Maryland Regulations provides the following additional instructions for growth allocation requests from local jurisdictions in COMAR 27.01.02.06, which should be addressed in the Town's application:

   a) The area of expansion of Intensely Developed or Limited Development Areas, or both, may not exceed an area equal to 5 percent of the county's portion of the Resource Conservation Area lands that are not tidal wetlands or federally owned.

   b) New Intensely Developed Areas should be located where they minimize impacts to the defined land uses of the Resource Conservation Area.

5. There are extensive areas of hydric soils on this project site, and the Town's Critical Area Program and the Critical Area Criteria include provisions for expansion of the Buffer when these soils are contiguous to the Buffer. The Town's Program states, "Where the site of the proposed land disturbance is on or drains to hydric soils, soils with hydric properties, and erodible soils, within the Critical Area the Buffer will be expanded to include as much of the sensitive soil adjacent to the Buffer as needed to protect aquatic environments to the limit of the sensitive soil in the Critical Area." It is recommended that the Town and the developer work with appropriate soil scientists and hydrology experts to determine where and to what extent expansion of the Buffer for hydric soils is warranted.

I hope this letter will provide some further guidance on the project and the Commission's consideration of the recommendations from the Heritage Division of the DNR and the application of the growth allocation guidelines. The staffs of the Commission, DNR, MDP, and MDE are available to meet with you to discuss these issues in more detail and provide further direction regarding the protection of the Natural Heritage Area through thoughtful and sensitive design of the project. Please feel free to contact me at (410) 260-3480 regarding the scheduling of this meeting or if you have any questions about this letter.

Sincerely yours,

Mary R. Owens

Mary R. Owens, Chief
Program Implementation Division

cc: Frank Dawson, DNR
Rich Hall, MDP
Marianne Dise, CAC
Keith Lackie, MDP
Ren Serey, CAC
Gary Setzer, MDE
Mike Slattery, DNR
Glenn Therres, DNR

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Robert L. Ehrlich, Jr., *Governor*
Michael S. Steele, *Lt. Governor*
C. Ronald Franks, *Secretary*

MEMORANDUM

To: Ren Serey

From: Glenn Therres GT

Re: Vienna Village

Date: October 3, 2006

The proposed Vienna Village residential project is currently located in an area that has been designated as a Natural Heritage Area (COMAR 08.03.08.10). This site, which is one of only 32 across the entire state, was selected because it contains state listed species and is considered to be amongst the best Statewide examples of this tidal natural community type. The current level of intactness of this system as a whole, the lack of degradation overall, and the presence of viable populations of sensitive species makes this Natural Heritage Area truly a special place.

Given the nature of potential impacts associated with this development project, we would like to point out that under the authority of the Natural Resource Article 8-1808(d) it is a matter of policy for Natural Heritage Areas to be protected by local jurisdictions. This is clearly stated in the Habitat Protection Area provisions of Subtitle 18. We feel it is also important to note that under the provisions of the newly enacted Senate Bill 751 that guidelines pertaining to moving from an RCA to an LDA call for locating development at least 300 feet beyond the landward edge of tidal wetlands or tidal waters. Although these are in fact only guidelines, it underscores the fact that our General Assembly recognizes the importance of protecting ecologically important areas from undesirable impacts associated with development.

DNR's Wildlife and Heritage Service (WHS) evaluation of the proposed Vienna Village residential development project has been based on field work by WHS staff, data provided within the "Vienna Village Ecological Assessment" dated Nov. 28, 2005 and prepared by consultant Jeff Wolinski for Elm Street Development, a meeting between the developers, their representatives, and DNR on August 1, 2006, and further discussions within DNR. After a careful consideration of all the relevant factors we have decided to revise our earlier recommendations (June 29, 2006 letter to Mary Owens from Scott Smith, WHS) of a 300-foot buffer on all tidal wetlands within the project site. Our final position and recommendations are as follows:

1) Establish a 300-foot upland buffer on the existing Mill Creek Natural Heritage Area.

2) No lot lines should occur within this 300-foot buffer.

3) Establish a 100-foot buffer on all tidal wetlands within the project area.

4) No lot lines should occur within this 100-foot buffer.

5) The 300-foot and 100-foot wetland buffers should be reforested.

6) A process to control invasive plant species within these buffers and elsewhere on the site should be incorporated into development plans.

7) Velvety sedge (*Carex vestita*), a state threatened plant, was located by the developer's consultant along a field edge in the south-central portion of the property. This is an upland species that requires frequent disturbance. The former practice of brush-hogging of field edges every few years is what has been responsible for maintenance of this sedge population. It will be important to continue this type of management practice in this specific area to maintain the sedge, specifically late summer/fall mowing.

8) Apply environmentally sensitive design and low impact development methods to address stormwater runoff. Promote the use of nonstructural best management practices to the greatest extent possible, and in accordance with the following guidance:
   a. Pursue stormwater management methods, including but not limited to the use of sheet flow to buffers, vegetated channels (swales) to convey road runoff, and the disconnection of roof and non-roof runoff.
   b. Reduce impervious cover as outlined in the Maryland Department of Environment (MDE) Stormwater Management Manual, Section 5.8, available online at: www.mde.state.md.us/assets/document/chapter5.pdf.
   c. Pursue opportunities to include the use of shared parking/driveways and use of pervious materials wherever possible.
   d. Locate impervious surfaces as far as possible from permanent and intermittent streams and 100-year floodplains to enhance opportunities for filtration and moderation of stormwater runoff before entering the adjacent wetland system.

9) To minimize risk of sedimentation in the aquatic and wetland habitats and to minimize changes to the hydrology and water quality of these habitats:
   a. Special effort should be made to retain fine particle silt, sand and clay sediments. This may require the incorporation of redundant/additional control measures in the sediment and erosion control plan to ensure maximum filtration of any sediment-laden runoff (e.g. accelerated stabilization, super silt fence instead of silt fence, etc.)
   b. All sediment and erosion control measures should be inspected daily to ensure that they are maintained at a high functional level through all stages of development. Any problems should be corrected immediately.

It has also come to our attention that the applicant is currently beginning a hydrologic study of only sub-surface flows. We recommend that this study also include surface flows, and that an

independent third party hydrologic expert review the study design and results. No hydrologic changes to the tidal wetlands and the Natural Heritage Area should occur as a result of the development.

If clarification or additional information is needed, I can be contacted at 410-260-8572.

VIENNAVILLAGEBUFFER.MEM

cc: T. Larney
S. Smith

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor

Martin G. Madden
Chairman

Ren Serey
Executive Director

STATE OF MARYLAND
CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100, Annapolis, Maryland 21401
(410) 260-3460 Fax: (410) 974-5338
www.dnr.state.md.us/criticalarea/

July 26, 2006

Ms. Tracey Gordy
Maryland Department of Planning
Lower Eastern Shore Regional Office
201 Baptist Street, Suite 24
Salisbury, Maryland 21801-4974

RE: Vienna Village
VI 295-06

Dear Ms. Gordy:

I am writing to follow up on the Program Subcommittee's discussion of the referenced project at the Critical Area Commission meeting on July 5, 2006. At this meeting, you and Mayor Russ Brinsfield described the Town's long rage planning efforts, the Vienna Village Project, and the significance of the project to the implementation of the Town of Vienna's vision for future growth.

The Subcommittee also heard a presentation from Mr. Jeff Wolinski, a consultant for Elm Street Development. A copy of the *Vienna Village Ecological Assessment* was distributed to all of the Subcommittee members. The Subcommittee was very interested in the extensive environmental survey and research work on the property that Mr. Wolinski had performed as part of the environmental analysis of the property, and his discussion of the many rare species that were identified. The Subcommittee generally agreed with Mr. Wolinski's that the natural resources on the site and the overall ecology of the wetland systems "deserve the highest level of conservation priority from both ecological and regulatory perspectives."

At the meeting, the Program Subcommittee received copes of a letter from Mr. Scott Smith of the Heritage Division of the Department of Natural Resources. The letter provides comments regarding the protection of the Mill Creek Natural Heritage Area and several State-listed species that were found on the property during the environmental survey work. See Enclosure (1). The Subcommittee reviewed the letter and directed Commission staff to coordinate with Heritage Division staff regarding the recommendations in the letter and how they should be applied to the proposed development project.

In addition to the issues discussed by the Program Subcommittee at the meeting, Commission member Glenn Bramble requested that the following questions be addressed at a future meeting with the Subcommittee. I believe that some of these questions may be appropriately answered by the Town or Elm Street Development, whereas others may require responses from Critical Area Commission staff or Heritage staff. The questions are as follows:

1. What size buffers exist on the site today? What is their condition?

2. What are the added benefits of a 300 foot buffer versus the proposed 100-foot Buffer. Can references to scientific literature be provided to support this?
→ 2 studies provided by Scott / species. / NHA

3. Is it possible to quantify the current versus the proposed subsurface hydrology?
Yes - do hydric study.

4. What are some of the proposed techniques being considered for stormwater treatment on the site?

5. How can the functionality of the 100-foot Buffer be increased?
→ mature trees -

6. Are there areas where the developer is proposing buffer widths greater than 100 feet?

7. What portion of water in the wetlands comes from adjacent buffers versus from the streams and ditches?
→ hydric study

8. Does the developer propose to restore some of the ditches to their previous stream conditions? If so, what impact will this have on water quality and quantity?

9. Are all of the rare, threatened, and endangered species found within the wetlands? NO
Velvety sedge → upland -

10. How can the developer and the Town ensure that there will be no future impacts on the buffers? → no lot lines in Buffer.) + BM Plan + perm. Conservat. easement.

11. What will the greenbelt look like? What role does it play in the project and the Town's vision for the future?

12. What impact would a 300 foot buffer on both farms play in that vision? of Town -

13. Considering the existing agricultural land use, will the proposed development provide additional protection to sensitive species on this site? → NO - impervious surface - chemicals for lawns -

14. Notwithstanding the growth allocation issues, what additional environmental protection measures are provided as part of this project, above and beyond what any other IDA project would provide in accordance with "statutory requirements" in an IDA? - BM Plan -

15. Is the proposed plan in keeping with the desires of the community to ensure a "logical extension" of existing Vienna. In looking at the two exhibits provided by the developer

(the proposed plan versus the 300 foot plan), is the proposed plan more in keeping with the Town's "visioning process," versus what appears to be a total disconnect as seen in the 300 foot plan?

At the end of the discussion, the Subcommittee members agreed that additional discussion at a future Subcommittee meeting was warranted. They directed staff to follow up on the recommendations from Heritage Division staff and the responses to Commissioner Bramble's questions. I will contact you to discuss the most appropriate person or agency to respond to the questions in this letter. If you need any additional information, please call me at (410) 260-3480.

Sincerely,

Mary R. Owens

Mary R. Owens, Chief
Program Implementation Division

cc: Frank Dawson, DNR
Steve Horn, Elm Street Development
Scott Smith, DNR
Glenn Therres, DNR
Jeff Wolinski, Consulting Ecologist

Enclosure(1)

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Robert L. Ehrlich, Jr., *Governor*
Michael S. Steele, *Lt. Governor*
C. Ronald Franks, *Secretary*

June 29, 2006

Mary Owens
Chesapeake Bay Critical Area Commission
1804 West St., Suite 100
Annapolis, MD 21401

Subject: Proposed Vienna Village, Dorchester County

Dear Ms. Owens:

I have reviewed the "Vienna Village Ecological Assessment" dated Nov. 28, 2005 prepared by consultant Jeff Wolinski for Elm Street Development. I have also reviewed the "Summary of Vienna Village Concept Plan" dated June 20, 2006 prepared by Stephen Horn of Elm Street Development, including the associated maps showing the 100 and 300 foot buffers on tidal wetlands. Lastly, I met on site yesterday with Jeff Wolinski, Chris Frye (State Botanist, DNR Wildlife & Heritage), and Jennifer Lester of your staff.

Elm Street Development should be commended for attempting to develop an environmentally-friendly concept plan. The proposed areas for open space, wetland restorations, FIDS & DFS habitat afforestion, forested stream buffer establishment, and state-of-the-art stormwater management are all excellent attempts to reduce impacts to a very sensitive natural area, Mill Creek NHA, and the Wetland of Special State Concern. I offer the following comments:

1) Given that Jeff Wolinski has discovered additional state-listed plant species (swamp oats, velvety sedge) within the contiguous tidal stream corridor north of the NHA and that this corridor is ecologically connected with Mill Creek NHA, it is appropriate to expand the Habitat Protection Area (HPA) to include these rare elements and the entire contiguous tidal wetland corridor.

2) I am concerned about the potential negative effects the development and associated impervious surfaces will have on quality and quantity of surface and subsurface flow of water into the wetlands, specifically in how these will affect the rare plant communities. It is appropriate to expand tidal wetland buffers to a minimum of 300 feet throughout the property to attempt to mitigate these impacts. The map titled "300' Buffer Exhibit" from Steve Horn's packet clearly and correctly indicates the areas of expanded 300 foot buffer.

3) Currently the existing agricultural fields act as a transition zone and buffer between the town of Vienna and the unique and sensitive marsh ecosystem that encompasses Mill Creek NHA. The current zoned designation as a Resource Conservation Area (RCA) has been an appropriate designation to maintain that transition. The proposed growth allocation will change this to an Intensively Developed Area designation, resulting in the loss of that transition zone. Expanding tidal wetland buffers to a minimum of 300 feet will maintain some of the transition zone.

4) Lot lines should not be included within this expanded 300 foot buffer. This area and all open space areas should be held in common by a landowner's association, the town or a conservation organization. These areas should all be placed in perpetuity in a conservation easement. The Wildlife and Heritage Service should be consulted for appropriate easement language, stressing maintenance of the rare plant communities and integrity of the marsh ecosystem.

5) State-of-the-art stormwater management will be very important to maintain existing hydrologic regimes. We recommend the developers follow MDE's new Stormwater Design Manual.

6) It is important to retain existing trees within the buffer. Afforestation of the remaining expanded buffer and open space areas should first consider allowing natural regeneration to occur before attempting to plant trees. I am concerned that seeds of invasive plant species will be inadvertently brought into the site during a tree planting and expand into sensitive natural areas.

7) Velvety sedge is an upland species that requires frequent disturbance. The former practice of brush-hogging of field edges every few years is what has been responsible for maintenance of this sedge population. It will be important to continue this type of management practice in this specific area to maintain the sedge, specifically late summer/fall mowing.

8) The water-dependent facility proposed for the northeast section of the Legg Farm will need further review by Larry Hindman, DNR Waterfowl Project Manager, as this area is a historic waterfowl concentration and staging area.

9) It is my understanding that Jeff Wolinski's report was considered preliminary, and in fact, a number of plant specimens that were collected from the property are still waiting to be identified by Charlie Davis. Depending on what species these plants are (e.g., state-listed or not), and where they were collected on the property, it is possible that the Wildlife and Heritage Service will have additional comments on potential impacts from this development.

In summary, Elm Street Development is to be commended for a sensitive concept plan. An expanded HPA to include all of the tidal wetlands and an expanded minimum 300 foot buffer will help maintain the ecological integrity of this important natural area. Please keep us informed as this project progresses.

Sincerely,

Scott A. Smith
Eastern Region Heritage Ecologist
Wildlife & Heritage Service

ER#2005.0785.do

Cc: G. Therres, DNR
T. Larney, DNR
L. Hindman, DNR
L. Byrne, DNR

CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100
Annapolis, Maryland 21401

MEMORANDUM

To: Program Subcommittee

From: Jennifer Lester

Date: July 5, 2006

Subject: Vienna Village Concept Plan—Growth Allocation

Project Description

Vienna Village is a planned 300 unit residential development located on a 376-acre parcel. The parcel was created from two farms—the Phillips Farm and the Legg Farm, that were divided by Elliott Island Road. The property is currently designated as a Resource Conservation Area (RCA) and has been annexed into the Town of Vienna. Growth allocation is needed to change the Critical Area designation of approximately 149.01 acres from RCA to Intensely Developed Area (IDA). (See Growth Allocation Exhibit.) The site is bordered by the Nanticoke River to the east, and is divided by an unnamed tidal tributary. To the north is the Town of Vienna and to the south are existing RCA lands.

The town envisions that the western and southern portions of this project will include a greenbelt, and that there will be no further expansion of the town to the south. The project will be based on traditional neighborhood design standards and approximately 64 percent of the site will be open space. The developer has hired a consultant ecologist who has prepared a draft ecological assessment of the project area. This document will be provided to the Subcommittee at the July meeting. Included in this memorandum are proposed measures for protecting sensitive environmental features of the project site that the developer is currently evaluating.

At this time, the Town has requested review by the Program Subcommittee and the following issues are proposed by the Town and the potential developer for discussion:

100-foot Buffer

Approximately 218.12-acres are within the Critical Area. Of the Critical Area acres, approximately 39.46-acres are within the 100-foot Buffer. The property includes extensive areas of waterfront and marshfront on the Nanticoke River. The property is divided by a tidal tributary with adjacent tidal wetlands. At this time, the current conceptual plan does not include any lots fronting on the Nanticoke River, and lot lines will not extend into the 100-foot Buffer. The Buffer will be placed in open space/conservation area to be owned by the Homeowner's Association or the Town. The developer's consulting ecologist has recommended that a

comprehensive revegetation and management plan be developed for all Buffer areas to ensure appropriate revegetation. See attached 100-foot Buffer Exhibit.

The applicant will be required to establish the 100-foot Buffer on all tidal waters, tidal wetlands, and tributary streams. In addition the applicant is proposing an additional 16.09 acres of wider vegetated buffers to provide enhanced habitat protection. The applicant's consultant has developed recommendations to enhance and manage these Buffers including establishing high quality habitats above and beyond regulatory requirements. Buffer areas currently in agricultural production can be seeded into diverse native grass and wildflower meadows, with intermingled clusters of appropriate native trees and shrubs for optimal habitat diversity.

The "Vienna Village Ecological Assessment" describes numerous water courses and wetlands on the site. At this time, the regulatory status of all of these areas has not been evaluated by the Corps of Engineers, the Maryland Department of the Environment, or the Commission. There are numerous watercourses that serve as "agricultural ditches," and Commission staff will need to work closely with the environmental consultant to determine whether any or all of these are considered tributary streams requiring a 100-foot Buffer. Expansion of the Buffer for contiguous sensitive areas, primarily hydrioc soils, will need to be addressed.

Habitat Protection Areas

The Maryland Department of Natural Resources has determined that the Natural Heritage Area (NHA) of Mill Creek is located next to and overlaps the project site. A letter from the Heritage Division of DNR dated June 23, 2005 indicates that the site is adjacent to a Natural Heritage Area (NHA) and a Wetland of Special State Concern (WSSC), which supports several rare and endangered plant species. This NHA is one of only two documented sites in the State where Marsh Wild Senna has been identified, and is one of only two documented sites in Dorchester County, and one of six documented sites in the State where the Spongy Lophotocarpus is found. The DNR letter also indicates the adjacent open waters are known historic waterfowl concentration areas, and the site may support the Delmarva Fox Squirrel (DFS) and Forest Interior Dwelling (FID) Bird habitat.

Due to the proximity of this site to an NHA and WSSC, Commission staff is meeting with Heritage staff to discuss appropriate protection measures for the NHA. The Critical Area Criteria require that Natural Heritage Areas shall be protected from alterations due to development activities or cutting or clearing so that the structure and species composition of the areas are maintained. This is generally accomplished through the implementation of enhanced (wider) buffers and through stormwater quality and quantity management. The environmental assessment states, "This exemplary natural community deserves the greatest extent of conservation possible, and such conservation will be mandated by applicable, federal, State, and local laws and regulations. As noted in the NHA summary discussion, the freshwater inputs to this system are critical components of its ecological integrity and must be preserved to ensure long-term function."

As addressed above, Heritage has staff indicated that portions of the site may support DFS and FIDS habitat, and that conservation measures that create or enhance habitat for these species

would be strongly encouraged. These conservation measures could include establishing forest cover in the southern portion of the property to provide wildlife connections to forested areas off-site, and afforesting an area on the western portion of the site in order to link two unconnected forested areas. These connected forested areas would increase and establish more DFS and FIDS habitat in that area.

Shoreline Access

At this time, the conceptual plan shows one pier and a public waterfront park area on the northeastern portion of the site along the Nanticoke River. This public waterfront park includes a neighborhood village trail system that connects to the Town of Vienna's public river walk. The proposed neighborhood village trail system then provides pedestrian access to the tidal tributaries of the Nanticoke, including one pedestrian bridge that crosses the tidal tributary and continues throughout the forested areas of the development.

Stormwater Management

The developer is proposing to use growth allocation to change the Critical Area designation of the site to IDA; therefore, compliance with the 10% pollutant reduction requirement will be necessary. The conceptual design includes several stormwater treatment practices, and the Town has indicated that state of the art stormwater management will be provided. The developer is proposing to use high quality stormwater wetland systems above and beyond regulatory requirements. Stormwater management can be implemented with bioretention and wetland systems incorporating a variety of water regimes for optimal habitat and water quality benefits. All stormwater treatment practices will be located within the growth allocation development envelope.

Sewage Treatment

The project will be served by public water and sewer.

300-foot Setback

The proposed plan does not include a 300-foot setback from tidal waters and tidal wetlands; however, the setback is generally wider than the required minimum 100-foot Buffer. The "300' Buffer" exhibit shows how the project would be affected if a 300-foot setback adjacent to all tidal water and tidal wetlands were provided. The Town and the developer would like to discuss this issue at the July 5, 2006 meeting.

Other Pertinent Issues

- The majority of lands to the south of this site are either part of a designated Rural Legacy Area or are held in some type of easement.

- The applicant's proposal includes the establishment of a greenbelt protected by a permanent conservation easement west and south of the Town of Vienna. This greenbelt is in keeping with the goals of the Vienna Comprehensive Plan and will contain future development within a defined town center. The greenbelt provides opportunities for significant reforestation to provide additional habitat and water quality benefits, along with providing important linking corridors to adjacent forested lands and the Nanticoke.

CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100
Annapolis, Maryland 21401

MEMORANDUM

To: Program Subcommittee (Blazer, Bailey, Bramble, Carroll, Dawson, Ennis, Evans, Gibson, Ladd, Lawrence, McKay, Mielke, Prettyman, Richards, and Vitale)

From: Mary R. Owens

Date: April 20, 2005

Subject: Town of Vienna – Proposed Growth Allocation Conceptual Design Discussion

Vienna Greenbelt Background:

Over the past decade and a half, a number of organizations including the State of Maryland, Dorchester, Wicomico and Caroline Counties, The US Fish and Wildlife Service, The Conservation Fund, The Nature Conservancy, the Eastern Shore Land Conservancy, and the Nanticoke Watershed Alliance have formed a remarkable partnership to protect the globally significant resources and agricultural economy of the Nanticoke River watershed. At the heart of this partnership is the effort to protect the Town of Vienna.

The citizens of Vienna have a very clear vision for the future of their town. After a series of well-attended public meetings, Vienna completed a comprehensive planning process. The plan works to protect the rural, historic character of the Town by clearly defining areas where growth can occur within the Town. A key component of this strategy is to conserve lands along the outer boundaries of Vienna ensuring that the Town would be surrounded by a greenbelt of farms, forest and other natural resources.

Growth pressures on Vienna have increased rapidly over the past several years; the Town has taken a proactive approach to define its own future and work with its partner organizations to create the rural greenbelt along the designated growth boundary. In the past 2 years, a combination of funds from the Rural Legacy Program, the Maryland Agricultural Lands Preservation Foundation, Program Open Space and private funds were utilized to protect important properties through fee simple purchase and conservation easements. The 435-acre Spear farm and the 900-acre Baker farm are currently permanently protected and help form the southeast growth boundary to the Town. The Nature Conservancy (TNC) working in partnership with the Department of Natural Resources (DNR) is exploring the potential to protect the 419-acre Mill Creek Farm containing a high quality tidal wetland complex in the State-designated Mill Creek Natural Heritage Area along the Towns southern borders. Moreover, the partnership is also working to protect the 85-acre Mc Dowel Farm within the proposed greenbelt area along the Town's northern boarders.

Expanded Background:

The Program Subcommittee was provided a memorandum detailing a proposal for this property dated April, 20, 2005. At that time the developer for the site, Elm Street Development, Inc, proposed the creation of 350-400 residential units on the property comprised of two existing parcels (the Phillips Farm and the Legg Farm) that are divided by Elliott Island Road. The total site area contained 373.3 acres. The property was proposed for annexation into the Town of Vienna and requiring growth allocation to change the Critical Area designation of approximately 250 acres from RCA to Intensely Developed Area (IDA).

The Town of Vienna presented Commission staff with elements of the Vienna Community Vision Plan and the Greater Vienna Comprehensive Plan, both of which support the annexation of these lands for potential expansion of the town. These plans are attached for your general use. Due in part to market conditions and a general downturn in the real-estate economy, Elm Street Development is no longer a part of this proposal.

The Town working in partnership with DNR feels it is in a unique position to permanently protect ecologically significant lands by working with the property owner to scale down the original development proposal and consider the in fee purchase of the majority of the property to form a greenbelt surrounding Vienna. The property owner has presented the partnership with what it feels is a significantly enhanced proposal to protect the Mill Creek Natural Heritage Area; the fee simple purchase of the southern portions of the former Legg Farm and western portions of the former Phillips farm will safeguard wildlife habitat, provide increased buffer to protect the water quality of Chesapeake Bay, and provide expanded opportunities for environmental interpretation as well as the best opportunity to protect rare and threatened species within the NHA. The new proposal will greatly reduce the proposed home sites to less than a third of the units requested in the original Elm Street plan; proposed development will be restricted to two parcels totaling 99.86 acres to be retained closest to the Vienna town center. Final determination will be based upon regulatory review and parcel limitation in consultation with the Town. This should translate to reduced impervious area and significantly reduced storm water flow; coupled with reforestation and best management practices on the greenbelt lands this scenario may represent the best opportunity to protect the adjoining NHA.

Current Project Description:

The project involves the creation of a maximum of 135 residential units on a site that is comprised of two existing parcels (portions of the former Phillips Farm and the former Legg Farm, currently owned by Bill Larmore). The project greatly reduces the number of proposed home sites from the 350-400 units proposed in the original Elm Street Plan. A final determination of units allowed will be based upon input from the property owner in consultation with the town, regulatory review and parcel limitations. The area proposed for development is comprised of two existing parcels totaling 99.86 acres (portions of the former Phillips Farm and the former Legg Farm, currently owned by Bill Larmore) that are divided by Elliott Island Road. The total site area is 374.95 acres. 99.86 acres will be retained by the property owner (shown as Lot C on the attached maps), of which 69.36 acres would be proposed to be developed; 273.20 acres (Lot A) will be acquired in fee by DNR to create a greenbelt and 1.89 acres (Lot B) will be acquired to create a local waterfront park. The property is designated as a Resource Conservation Area (RCA). The property is proposed for annexation into the Town of Vienna and growth allocation is needed to change the Critical Area designation of approximately 69.36 acres (99.86 minus the buffer area) from RCA to Intensely Developed Area (IDA). The site is bordered by the Nanticoke River to the east, and is divided by an unnamed tidal tributary. To the north is the Town of Vienna and to the south are existing RCA lands. See attached plan.

The town envisions that the western and southern portions of this project will include a "greenbelt", and that there will be no further expansion of the town to the south. The project will be based on traditional neighborhood design standards and approximately 60 percent of the site will be open space.

At this time, the Town has requested review by the Program Subcommittee and the following issues are proposed by the Town and the potential developer for discussion:

100-foot Buffer

The property includes extensive areas of waterfront and marsh front on the Nanticoke River. The property is divided by a tidal tributary with adjacent tidal wetlands. At this time, while there is not a conceptual plan delineating lots, no lots will located on the Nanticoke River as the State proposes to purchase a 125' strip of waterfront land to be titled in the name of the Town of Vienna for use as a local park. Future lot lines will not extend into a proposed 100-foot Buffer surrounding the tidal tributary and bisecting the portions of the 99.86 acres retained by the property owner. The Buffer will be placed in an open space/conservation area to be owned by the Town. The attached mapping indicates the general and specific location of the 273.2 acre "Greenbelt" area to be purchased fee simple with State Program Open Space funding, titled in the name of the Town., two parcels containing 29.16 acres (Proposed Lot "A") and 29.16 Acres (Proposed Lot "C") totaling 99.86 acres to be retained by the property owner for future development, the aforementioned tidal tributary and proposed 100" buffer, and a 1.89-acre waterfront area labeled Lot "B" to be purchased in fee for public use as a local park.

Habitat Protection Areas

The applicant has made reference to a letter addressed to the former developer, drafted by Commission staff dated November 8, 2006, which provides guidance related to habitat protection and tidal wetlands buffers. That letter also indicates that the site is adjacent to a Natural Heritage Area (NHA) and a Wetland of Special State Concern (WSSC), which supports several rare and endangered plant species. This NHA is one of only two documented sites in the State where Marsh Wild Senna has been identified, and is one of only two documented sites in Dorchester County, and one of six documented sites in the State where the Spongy Lophotocarpus is found. Moreover, a letter drafted by DNR to the Commission dated August 12, 2003, also indicates the adjacent open waters are known historic waterfowl concentration areas, and the site may support the Delmarva Fox Squirrel (DFS), and support Forest Interior Dwelling (FID) Bird habitat.

Due to the proximity of this site to an NHA and WSSC, Commission staff met with Heritage staff to discuss appropriate protection measures for the NHA. The Critical Area Criteria require that Natural Heritage Areas shall be protected from alterations due to development activities or cutting or clearing so that the structure and species composition of the areas are maintained. This is generally accomplished through the implementation of enhanced (wider) buffers and through stormwater quality and quantity management. This new proposal would greatly enhance protection of the adjoining Natural Heritage Area and WSSC as the lands bounding the NHA will now be in public ownership; the NHA is bounded by the Nanticoke River to the east. Approximately 125' along the northern boundary of the NHA will be protected with purchase of the 1.89-acre Lot "B" area to be acquired for use as a local waterfront park . The remaining NHA northern boundary along the previously referenced tidal creek would be protected with a vegetated 100' buffer as outlined above.

DNR Heritage staff indicate that portions of the site may support DFS and FIDS habitat, and that conservation measures that create or enhance habitat for these species would be strongly encouraged. These conservation measures could include establishing forest cover in the southern portion of the property to provide wildlife connections to forested areas off-site, and afforesting an area on the western portion of the site in order to link two unconnected forested areas. These connected forested areas would increase and establish more DFS and FID habitat in that area. It is the intention of the Department to work in partnership with Vienna to create a restoration and reforestation plan for the Greenbelt area to complete these objectives.

Shoreline Access

At this time, the future plan for this property includes no piers or other private access to the River. The owner and the Town have expressed an interest in a town park area on the northwestern portion of the site along the Nanticoke River; the current proposal would allow for the sale of a 1.89 acre (Lot "B") area for the creation of a local waterfront park.

Stormwater Management

The developer is proposing to use growth allocation to change the Critical Area designation of the site to IDA; therefore, compliance with the 10%pollutant reduction requirement will be necessary. Any stormwater treatment practices will be located within the growth allocation development envelope.

Sewage Treatment

The project will be served by public water and sewer.

Other Pertinent Issues

The majority of lands to the south of this site are either part of a designated Rural Legacy Area, in public ownership as part of Chesapeake Forest, or are held in some type of easement. The Department of Natural Resources in partnership with TNC and the Town of Vienna will work to complete a land protection strategy for the remaining targeted greenbelt parcels outside of this proposal as well as expanded conservation strategies within the adjoining Rural Legacy Areas. An adjacent property owner adjoining large portions of the NHA to the south of this site has indicated a strong willingness to protect his lands with a conservation easement following the successful protection of significant portions of this site.

300-foot Setback

The Town and the developer have expressed concern to staff about compliance with the guideline for growth allocation projects involving the application of a 300-foot setback from tidal waters and tidal wetlands. They have shown the 300-foot setback on the conceptual plan to demonstrate how the setback could adversely impact the small portions of land to be retained by the owner project (99.86 acre to be retained, approximately 75 acres potential development, of an original 373.3 acres proposaed for development) particularly if the setback were applied along the tributary that divides the project. In lieu of providing a 300-foot setback for all tidal water and tidal wetlands, the developer has proposed the following alternatives and would like to discuss them with the Program Subcommittee:

- Establish a greenbelt protected by a permanent conservation easement encircling Vienna. This greenbelt is in keeping with the goals of the Vienna Comprehensive Plan and will contain future development within a defined town center. The greenbelt provides opportunities for significant reforestation to provide additional habitat and water quality benefits, along with providing important linking corridors to adjacent forested lands and the Nanticoke.
- Creation of on-site corridors to link the tidal gut with proposed reforestation efforts within the greenbelt area and extensive adjacent off-site forest. These corridors should follow existing ditches to provide additional water quality protection and create travel options for the greatest number of species. Corridors should also provide linkages between the tidal gut and the next most significant body of water on-site, which is the abandoned gravel pit pond.

- Protect and expand forested habitats on and off-site through the establishment of the greenbelt, corridors, and other targeted reforestation efforts. Such efforts will protect and buffer existing forest and eventually provide additional forested habitat. This will protect and ultimately enhance habitat for Delmarva Fox Squirrel and Forest Interior Dwelling Bird species.
- Restore prior converted cropland to functioning wetlands along certain portions of the greenbelt area, particularly on the southwestern portion of the site. Currently drained wetland soils in agricultural production can be relatively easily converted back to wetland conditions with manipulation of grades and drainage systems. Open water components can be incorporated to add habitat diversity.
- Restore ditches to natural stream channel morphology. Currently straightened ditches lack essential habitat features that can be restored through channel reconstruction, providing enhanced aesthetics and natural habitat.
- Establish high quality buffer habitats above and beyond regulatory requirements. Buffer areas currently in agricultural production can be seeded into diverse native grass and wildflower meadows, with intermingled clusters of appropriate native trees and shrubs for optimal habitat diversity.
- Establish high quality stormwater wetland systems above and beyond regulatory requirements. Stormwater management can be implemented with bioretention and wetlands systems incorporating a variety of water regimes for optimal habitat and water quality benefits.
- Incorporate passive recreational and education components throughout the natural areas to encourage ecological stewardship.

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Eric Schwaab, Deputy Secretary

To: Tim Brower, Program Open Space

From: Glenn D. Therres, Wildlife and Heritage Service

Subj: Vienna Greenbelt

Date: October 26, 2007

The Wildlife and Heritage Service supports the proposed acquisition of a portion of the Layton Farm, LLC property near Vienna, while allowing for the development of remainder of the property in the immediate vicinity of the Town of Vienna. It could result in significant protection to the Mill Creek Natural Heritage Area (NHA). Natural Heritage Areas are ecologically valuable natural communities that contain threatened or endangered species, are a unique blend of geological, hydrological, climatalogical or biological features, and are considered among the best statewide examples of their kind. There are only 32 such areas designated in Maryland. The Mill Creek NHA is an expansive complex of tidal and nontidal wetlands along the Nanticoke River. The area supports two state-listed plant species and is a high quality wetland complex.

The proposal is that DNR would acquire fee simple Lot A (164.8 acres), the Steel Phillips et al. parcel (108.4 acres), and Lot B (1.89 acres). The landowner will retain Lot C (29.16 acres) and the Phillips Farm (70.7 acres) for future development considerations. For the portions being retained by the landowner, all forested buffers along the tidal creeks will be maintained and a minimum 100-ft buffer along the tidal creek and the NHA. The buffers for both the tidal creek and NHA start at the tidal wetland boundary with the uplands.

Though the normal buffer for Natural Heritage Areas in the Critical Area is 300 feet, it is the opinion of the Natural Heritage Program that this buffer can be reduced to 100 feet on the property to be retained by the landowner without adverse impacts to the NHA. The vast majority of the NHA is south of the tidal creek near the property to be retained for development. Fee simple acquisition of the property south of this tidal creek by the Department will ensure that much of the property draining into the NHA will remain undeveloped. The ability to permanently protect much of this property will offset the reduction in the buffer zone of the NHA. Similarly, a 100-foot buffer along the tidal creek will be adequate given the permanent protection afforded much of the property.

As far as management of the acquired property, there are several options but the best scenario would be to work out an agreement with the Town of Vienna to take management responsibility for the property with conditions. These conditions are to be worked out, but they would need to ensure protection of the NHA. The Natural Heritage Program will need to be a significant partner in the negotiations with the Town.

As the primary DNR agency responsible for the conservation of Natural Heritage Areas and endangered species, the Wildlife and Heritage Service is extremely excited about this project. Limiting development to the area adjacent to the Town of Vienna makes sense from a smart growth perspective, while permanent protection of the majority of the property will ensure conservation of the Natural Heritage Area and its ecosystem functions.

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Robert L. Ehrlich, Jr., *Governor*
Michael S. Steele, *Lt. Governor*
C. Ronald Franks, *Secretary*

MEMORANDUM

To: Ren Serey

From: Glenn Therres

Re: Vienna Village

Date: October 3, 2006

The proposed Vienna Village residential project is currently located in an area that has been designated as a Natural Heritage Area (COMAR 08.03.08.10). This site, which is one of only 32 across the entire state, was selected because it contains state listed species and is considered to be amongst the best Statewide examples of this tidal natural community type. The current level of intactness of this system as a whole, the lack of degradation overall, and the presence of viable populations of sensitive species makes this Natural Heritage Area truly a special place.

Given the nature of potential impacts associated with this development project, we would like to point out that under the authority of the Natural Resource Article 8-1808(d) it is a matter of policy for Natural Heritage Areas to be protected by local jurisdictions. This is clearly stated in the Habitat Protection Area provisions of Subtitle 18. We feel it is also important to note that under the provisions of the newly enacted Senate Bill 751 that guidelines pertaining to moving from an RCA to an LDA call for locating development at least 300 feet beyond the landward edge of tidal wetlands or tidal waters. Although these are in fact only guidelines, it underscores the fact that our General Assembly recognizes the importance of protecting ecologically important areas from undesirable impacts associated with development.

Env. Ass map

DNR's Wildlife and Heritage Service (WHS) evaluation of the proposed Vienna Village residential development project has been based on field work by WHS staff, data provided within the "Vienna Village Ecological Assessment" dated Nov. 28, 2005 and prepared by consultant Jeff Wolinski for Elm Street Development, a meeting between the developers, their representatives, and DNR on August 1, 2006, and further discussions within DNR. After a careful consideration of all the relevant factors we have decided to revise our earlier recommendations (June 29, 2006 letter to Mary Owens from Scott Smith, WHS) of a 300-foot buffer on all tidal wetlands within the project site. Our final position and recommendations are as follows:

1) Establish a 300-foot upland buffer on the existing Mill Creek Natural Heritage Area.

2) No lot lines should occur within this 300-foot buffer.

3) Establish a 100-foot buffer on all tidal wetlands within the project area.

4) No lot lines should occur within this 100-foot buffer.

5) The 300-foot and 100-foot wetland buffers should be reforested.

6) A process to control invasive plant species within these buffers and elsewhere on the site should be incorporated into development plans.

7) Velvety sedge (*Carex vestita*), a state threatened plant, was located by the developer's consultant along a field edge in the south-central portion of the property. This is an upland species that requires frequent disturbance. The former practice of brush-hogging of field edges every few years is what has been responsible for maintenance of this sedge population. It will be important to continue this type of management practice in this specific area to maintain the sedge, specifically late summer/fall mowing.

8) Apply environmentally sensitive design and low impact development methods to address stormwater runoff. Promote the use of nonstructural best management practices to the greatest extent possible, and in accordance with the following guidance:

   a. Pursue stormwater management methods, including but not limited to the use of sheet flow to buffers, vegetated channels (swales) to convey road runoff, and the disconnection of roof and non-roof runoff.
   b. Reduce impervious cover as outlined in the Maryland Department of Environment (MDE) Stormwater Management Manual, Section 5.8, available online at: www.mde.state.md.us/assets/document/chapter5.pdf.
   c. Pursue opportunities to include the use of shared parking/driveways and use of pervious materials wherever possible.
   d. Locate impervious surfaces as far as possible from permanent and intermittent streams and 100-year floodplains to enhance opportunities for filtration and moderation of stormwater runoff before entering the adjacent wetland system.

9) To minimize risk of sedimentation in the aquatic and wetland habitats and to minimize changes to the hydrology and water quality of these habitats:

   a. Special effort should be made to retain fine particle silt, sand and clay sediments. This may require the incorporation of redundant/additional control measures in the sediment and erosion control plan to ensure maximum filtration of any sediment-laden runoff (e.g. accelerated stabilization, super silt fence instead of silt fence, etc.)
   b. All sediment and erosion control measures should be inspected daily to ensure that they are maintained at a high functional level through all stages of development. Any problems should be corrected immediately.

It has also come to our attention that the applicant is currently beginning a hydrologic study of only sub-surface flows. We recommend that this study also include surface flows, and that an

independent third party hydrologic expert review the study design and results. No hydrologic changes to the tidal wetlands and the Natural Heritage Area should occur as a result of the development.

If clarification or additional information is needed, I can be contacted at 410-260-8572.

VIENNAVILLAGEBUFFER.MEM

cc: T. Larney
S. Smith

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Robert L. Ehrlich, Jr., *Governor*
Michael S. Steele, *Lt. Governor*
C. Ronald Franks, *Secretary*

June 29, 2006

Mary Owens
Chesapeake Bay Critical Area Commission
1804 West St., Suite 100
Annapolis, MD 21401

Subject: Proposed Vienna Village, Dorchester County

Dear Ms. Owens:

I have reviewed the "Vienna Village Ecological Assessment" dated Nov. 28, 2005 prepared by consultant Jeff Wolinski for Elm Street Development. I have also reviewed the "Summary of Vienna Village Concept Plan" dated June 20, 2006 prepared by Stephen Horn of Elm Street Development, including the associated maps showing the 100 and 300 foot buffers on tidal wetlands. Lastly, I met on site yesterday with Jeff Wolinski, Chris Frye (State Botanist, DNR Wildlife & Heritage), and Jennifer Lester of your staff.

Elm Street Development should be commended for attempting to develop an environmentally-friendly concept plan. The proposed areas for open space, wetland restorations, FIDS & DFS habitat afforestion, forested stream buffer establishment, and state-of-the-art stormwater management are all excellent attempts to reduce impacts to a very sensitive natural area, Mill Creek NHA, and the Wetland of Special State Concern. I offer the following comments:

1) Given that Jeff Wolinski has discovered additional state-listed plant species (swamp oats, velvety sedge) within the contiguous tidal stream corridor north of the NHA and that this corridor is ecologically connected with Mill Creek NHA, it is appropriate to expand the Habitat Protection Area (HPA) to include these rare elements and the entire contiguous tidal wetland corridor.

2) I am concerned about the potential negative effects the development and associated impervious surfaces will have on quality and quantity of surface and subsurface flow of water into the wetlands, specifically in how these will affect the rare plant communities. It is appropriate to expand tidal wetland buffers to a minimum of 300 feet throughout the property to attempt to mitigate these impacts. The map titled "300' Buffer Exhibit" from Steve Horn's packet clearly and correctly indicates the areas of expanded 300 foot buffer.

3) Currently the existing agricultural fields act as a transition zone and buffer between the town of Vienna and the unique and sensitive marsh ecosystem that encompasses Mill Creek NHA. The current zoned designation as a Resource Conservation Area (RCA) has been an appropriate designation to maintain that transition. The proposed growth allocation will change this to an Intensively Developed Area designation, resulting in the loss of that transition zone. Expanding tidal wetland buffers to a minimum of 300 feet will maintain some of the transition zone.

Wildlife & Heritage Service • P.O. Box 68 • Wye Mills, Maryland 21679
410-827-8612 • www.dnr.maryland.gov • TTY users call via Maryland Relay

4) Lot lines should not be included within this expanded 300 foot buffer. This area and all open space areas should be held in common by a landowner's association, the town or a conservation organization. These areas should all be placed in perpetuity in a conservation easement. The Wildlife and Heritage Service should be consulted for appropriate easement language, stressing maintenance of the rare plant communities and integrity of the marsh ecosystem.

5) State-of-the-art stormwater management will be very important to maintain existing hydrologic regimes. We recommend the developers follow MDE's new Stormwater Design Manual.

6) It is important to retain existing trees within the buffer. Afforestation of the remaining expanded buffer and open space areas should first consider allowing natural regeneration to occur before attempting to plant trees. I am concerned that seeds of invasive plant species will be inadvertently brought into the site during a tree planting and expand into sensitive natural areas.

7) Velvety sedge is an upland species that requires frequent disturbance. The former practice of brush-hogging of field edges every few years is what has been responsible for maintenance of this sedge population. It will be important to continue this type of management practice in this specific area to maintain the sedge, specifically late summer/fall mowing.

8) The water-dependent facility proposed for the northeast section of the Legg Farm will need further review by Larry Hindman, DNR Waterfowl Project Manager, as this area is a historic waterfowl concentration and staging area.

9) It is my understanding that Jeff Wolinski's report was considered preliminary, and in fact, a number of plant specimens that were collected from the property are still waiting to be identified by Charlie Davis. Depending on what species these plants are (e.g., state-listed or not), and where they were collected on the property, it is possible that the Wildlife and Heritage Service will have additional comments on potential impacts from this development.

In summary, Elm Street Development is to be commended for a sensitive concept plan. An expanded HPA to include all of the tidal wetlands and an expanded minimum 300 foot buffer will help maintain the ecological integrity of this important natural area. Please keep us informed as this project progresses.

Sincerely,

Scott A. Smith
Eastern Region Heritage Ecologist
Wildlife & Heritage Service

ER#2005.0785.do

Cc: G. Therres, DNR
T. Larney, DNR
L. Hindman, DNR
L. Byrne, DNR

Hoerger, Lisa

From: Owens, Mary
Sent: Monday, December 19, 2005 9:13 AM
To: 'Jeffwolinski@aol.com'
Cc: Hoerger, Lisa; Esslinger, Regina; Chandler, LeeAnne
Subject: RE: Vienna Village

Jeff,

It sounds like you have some great ideas about how to proceed on this, and the Commission always appreciates it when the environmental information is researched and made available at the beginning stages of the project. Lisa Hoerger is the planner in our office that handles Vienna, and LeeAnne Chandler is the Commission's Science Advisor, so they will definitely need to be involved. Regina Esslinger and I may split responsibilities depending on the scheduling. Tracey Gordy is the MDP Circuit Rider that handles Vienna, so she should also be on the list. Wanda Cole is the Dorchester County Planner, who worked on the clearing violation on the site, and she will likely be involved in the growth allocation, so I would include her as well. It would probably be good to have a tidal wetlands person from MDE, and that would be Stan Causey. He is going to be retiring in March, but it would be good to have his input in the early meetings.

At this time, we are probably looking at the end of January before we could get out there, so hopefully that will work with everyone else's schedule. If you need numbers, e-mail addresses, or other contact information, let me know.

Mary R. Owens
Critical Area Commission
Chesapeake and Atlantic Coastal Bays
1804 West Street, Suite 100
Annapolis, MD 21401
(410) 260-3480

-----Original Message-----
From: Jeffwolinski@aol.com [mailto:Jeffwolinski@aol.com]
Sent: Thursday, December 15, 2005 3:05 PM
To: Owens, Mary
Subject: Vienna Village

Mary:

As I hinted at in my last correspondence in regard to the Waterford Estates stream issue, I am working on a big eastern shore project that will generate alot of interest (and also will have some interesting stream/ditch calls). We're finally ready to start the dialogue with the agencies for the proposed Vienna Village development which will expand the town of Vienna. I'm sure you have had some notice of this project.

I started on this project back in 2003 when I did a preliminary assessment of the Phillips farm property for The Conservation Fund, who is working with the town. This led to my being retained by Elm Street Development to help them through the development process. I've been busy with a number of studies through the past year to get a good baseline of data together to guide the planning process. I've put together what I think is an all star cast - Charlie Davis is working with me to conduct detailed plant community surveys and Bill Sipple worked with me on the wetland delineation. I know some folks have less than ideal feeling towards Elm Street (Scott Smith in particular!) but to their credit they have spared no expense to date in doing good conservation science on the site. Charlie and Bill are probably two of the last people you want poring over your site if you're a developer! Elm Street is also 100% behind my plans to involve the agencies in every step of the process. I believe this should be a collaborative process rather than an adversarial one.

I've completed a preliminary ecological assessment of the site that I will be distributing to all interested regulators. This presents the initial findings of our plant surveys and wetland delineation, along with other general site information and recommendations. We have documented several new RTE occurrences on the site, and the wetlands have been surveyed and we are waiting for the final plot plan. I want to get out this introductory report before we go for a final JD of the wetlands.

I have proposed that we host an introductory presentation of the site findings and the preliminary development plan, with a tour of the site, hopefully sometime in January. I'd like to send out the preliminary report with invites to all of those that would be involved in reviewing this project. You were first on my list to contact - the others I have thought of are listed below. Any other suggestions?

Scott Smith, DNR Heritage
Maria Lasek, COE
Ace Adkins, MDE
George Skinner, NRCS
Mary Ratnaswamy, USFWS

I also though of Chris Frye and Larry Hindman of DNR, but thought that Scott could act as the DNR contact. Are there any other CBCAC staff that should be involved? What about Dorchester County?

I'd appreciate any input you could give.

Jeff Wolinski

Mill Creek Natural Heritage Area
(Critical Area Site DO NHA-21)

County: Dorchester USGS Quad: Mardela Springs

SUMMARY OF ECOLOGICAL SIGNIFICANCE:

Mill Creek Natural Heritage Area is an expansive complex of tidal and non-tidal wetlands. About two-thirds of the area is comprised of an "extensive marsh" type along the Nanticoke River. This type of marsh is of similar length and width and is drained by many tidal channels and creeks which have some freshwater input from land. It is occupied by two communities, a Tidal Freshwater Mixed Community and a Tidal Mudflat Community. The Freshwater Mixed Community is characterized by Giant Cordgrass (Spartina cynosuroides), Wild Rice (Zizania aquatica), Arrow arum (Peltandra virginica), Cutgrass (Leersia oryzoides), Marsh Mallow (Hibiscus moscheutos), Marsh Elder (Iva frutescens), Waterdock (Rumex verticillatus), Switchgrass (Panicum virgatum), and a variety of other species. The Tidal Mudflat Community is non-vegetated, exposed at low tide, and is characterized by spionid worms, mud snails, razor clams, and bloodworms. Other polychaetes, mollusks, and crustaceans also are present.

The above communities also occur along Mill Creek, a drowned creek valley. Populations of the above plant species segregate generally into zones along the salinity gradient from head to mouth. Contiguous with the tidal communities are four types of non-tidal wetlands; a seasonally flooded mixed-deciduous wetland, a seasonally flooded scrub/shrub wetland, a seasonally flooded pine-deciduous wetland, and an intermittently flooded pine-deciduous wetland. Portions of the latter have been converted to loblolly pine monocultures.

The Tidal Freshwater Mixed Community is one of the most important marsh types, based on total ecological value. It is among the highest in productivity and wildlife and waterfowl utility, and is usually closely associated with fish spawning and nursery grounds. This community is also highly valued as a natural shoreline stabilizer and sediment trap for upland runoff. The 3-5 tons of plant biomass produced per acre each year is fully accessible to the estuary. In addition, it supports at least two State-listed species, the Threatened Spongy Lophotocarpus (Sagittaria calycina) and the Endangered Marsh Wild Senna (Cassia fasciculata var. macrosperma). The latter is also a candidate for Federal listing, and the population at Mill Creek is the only one known in the State.

The Mud Flat Community is highly important as foraging area for waterfowl, sport and commercial fishes, and many other species of food web value in the marine ecosystem. It also interacts significantly with adjacent vegetated areas in the cycling of nutrients, and the Mud Flat Community is probably the most important of the three tidal flat communities for nutrient cycling.

The non-tidal wetland communities are part of the same expansive complex. Besides providing plant and wildlife habitat, these wetlands are very important filters for upland runoff, especially when excessive levels of nutrients, pesticides, and sediment occur. Furthermore, they discharge freshwater into contiguous tidal marsh communities and thus contribute to their high productivity and species diversity.

ELEMENT SUMMARY TABLE:

Element	Common Name	Status
Cassia fasciculata var. macrosperma	Marsh Wild Senna	Endangered
Sagittaria calycina	Spongy Lophotocarpus	Threatened

OTHER VALUES AND SIGNIFICANCE

Because of the high species diversity and productivity of this wetland complex, waterfowl hunting and fishing are current recreational uses. The area is also valuable for passive recreational activities such as birdwatching.

THREATS AND MANAGEMENT NEEDS:

Primary threats to the Area are excessive nutrient, pesticide, and sediment loading from agricultural land, and timbering of non-tidal wetlands. The former could be reduced by flanking tributaries of Mill Creek with naturally vegetated 25-foot setbacks. Currently, most of the length of these drainage channels are completely lacking in vegetative buffers, although they cross agricultural land. Of special concern are the tidal tributary leading into the head of Mill Creek, which has been ditched and cleared of vegetation, and a sizeable portion of a non-tidal wetland which also has been cleared of vegetation. Proper management of the drainage area of Mill Creek would contribute to better water quality in the Creek as well as in the Nanticoke River, a major tributary of the Chesapeake Bay.

Timbering of non-tidal wetlands would increase nutrient and sediment runoff. In addition, groundwater discharge into the Tidal Freshwater Mixed Community would be altered; the effect of this alteration on the two State-listed species is unknown. However, adherence to the Critical Area Criteria would preclude this and other potential threats to the Natural Heritage Area. Specific provisions of the Criteria are discussed in the next section.

BOUNDARY DISCUSSION:

The Natural Heritage Area boundary is also the boundary of Habitat Protection Areas for the two State-listed species. Pursuant to the Criteria, the boundary of the Buffer must be expanded to include all non-tidal wetlands since they are "contiguous, sensitive areas ... whose development or disturbance may impact streams, wetlands, or other aquatic environments (14.15.09.01.C(7)). As a result, the entire Natural Heritage Area falls inside the Buffer.

The following activities are specifically allowed in portions of Habitat Protection Areas inside the Buffer, assuming rare and endangered species are not adversely affected:

Hunting
Fishing
Trapping
Educational Pursuits
Scientific observation
Non-commercial, passive recreation; e.g.,
    Hiking
    Nature photography [14.15.10.N]

Cutting of trees for personal use, if replaced on an equal basis and does not impair water quality or habitat value [14.15.09.01.C(5)c]

Individual private piers installed and maintained by the riparian landowner [14.15.03.01.C]

Public beaches, launching and docking facilities, fishing piers if 5 requirements are met [14.15.03.08]

One subdivision-owned slip, pier, or mooring buoy per 300 feet of shoreline [14.15.03.07]

Water-dependent research facilities [14.15.03.09]

Commercial water-dependent fisheries facilities [14.15.03.10]

The following activities are specifically <u>disallowed</u> in portions of Habitat Protection Areas inside the Buffer, assuming rare and endangered species are not adversely affected:

Development activities, including structures, roads, parking areas and other impervious surfaces, mining and related facilities, or septic systems
EXCEPT: Activities associated with acceptable water-dependent facilities [14.15.09.01.C]

Industrial and port-related facilities, and non-public marinas [14.15.03.05 and .06]

Bridges and utilities unless no feasible alternative exists [14.15.02.04.C(1)(b)]

Dredged spoil disposal except for:

a. backfill for permitted shore erosion protection structures
b. use in approved vegetated shore erosion projects
c. placement on previously approved channel maintenance spoil disposal areas
d. beach nourishment [14.15.03.04(7)]

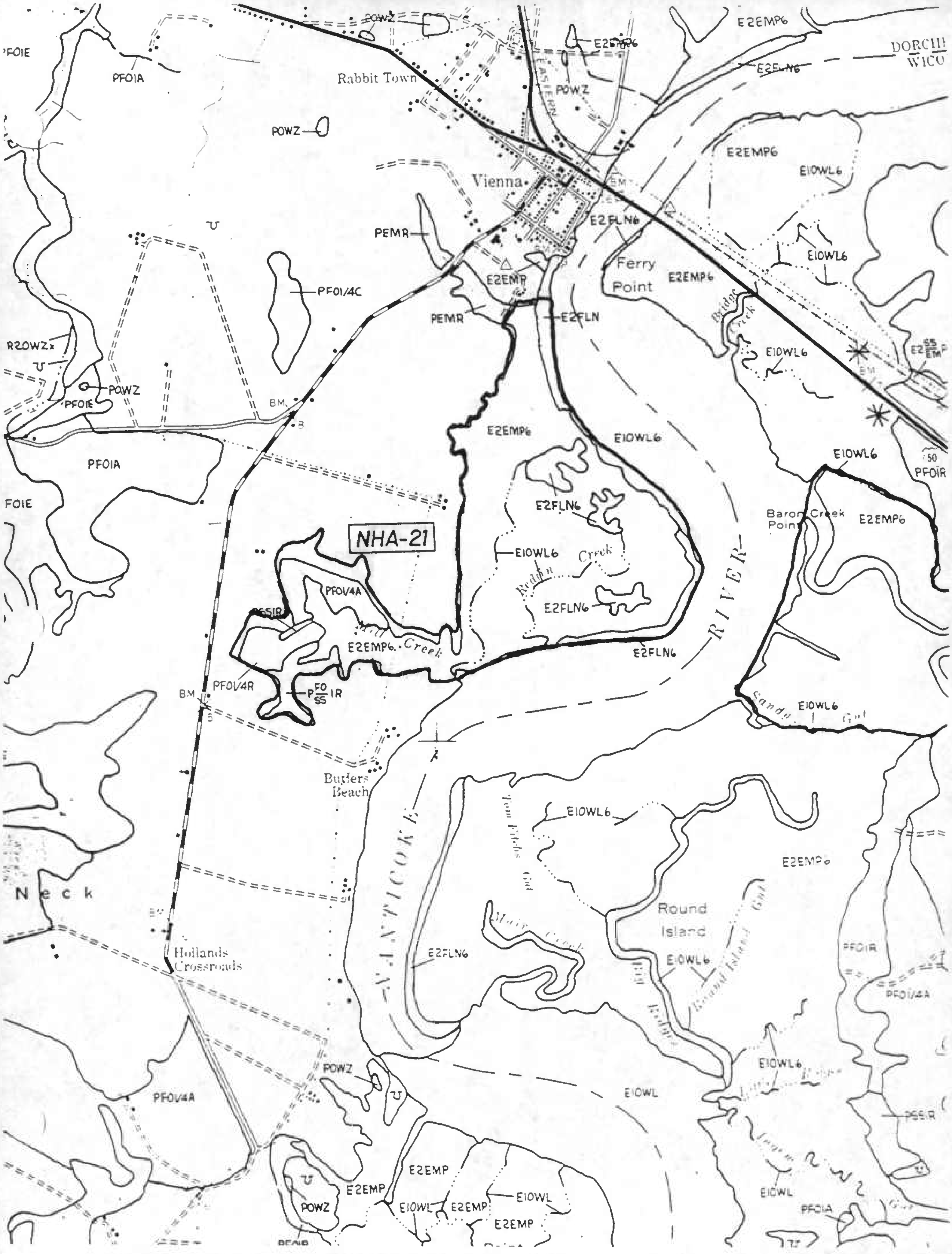
Clearing of existing natural vegetation except

a. to provide access to private piers
b. to install or construct a legally permitted shore protection device or measure
c. to install or construct a legally permitted water-dependent facility [14.15.09.01.C(4)(e) & (5)(c)]

Farming activities, including the grazing of livestock [14.15.09.01.C(4)(F)]

Commercial harvesting of trees [14.15.09.01.C(5)(a)].

Threatened and Endangered Species Habitat Protection Areas also are protected from other development activities and disturbances "... unless it can be shown that these activities or disturbances will not have or cause adverse impacts on these habitats (14.15.03.C(2)(a)). Therefore, any proposed activity should be reviewed on a case-by-case basis to assure adequate enforcement of this and other provisions.



NHA-21
Rabbit Town
Vienna
Ferry Point
Baron Creek Point
Bridge Creek
Redden Creek
Mill Creek
Butlers Beach
Hollands Crossroads
Neck
NANTICOKE RIVER
Round Island
Round Island Gut
Tom Fields Gut
Sandy Gut
DORCH
WICO
PFO1A
PFO1E
POWZ
R2OWZx
PFO1/4C
PEMR
E2EMP
E2FLN
E2FLN6
E2EMP6
E1OWL6
E1OWL
PFO1R
PFO1/4A
PSS1R
PFO1/4R
PFO1/4A
E2EMP

In addition to the above provisions which are applicable to all types of Habitat Protection Areas, a minimum 25-foot buffer is required around non-tidal wetlands (14.15.09.02.C(3)(b)(i)). Furthermore, the hydrologic regime and water quality of non-tidal wetlands are to be protected "... by providing that development activities or other land disturbances in the drainage area of the wetlands will minimize alterations to the surface or subsurface flow of water into and from the wetland and not cause impairment of the water quality or the plant and wildlife and habitat value of the wetland." (14.15.09.02.C(3)(b)(ii).) Other provisions also may be applicable.

(August 1988)

Robert L. Ehrlich, Jr.
Governor

Michael S. Steele
Lt. Governor

C. Ronald Franks
Secretary

W. P. Jensen
Deputy Secretary

Maryland Department of Natural Resources
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

August 12, 2003

Ms. Sara Elliott
The Conservation Fund
1800 North Kent Street, Suite 1120
Arlington, VA 22209-2156

RE: Environmental Review for Property in and adjacent to Town of Vienna, Dorchester County, Maryland.

Dear Ms. Elliott:

The Wildlife and Heritage Service's Natural Heritage database indicates that there is a Natural Heritage Area (NHA) known as Mill Creek NHA known that appears to overlap with your study area. Activities within NHAs are regulated so that the structure and species composition of the area are maintained. Please see the attached map for the approximate boundaries of this NHA.

The Wildlife and Heritage Service has the following recent records for species of concern known to occur within the vicinity of the project site. These species could potentially occur on the study area itself, especially in areas of appropriate habitat. Most of these records area associated with the NHA:

Scientific Name	Common Name	State Status
Chamaecrista fasciculata var. *macrosperma*	Marsh Wild Senna	Endangered
Sagittaria calycina	Spongy Lophotocarpus	Rare
Carex hyanlinolepis	Shoreline Sedge	Rare
Bidens coronata	Tickseed Sunflower	Rare

Also, the Delmarva fox squirrel, a state and federally listed endangered species, is known to occur on or in the immediate vicinity of the property. Protection of endangered species habitat is required within the Critical Area. Delmarva fox squirrel habitat is generally characterized as forests with relatively mature trees, either hardwoods or loblolly pine, with a relatively sparse understory. The following guidelines are routinely provided to planners and developers for the conservation of Delmarva Fox Squirrel habitat:

Page 2
August 12, 2003

If your proposed activities do not occur within the forested areas on the property, then Delmarva fox squirrel habitat will not be impacted. However, if development in the forested areas or timber harvesting is being planned, the following should be considered:

1. As much contiguous forested acreage as possible should be retained.

2. If clearing is necessary, at least 25% of the suitable forested area should remain unaltered or a minimum of 10 acres whichever is greater.

3. This unaltered Delmarva fox squirrel habitat should be retained as a contiguous forested tract, not as small disjunct parcels.

4. Required forested buffers, such as buffers along streams or nontidal wetlands, should be expanded to at least 100 feet and preferably 300 feet in width.

5. Retention of mast producing trees such as oaks, hickories and beech is encouraged.

In addition, the wetland on site associated with Mill Creek is designated in state regulations as a Wetland of Special State Concern (WSSC) and regulated by Maryland Department of the Environment. Your project may need to be reviewed by Maryland Department of the Environment for any necessary wetland permits associated with the WSSC.

Also, the forested area on the project site contains potential Forest Interior Dwelling Bird Habitat. The conservation of this habitat is mandated within the Critical Area and must be addressed by the project plan. The following guidelines are routinely provided to planners and developers for conservation of FIDS habitat:

1. Restrict development to nonforested areas.

2. If forest loss or disturbance is absolutely unavoidable, concentrate or restrict development to the perimeter of the forest (i.e., within 300 feet of the existing forest edge), particularly in thin peninsulas of upland forest less than 300 feet wide.

3. Limit forest removal to the "footprint" of houses and to that which is absolutely necessary for the placement of roads and driveways.

4. Wherever possible, minimize the number and length of driveways and roads.

5. Roads and driveways should be as narrow and short as possible; preferably less than 25 feet long and 15 feet wide.

Page 3
August 12, 2003

6. Maintain forest canopy closure over roads and driveways.

7. Maintain forest habitat up to the edges of roads and driveways; do not create or maintain mowed grassy berms.

8. Maintain or create wildlife corridors.

9. Do not remove or disturb forest habitat during April-July, the breeding season for most FIDS. This seasonal restriction may be expanded to February-July if certain early nesting FIDS (e.g., Barred Owl) are present.

10. Afforestation efforts should target (1) riparian or streamside areas that lack woody vegetation, (2) forested riparian areas less than 300 feet, and (3) gaps or peninsulas of nonforested habitat within or adjacent to existing FIDS habitat.

The presence of FIDS habitat can be confirmed by a qualified observer using standardized procedures outlined in the Critical Area Commission's document entitled "A Guide to the Conservation of Forest Interior Dwelling Birds in the Chesapeake Bay Critical Area" dated June 2000.

Finally, the open waters that are adjacent to or part of the site are known historic waterfowl concentration areas. If there is to be any construction of water-dependent facilities a time-of-year restriction on work may be recommended by us.

Attached is a listing for all RT&E records known to occur on the Mardela Springs Quad, as requested. Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, feel free to contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne
Environmental Review Coordinator,
Wildlife and Heritage Service
Maryland Department of Natural Resources

ER# 2003.0727.do
Cc: R. Esslinger, CAC
S. A. Smith, DNR
Attachments (2)

Mardela Springs Quad – RT&E Records from MD Natural Heritage Database
August 12, 2003

Scientific Name	Common Name	State Status	Date
Aeschynomene virginica	Sensitive Joint-vetch	Endangered, also Federally Endangered	1906
Agalinis setacea	Thread-leaved Gerardia	Endangered	1992
Alnus maritima	Seaside Alder	Rare	1976
Ambystoma tigrinum	Eastern Tiger Salamander	Endangered	1933
Ammodramus henslowii	Henslow's Sparrow	Threatened	1987
Aster spectabilis	Showy Aster	Endangered	1906
Bidens coronata	Tickseed Sunflower	Rare	1993
Bidens mitis	Small-fruited Beggar-ticks	Endangered	1996
Carex glaucescens	A Sedge	Endangered	1999
Carex hyalinolepis	Shoreline Sedge	Rare	1993
Carex striatula	Lined Sedge	Rare	1998
Chamaecrista fasciculate var. *macrosperma*	Marsh Wild Senna	Endangered	1996
Cistothorus platensis	Sedge Wren	Threatened	1984
Desmodium rigidum	Rigid Tick-trefoil	Endangered	1993
Desmodium strictum	Stiff Tick-trefoil	Endangered	1995
Desmodium viridiflorum	Velvety Tick-trefoil	Watchlist	1995
Eleocharis rostellata	Beaked Spikerush	Rare	1995
Erianthus contortus	Bent-awn Plumegrass	Threatened	1997
Fraxinus profunda	Pumpkin Ash	Rare	1993
Haliaaetus leucocephalus	Bald Eagle	Threatened, also Federally Threatened	2000
Lampsilis radiata	Eastern Lampmussel	Uncertain	1993
Myrica heterophylla	Evergreen Bayberry	Endangered	1997
Nerodia erythrogaster erythrogaster	Redbelly Water Snake	Rare	1987
Pilea Fontana	Coolwort	Watchlist	1993
Platanthera blephariglottis	White Fringed Orchid	Threatened	2000
Plantanthera cristata	Crested Yellow Orchid	Threatened	1993
Polygala cruciata	Cross-leaved Milkwort	Threatened	2000
Rhynchospora glomerata	Clustered Beakrush	Threatened	1910
Rhynchospora microcephala	Tiny-headed Beakrush	Rare	1987
Rhynchospora torreyana	Torrey's Beakrush	Threatened	2000
Saccharum alopecuroidum	Woolly Beardgrass	Rare	1993
Sagittaria calycina	Spongy Lophotocarpus	Rare	1988
Sagittaria engelmanniana	Engelmann's Arrowhead	Threatened	1925
Sarracenia purpurea	Northern Pitcher-plant	Threatened	1993
Solidago speciosa	Showy Goldenrod	Threatened	1995
Tephrosia spicata	Southern Goat's Rue	Endangered	1995
Trichostema setaceum	Narrow-leaved Bluecurls	Rare	1998

Please note that most bird records are breeding records and that the date shown is the most recent observation date. Watchlist species shown here are only for those that are actively tracked by our program.

ELM STREET
DEVELOPMENT

August 30, 2006

Ms. Mary Owens
Chief, Program Implementation Division
1804 West Street, Suite 100
Annapolis, Maryland 21401
(410) 260-3480

Dear Ms. Owens:

The purpose of this letter is to provide you with a brief update on our intended course of action concerning the proposed Vienna Village project in Vienna, Maryland. The meetings with Critical Areas Commission staff, Program Implementation Subcommittee, and representatives from Maryland Department of Natural Resources – Wildlife and Heritage Service in recent months have been informative. We will use the feedback gathered in these meetings to assist us with the project moving forward. The efforts of all of those involved thus far are certainly appreciated.

As you know, Elm Street Development has invested a significant amount of resources in the development of an extensive ecological assessment on the property that has, among other things, delineated the wetlands and identified the Rare, Threatened, and Endangered ("RTE") species on-site. This environmental study has served as the foundation upon which all planning activities have taken place to date. These activities include the public design charrette that was conducted from July 18th – 20th at the community building in Vienna and the creation of individual management and protection programs for each of the individual RTE species identified in and around the site.

We realize, however, that in order for the Critical Areas Commission to provide more specific guidance on the wetland buffer issue, further study needs to be performed to quantify the benefits of our proposed stormwater management program and its effects on sub-surface hydrology. To this end, Elm Street Development will contract with an expert in the fields of low impact development techniques and stormwater management to perform this analysis. Once we believe we have sufficient data to continue a meaningful discussion with the Commission, we will be back in touch.

Thank you for your continued assistance with this project. Please don't hesitate to call if you have any questions.

Sincerely,

Stephen M. Horne
Project Manager

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175 Admiral Cochrane Drive, Suite 204
Annapolis, Maryland 21401
Phone: (410) 266-9700
Fax: (410) 266-9165

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☐ *Ellicott City*
5094 Dorsey Hall Drive, Suite 104
Ellicott City, Maryland 21042
Phone: (410) 720-3021
Fax: (410) 720-3035

cc: Ed Baker, Attorney, Town of Vienna
Russell Brinsfield, Mayor, Town of Vienna
Tracey Gordy, Maryland Department of Planning
David Mayfield, The Conservation Fund
Karen R. McJunkin, Elm Street Development

ELM STREET
DEVELOPMENT

June 7, 2006

Ms. Jennifer Lester
Natural Resources Planner, Dorchester County
Maryland Critical Area Commission
1804 West Street, Suite 100
Annapolis, Maryland 21401
(410) 260-3481

Dear Ms. Lester:

Thank you for placing us on the agenda for the July 5th meeting of the Critical Area Commission. We are excited to have the opportunity to present the Vienna Village project to your organization and look forward to working with you.

In response to the feedback we received at our last meeting, I have prepared an information package on the project which will provide you with the background information you need to prepare for the upcoming meeting. The following documents/exhibits have been included:

- Summary of Concept Plan
- 100' Buffer Plan (buffer acreages and major plan elements included)
- 300' Buffer Plan (buffer acreages and major plan elements included)
- Growth Allocation Plan
- Conceptual Rendering of Waterfront Park
- Ecological Assessment Report
- Article from Washington Post (references project)

If you have any questions on any of these materials or would like additional information, please don't hesitate to call. Thank you again for your time and consideration.

Sincerely,

Stephen M. Home
Project Manager

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Summary of Vienna Village Concept Plan

- 2003 Town of Vienna Community Vision Plan was adopted on December 22, 2003. Four major goals of the document were:
  - To accommodate moderate and appropriate future growth and economic development while sustaining the small town character, special natural environment, working rural landscapes and historical character of Vienna.
  - To enhance the Vienna community's quality of life by providing community amenities for residents, business and visitors.
  - To enhance and protect the significant cultural and natural resources within Vienna and the surrounding area.
  - To maintain the rural legacy of the Vienna area by protecting significant scenic vistas, farms and forests surrounding the Town.

- Details of the Concept Plan:
  - Total of 300 units planned for 376 acre parcel.
  - 64% (242 acres) of the total site will consist of open space, sensitive area buffers, and conservation land.
  - Land within the development envelope represents 36% (134 acres) of total parcel.
  - 30% (113 acres) of the land will be dedicated to the Town for the establishment of a village green, town park, and various other "public" spaces. This area is in addition to critical area buffers, tidal and non-tidal wetlands, and other regulated areas.
  - Nanticoke waterfront of the Legg Farm will be conveyed to the Town for use as a public waterfront park.
  - Vienna Riverwalk south of existing Waterfront Park will be continued to the Legg Farm.
  - Existing street framework in Town will be extended into new development to provide for a seamless transition into the community.
  - Capital improvement projects will be initiated and funded by Elm Street to repair, upgrade, and increase capacity of existing systems to meet the needs of future growth.
  - Net costs associated with the impact of the development on various Town services such as police, fire and rescue, emergency medical technician responses, code enforcement, park maintenance, and trash collection will be identified and paid for by Elm Street.

- Environmental Focus and Benefits of the Concept Plan:
  - Professional ecologists have performed an extensive wetland delineation and have identified all rare, threatened, and endangered species on and near the site. This data has been incorporated into the plan to ensure sensitive areas receive adequate protection.
  - Preliminary ecological assessment report (enclosed with package) produced by Jeff Wolinski has been published to document research work performed on-site to date.
  - State of the art storm water management techniques, such as bio-retention facilities, will be utilized to prevent negative effects from runoff.
  - On-site wetlands in certain areas will be restored to original site hydrology.
  - Western and southern edges of the development will be reserved for a Town greenbelt upon which a conservation easement will be placed to protect the land from future development and prevent sprawl further down the peninsula. Afforestation is a possibility for this 125 acre area.
  - Network of walking paths that connect the development to the existing Town and the surrounding greenbelt will be built. Environmental-related educational opportunities will be incorporated into this trail network.

Prepared by Stephen M. Horne, Elm Street Development 6/7/2006

CRITICAL AREA COMMISSION
CHESAPEAKE AND ATLANTIC COASTAL BAYS
1804 West Street, Suite 100
Annapolis, Maryland 21401

MEMORANDUM

To: Scott Smith, DNR - Heritage

From: Mary Owens, CAC MRO

Date: May 19, 2006

Subject: Vienna Village

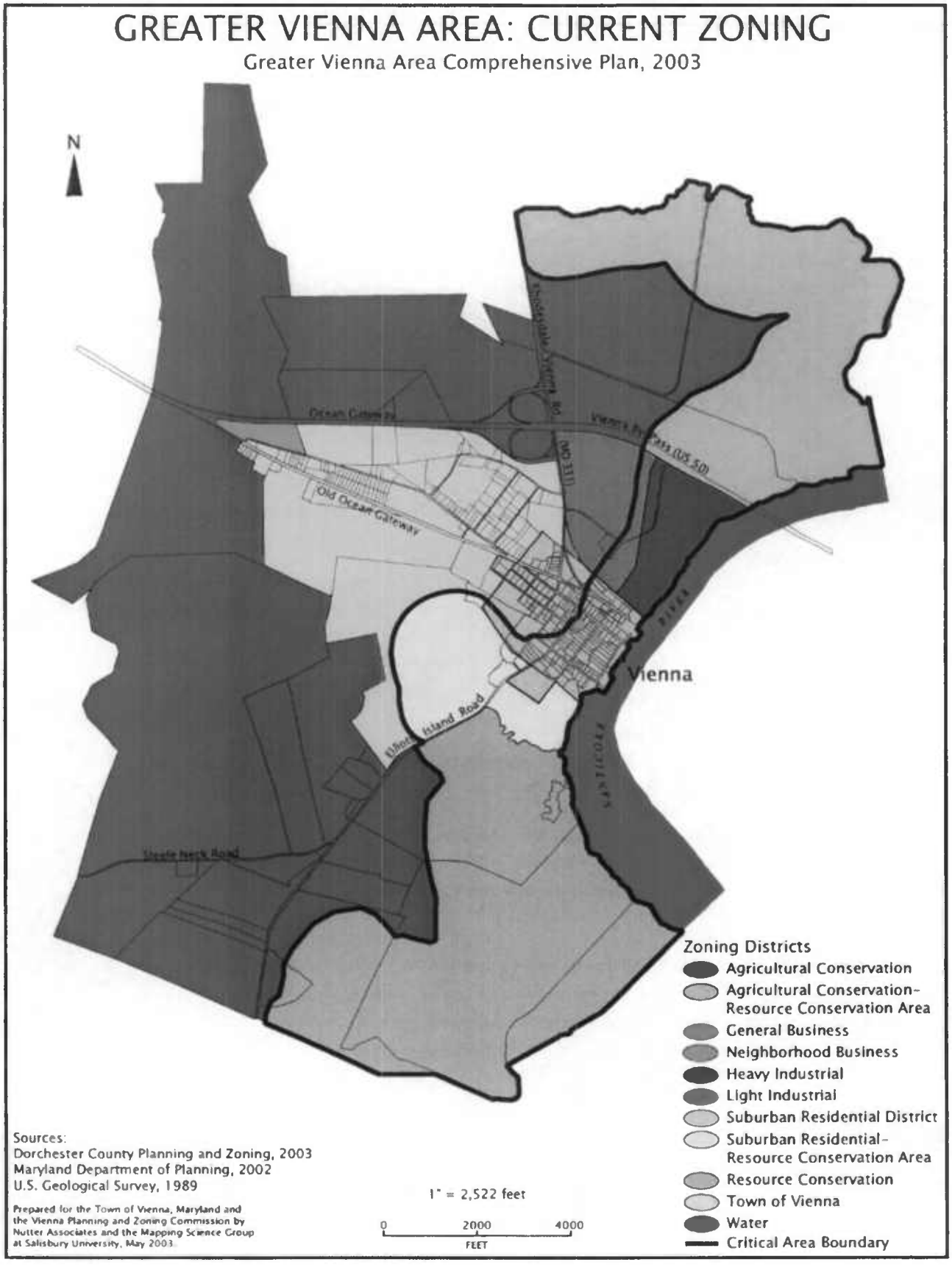
Enclosed is a copy of the "Vienna Villaghe Environmental Assessment" and a copy of the preliminary plan showing areas to be developed (gold) and areas to be conserved (green). The 100-foot Buffer is also shown. The Town and the developer met with Commission staff a couple of weeks ago to discuss this proposal.

It is likely that they are going to want to come to the Program Subcommittee for preliminary feedback at the July meeting. If at all possible, I would like to have written comments from you, even if they are preliminary, by June 15, 2006.

I will contact you next week to discuss what they have submitted. In the interim, if you have any questions, please call me at (410) 260-3480.

VIENNA COMMUNITY VISION PLAN SUMMARY – JANUARY 2003

- Prepared by The Conservation Fund in collaboration with the Town of Vienna.
- Involved intensive six-month process that began in July 2002. Process involved community surveys, individual interviews, and two community meetings.
- The Conservation Fund assessed the physical, historical, land use, infrastructure, hydrological, community facilities, and environmental features of the Town.
- Four development alternatives were presented to the community: Build Out (maximum build out based on current zoning); Historic Village (preserve historic character and provide limited residential and commercial development); Commercial Center (focuses on economic development, tourism, and community amenities); and Town Green (model conservation-oriented waterfront community).
- After seeking input on the four alternatives and doing an analysis of the goals and objectives expressed by the community, the final vision for Vienna is a model conservation-oriented community that respects its heritage while planning responsibly for its future - A Model Chesapeake Community.
- The final plan establishes a 20-year vision for the Town.
- Overall vision is to keep Vienna's "small town character" intact while allowing for a responsible level of growth and development.
- Vienna's goal is to become a "Conservation Gateway" to the Chesapeake and to serve as a model of conservation development in the Chesapeake Bay Watershed.
- In conjunction with, and equally important as the growth and development goals, Vienna is committed to maintaining the rural legacy of the area by protecting significant scenic vistas, farms, and forests surrounding the Town.
- Aside from infill, the area proposed in the Plan for future residential development is basically restricted to the properties optioned by Elm Street.
- The Dorchester County Comprehensive Plan and Zoning Ordinance designate these areas for town growth. The county zoning is Suburban Residential - RCA, which means that, with growth allocation, these lands are planned for densities consistent with PFA criteria (4 dwelling units per acre - See Map).
- As previously mentioned, land protection is a vital part of the Town's overall development strategy. As part of the Nanticoke Rural Legacy Area, efforts are underway to protect 21,000 acres of privately-owned farmland in the area surrounding Vienna. Aside from the Rural Legacy Program, additional conservation efforts are also planned and currently being negotiated (See Map).


GREATER VIENNA AREA: CURRENT ZONING
Greater Vienna Area Comprehensive Plan, 2003
N
Old Ocean Gateway
Vienna
Zoning Districts
Agricultural Conservation
Agricultural Conservation-Resource Conservation Area
General Business
Neighborhood Business
Heavy Industrial
Light Industrial
Suburban Residential District
Suburban Residential-Resource Conservation Area
Resource Conservation
Town of Vienna
Water
Critical Area Boundary
Sources:
Dorchester County Planning and Zoning, 2003
Maryland Department of Planning, 2002
U.S. Geological Survey, 1989
Prepared for the Town of Vienna, Maryland and the Vienna Planning and Zoning Commission by Nutter Associates and the Mapping Science Group at Salisbury University, May 2003.
1" = 2,522 feet
0
2000
4000
FEET

2003 GREATER VIENNA COMPREHENSIVE PLAN

G. Land Conservation

The Greater Vienna area enjoys the benefit of an extraordinary and unique regional partnership for land conservation. This active stewardship of the community's prime farmland, rich forests and pristine Chesapeake Bay tributaries involves many Town, County, State, Federal and Foundation entities. The Nature Conservancy, The Conservation Fund and Dorchester County are implementing a very strong land conservation program around Vienna. The overall program involves the Rural Legacy Program, the Maryland Agricultural Land Preservation Foundation (MALPF) program, special acquisition agreements, Maryland's GreenPrint program, the federal Delmarva Conservation Corridor, and federal Conservation Resource Enhancement Program (CREP).

A major component is the Nanticoke Rural Legacy Area (RLA) Plan, which was funded by the State in 2002. It consists of 21,000 acres of land targeted for conservation efforts to the north, west and south of Vienna. The 5-year goal of the Rural Legacy Plan is to ensure permanent protection of 13,650 acres or 65% of the RLA. As the exhibit entitled Nanticoke Rural Legacy Program illustrates, the entire planning area is included within the designated Rural Legacy Area. The program establishes an effective Town Growth Boundary (TGB) around Vienna by purchasing conservation easements on a greenbelt of farms, working forests and natural resource areas. Within the Legacy Area, 7608 acres are now permanently protected under conservation easements or other mechanisms including fee-simple ownership of conservation organizations and the State of Maryland. This is a total of 36% of the designated RLA.

The mission of the Rural Legacy program is to protect state and nationally significant farms, forests and plant and wildlife habitat areas. In the Greater Vienna area, these include the LeCompte Wildlife Management Area, three Natural Heritage Areas and a designated Nontidal Wetland of State Concern (which provides habitat for 24 rare species). This area is characterized by high quality brackish freshwater wetlands, Atlantic white cedar swamps, ancient dunes, Delmarva Fox Squirrel habitats, Bald Eagle nest habitats and numerous rare plant species. The RLA also represents a crucial link in a 45-mile riparian corridor from Fishing Bay and Blackwater on the south, the Chesapeake Bay on the west, the Maryland Nanticoke Wildlife Area on the east and the companion Marshyhope RLA on the north.

Over 875 acres on 2 farms were protected with Fiscal Year 2002 RLA funds. These included 100 acres of CREP easements, 500 acres of cropland and 300 acres of forest habitat for several rare species. Over 2,952 acres have been protected within the RLA with Maryland Agricultural Land Preservation Foundation and Maryland Green Print funds. The State of Maryland owns approximately 3000 acres within the RLA and The Nature Conservancy has 450 acres preserved. Over 2,000 acres on 2 parcels are to be protected with 2003 RLA funds, including the largest family farm in Dorchester County (1,600 acres) and a large block of working forests with rare Delmarva Bay wetlands (450

2003 GREATER VIENNA COMPREHENSIVE PLAN

acres). By the end of 2003, it is expected that over 45% of the RLA, some 9,600 acres of land, will be protected by various programs.

The RLA Team, which includes a variety of public and non-profit sponsors working closely with the Town of Vienna, has organized planned acquisitions according to 3 levels of priority. The first priority includes Nanticoke River waterfront parcels or parcels which form part of the Town Growth Boundary for Vienna. The second priority is waterfront land on Marshyhope Creek. The third priority is inland parcels which link other already protected lands. The RLA has received approval for an Easement Valuation System based on a Master Appraisal.

With this foundation for a strong conservation program implemented by a multi-faceted partnership, it is believed that the protection of the rural landscape around Vienna will be successful for many years to come.

Delmarva Conservation Corridor

The Greater Vienna Area should participate actively in the new Delmarva Conservation Corridor program which U.S. Representative Wayne T. Gilchrest (R-Maryland-1st) has championed. The program was successfully included in the Farm Bill of 2002. Its implementation program is now under active review by the U.S. Department of Agriculture. Its aim is to broadly support agriculture on the Delmarva Peninsula. It emphasizes the need to preserve agricultural land. Action would include: developing alternative crops, new technologies and new forms of agricultural businesses. Also included would be forest buffers along waterways, new forms of agricultural marketing and upgrades for municipal wastewater treatment plants. When implemented, it will add new resources to the Rural Legacy Program, Wetland reserve Program and Maryland Agricultural Land Protection Fund. All of the latter are essential to developing a permanent working greenbelt for Greater Vienna.

H. Transportation

Vienna's transportation facilities include town, county and state streets, roads and highways; bicycling and hiking routes and trails and water transportation along the Nanticoke River.

Town, County and State – Streets, Roads and Highways

U.S. Route 50 is the major east-west artery affecting and serving Vienna. The north-south roadway serving Vienna is the combination of Maryland Route 331, the Vienna-Rhodesdale-Hurlock Road which begins at Old Ocean Gateway, and to the south of Route 331, Market Street and the Vienna-Henry's Crossing-Elliott Island Road reaching toward Blackwater, Bucktown and Elliott Island. There is significant grain and timber trucking along this north-south route.

2003 GREATER VIENNA COMPREHENSIVE PLAN

streets like Old Ocean Gateway, Old Route 50 and Vienna Back Road. Old Ocean Gateway in particular is a major entrance to Vienna and its waterfront area from the west.

The Larmore/Phillips Area South And Southwest Of The Town

The Town should continue discussions toward annexation of the land proposed for phase I residential development on the Larmore/Phillips Area. The principal reason for seeking this annexation is to have this new housing development occur within the Town limits, to enable the provision of essential public services and to achieve a standard of design and construction which is compatible with Vienna.

The Larmore/Phillips development is intended to be developed as a model Chesapeake Bay Smart Growth community. It will be based on traditional neighborhood design principles.

A multi-phase program of innovative residential development is planned for this well-located property, with an initial phase which will probably include some 10-15 units. The first phase of development is planned to occur within the site bounded by the current Town limit on the north, Horsemann Lane and Market Street on the east, Trunken Creek on the south and a line approximately extending Higgins Street on the west.

The Larmore/Phillips Area is adjacent to the southern Town boundary. There are no man-made or natural barriers dividing the farm property from the built environment of the Town. The area is categorized as S-1 and W-1 on the amended Dorchester County Water and Sewer Master Plan. These utility services are planned to be in place within 2 years. Other areas of the Larmore/Phillips Area are in areas designated as S-2, S-3, W-2 and W-3, for later phase utility extensions, and may be considered for annexation at a future date, depending on environmental and development feasibility findings.

Through annexation, the proposed first phase the Larmore/Phillips development would be made subject to the Town's zoning code and enforcement. The provision of Town services, including water and sewer, will enable a density of development commensurate with traditional densities, design and streetscapes within the Town. The development, if annexed, would receive the same services listed above. The Town's policy is that the developer would pay for utility extensions to serve the project.

In addition to receiving the benefit of revenue for the new services provided, the Town would receive broader community benefits for all citizens because it would be able to play a significant role in the design and pace of new housing for Vienna. This would include such design matters as building heights, setbacks, minimum and maximum lot sizes, clustering, open space and coverage. The Town by virtue of annexation may also be able to add dedicated sites for new public facilities and recreational areas which add to its inventory of community amenities.

2003 GREATER VIENNA COMPREHENSIVE PLAN

The project will create a new pedestrian-oriented neighborhood with community amenities and diverse home ownership opportunities envisioned for the 178-acre Phillips Farm site. Although still conceptual, the development plan for the property is based on a careful evaluation of Vienna's street network, lot and block patterns, existing neighborhood density and the original 1706 plan of Vienna. The Phillips Farm project would respect and build upon the best aspects of Vienna to create a new neighborhood that enhances the town's unique character.

The architecture and site plan for the new neighborhood would be consistent with traditional Eastern Shore patterns of development, and would blend seamlessly into the existing town by connecting old streets to new. The neighborhood would include character-enhancing features such as houses with front porches, alley loaded garages, private courtyards, sidewalks, street trees and community open space. A mixture of single family homes, two family homes, carriage houses and townhouses would accommodate families, single people, working couples and retirees, and ensure a sustainable and diverse neighborhood that blends into the historic town. All homes would be of consistent high quality, with great attention paid to architectural details.

Amenities accessible to the entire town would be built as part of the development. They would include a trail system that connects to the Waterfront Park and the school; a new town green that will form the civic heart of Vienna, providing a place for neighbors to meet; and protected open space, including wetlands and fields.

In addition to creating a wonderful place to live, the Phillips Farm project would also conserve and in some cases restore the significant natural features of the site. The goal is that by developing the new neighborhood in the same compact pattern and at a similar density to that of historic Vienna (between four and five units per acre), 50-60% of the land will be developed, while the remaining 40-50% will be protected as open space.

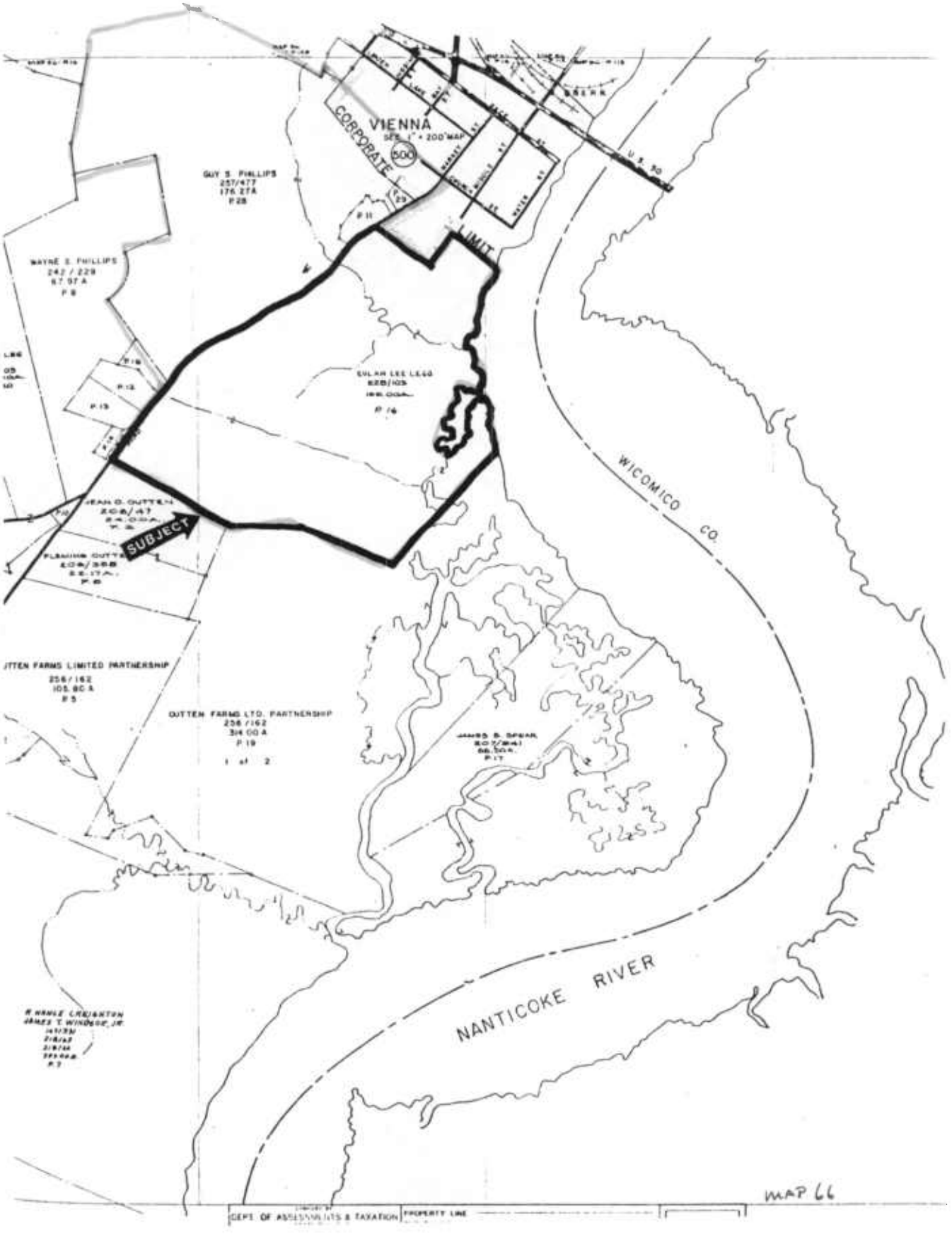
Other Areas

A third area which appears suitable for potential annexation, and which is located within the Town Growth Boundary, is the Vienna Power Plant. The Power Plant presently uses its own private water system. The Town should conduct a preliminary discussion with the Power Plant about possible mutual benefits of annexation.

D. Capital Improvement Program

The Town should prepare a Five-Year Capital Improvements Program (C.I.P.) which includes planned capital improvements such as street extensions, streetscape and road improvement projects, street lighting, repaving and other municipal improvements of a capital nature. Examples of the latter could be waterfront amenities such as transient docks, building renovations, and trail or park and recreation improvements.

Parcel Map


VIENNA
CORPORATE LIMIT
GUY S. PHILLIPS
257/477
176.27A
P.28
WAYNE S. PHILLIPS
242 / 229
67.97 A
P.6
SUBJECT
WICOMICO CO.
NANTICOKE RIVER
OUTTEN FARMS LIMITED PARTNERSHIP
256/162
105.80 A
P.5
OUTTEN FARMS LTD. PARTNERSHIP
256/162
314.00 A
P.19
MAP 66
DEPT OF ASSESSMENTS & TAXATION
PROPERTY LINE

Jeffrey A. Wolinski
Consulting Ecologist
38643 Morrisonville Road
Lovettsville, VA 20180
Phone: (540) 882-4947
Fax: (540) 882-4965
MD Phone: (410) 274-7678

April 5, 2005

Karen McJunkin
Elm Street Development
6820 Elm Street, Suite 200
McLean, Virginia 22101

RE: Larmore Properties

Karen:

As requested I have compiled a list of options for the conservation design of the Larmore properties near Vienna, Maryland in Dorchester County. The properties under consideration include the former Phillips farm and the former Legg farm immediately south of the town of Vienna. These are large agricultural properties that are largely open and remain in agricultural production at this time. Significant natural resources are limited to the outer edges of these properties and a moderately sized tidal gut that extends through both properties.

I conducted an ecological assessment of the former Phillips farm for The Conservation Fund in 2003 as part of their initial conservation planning effort. This assessment was similar in scope to a series of assessments I had conducted for them around the town of Emmittsburg, Maryland. Under contract with Elm Street Development, I have conducted the fieldwork for a similar assessment of the former Legg Farm, and am currently writing the report. These reports will provide sufficient information to guide initial planning efforts for the site, but will need to be supplemented by more detailed studies as the development process moves forward.

The conservation options are provided in an attached list format and are not meant to be all inclusive or definitive. Various elements may prove to be impractical from cost or site design perspectives, and several will require regulatory agency approvals. However, I believe that all or most of these can be implemented at some level of completeness to enhance the conservation values of the proposed development while keeping the development financially viable.

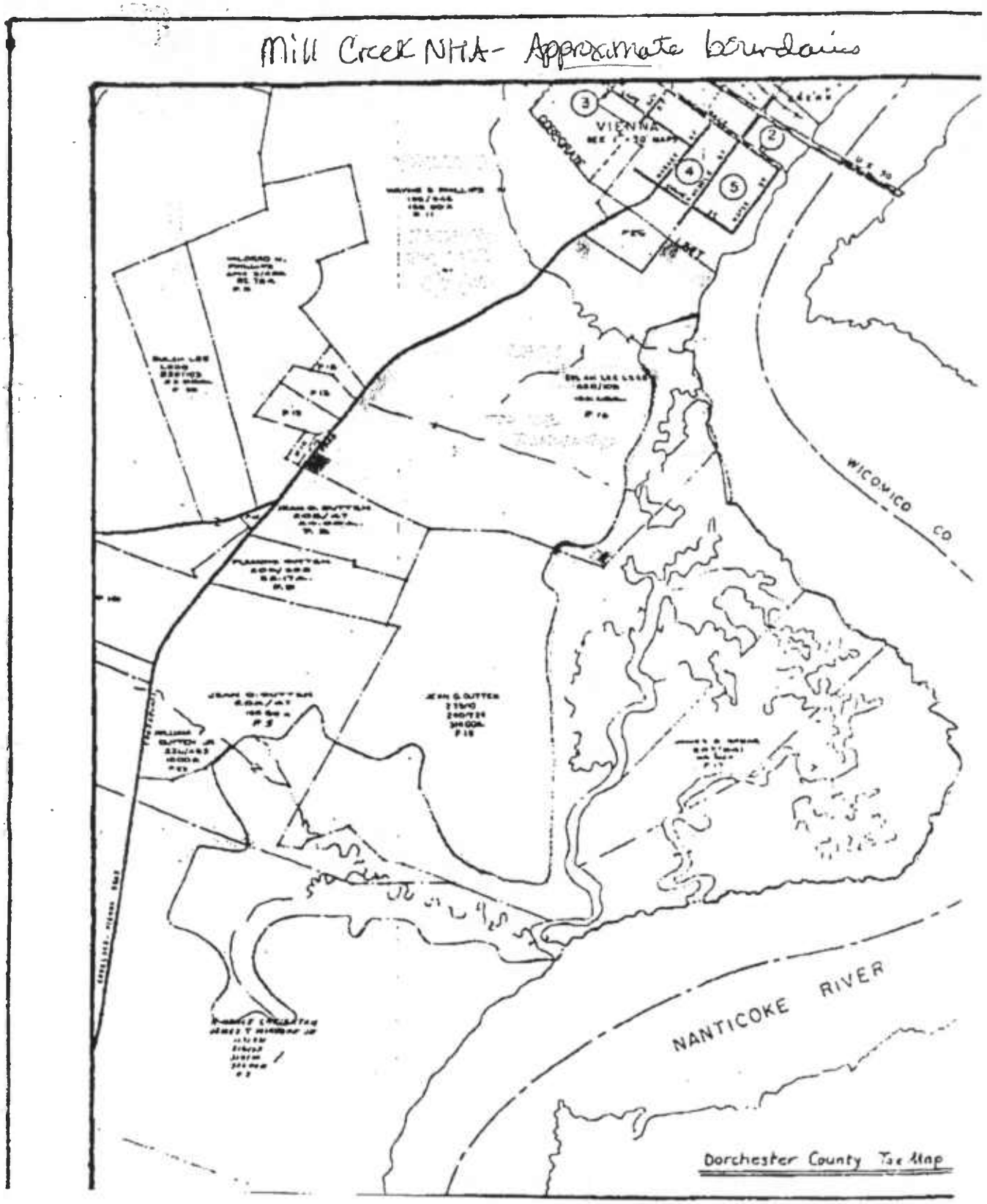
Please contact me with any questions or comments at (410) 274-7678.

Sincerely,

Jeffrey Wolinski

Enclosure

1. Establish a greenbelt protected by a permanent conservation easement encircling Vienna. This greenbelt is in keeping with the goals of the Vienna Comprehensive Plan and will contain future development within a defined town center. Greenbelt provides opportunities for significant reforestation to provide additional habitat and water quality benefits, along with providing important linking corridors to adjacent forested lands and the Nanticoke.
2. Creation of on-site corridors to link the tidal gut with limited on-site forest and extensive adjacent off-site forest. These corridors should follow existing ditches to provide additional water quality protection and create travel options for the greatest number of species. Corridors should also provide linkages between the tidal gut and the next most significant body of water onsite, which is the abandoned gravel pit pond.
3. Protect and expand forested habitats on and off-site through the establishment of the greenbelt, corridors, and other targeted reforestation efforts. Such efforts will protect and buffer existing forests and eventually provide additional forested habitat. This will protect and ultimately enhance habitat for Delmarva Fox Squirrel and Forest Interior Dwelling Bird species.
4. Restore prior converted cropland to functioning wetlands, particularly on the southwestern portion of the site. Currently drained wetland soils in agricultural production can be relatively easily converted back to wetland conditions with manipulation of grades and drainage systems. Open water components can be incorporated to add habitat diversity.
5. Restore ditches to natural stream channel morphology. Currently straightened ditches lack essential habitat features that can be restored through channel reconstruction, providing enhanced aesthetics and natural habitat.
6. Explore options for enhancing tidal action through restricted culvert under Vienna-Henrys Crossroads Road (Elliot Island Road). Existing small culvert restricts and concentrates tidal flow and also fish and wildlife passage. Enhancement options include expansion of existing culvert or the installation of additional culverts through the tidal gut crossing.
7. Remove existing fill causeway near the Nanticoke. Existing twin culverts have similar detrimental effects as the public road culvert. Future access can be maintained by replacement with a raised boardwalk that will allow for minimally impeded tidal flow and fish and wildlife passage.
8. Establish high quality buffer habitats above and beyond regulatory requirements. Buffer areas currently in agricultural production can be seeded into diverse native grass and wildflower meadows, with intermingled clusters of appropriate native trees and shrubs for optimal habitat diversity.
9. Establish high quality stormwater wetland systems above and beyond regulatory requirements. Stormwater management can be implemented with bioretention and wetland systems incorporating a variety of water regimes for optimal habitat and water quality benefits.
10. Incorporate passive recreational and educational components throughout the natural areas to encourage ecological stewardship.


Mill Creek NHA- Approximate boundaries
VIENNA
WICOMICO CO
NANTICOKE RIVER
Dorchester County Tax Map

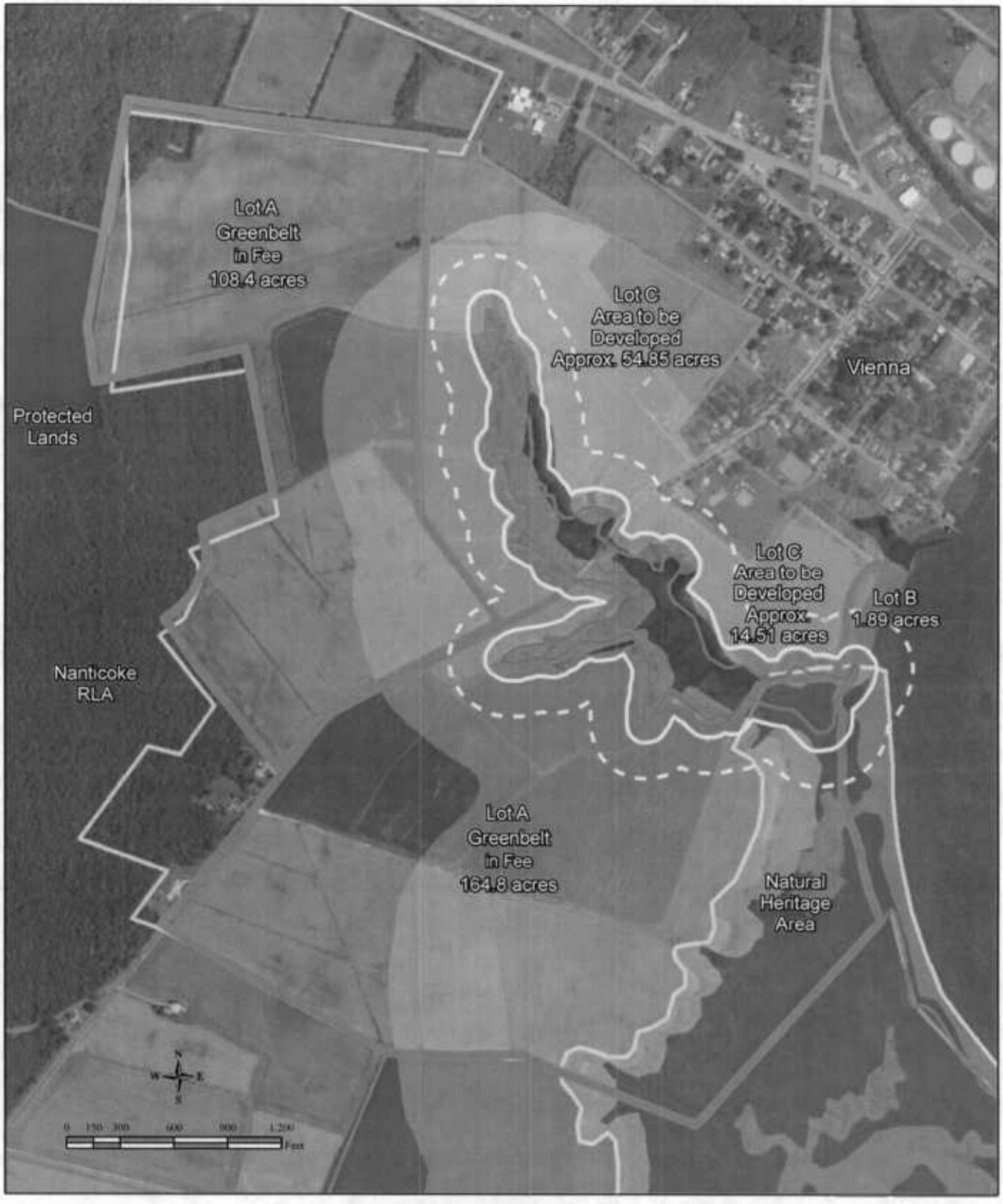
Legg Property Shoreline

View north toward town. Tidal gut adjacent to Town shown as treed area in background.

View north toward town showing stabilized shoreline.

View south towards marshes.

Vienna Greenbelt - Larmore Property - Critical Area
Dorchester County



Imagery: NAIP 2005

Maryland Department of Natural Resources
Natural Resources Information Services
580 Taylor Ave E-2 Annapolis, MD 21401
410-260-8753 or 1877-620-8DNR x8753
DNR October 2007

Greenbelt in Fee	POS Proposed Properties	Corporate Limit - Intensely Developed Area
Area to be Developed	Nanticoke Rural Legacy Area	Corporate Limit - Limited Developed Area
Wetland Delineation	Protected Lands	Intensely Developed
100 Foot Wetland Buffer	DNR Lands	Resource Conservation Area
300 Foot Wetland Buffer	Natural Heritage Area	Wetland Area

Vienna Greenbelt
Dorchester County

Maryland Department of Natural Resources
Natural Resources Information Services
580 Taylor Ave E-2 Annapolis, MD 21401
410-260-8753 or 1877-620-8DNR x8753
DNR October 2007

- Greenbelt in Fee
- Area Retained
- POS Proposed Properties
- Nanticoke Rural Legacy Area
- Protected Lands
- DNR Lands
- Natural Heritage Area

Imagery: NAIP 2005

N W E S

0 300 600 1,200 1,800 2,400 Feet

Vienna Greenbelt - Larmore Property - Area Retained
Dorchester County

Maryland Department of Natural Resources
Natural Resources Information Services
580 Taylor Ave E-2 Annapolis, MD 21401
410-260-8753 or 1877-620-8DNR x8753
DNR October 2007

Martin O'Malley
Governor
Anthony G. Brown
Lt. Governor
John R. Griffin
Secretary

Greenbelt in Fee
Area Retained
POS Proposed Properties
Nanticoke Rural Legacy Area
Protected Lands
DNR Lands
Natural Heritage Area

Imagery: NAIP 2005

N
W E
S

0 150 300 600 900 1,200
Feet

Site Concept Plan

THE CONCEPT PLAN CALLS for the design of neighborhoods within a network of conservation land connected to the natural environment by a series of trails and local neighborhood parks. New neighborhoods are designed to connect to the existing village in a way that extends the sense of being in the town. Architectural design for the new houses and civic buildings will reflect the traditions of the Eastern Shore. Waterfront connections would be the focus of a new shoreline trail. The new Vienna neighborhoods would be designed as traditional village neighborhoods with alleys, sidewalks, street trees and a variety of housing types and sizes.

% ACREAGE BY LAND USE IN THE VIENNA VILLAGE CONCEPT PLAN
Total Acres: 376
Dedicated Conservation Land: 242 acres/ 64% of site
Neighborhoods: no greater than 300 units on 134 acres / 36% of land

Approximate location of town green / civic space

Potential street connections into Vienna's existing street network

Proposed street connections into Vienna's existing street network on land under developer control

(ABOVE The concept plan indicates the neighborhood areas in light yellow.(A) Trails and walkways provide continuous access to the town and open space areas (B) Preserved greenbelt open space creates an open space edge for the town (C) A public waterfront edge will be created and linked to the existing riverwalk (D) A new town green and civic space will create a gathering place for all residents of Vienna (E).

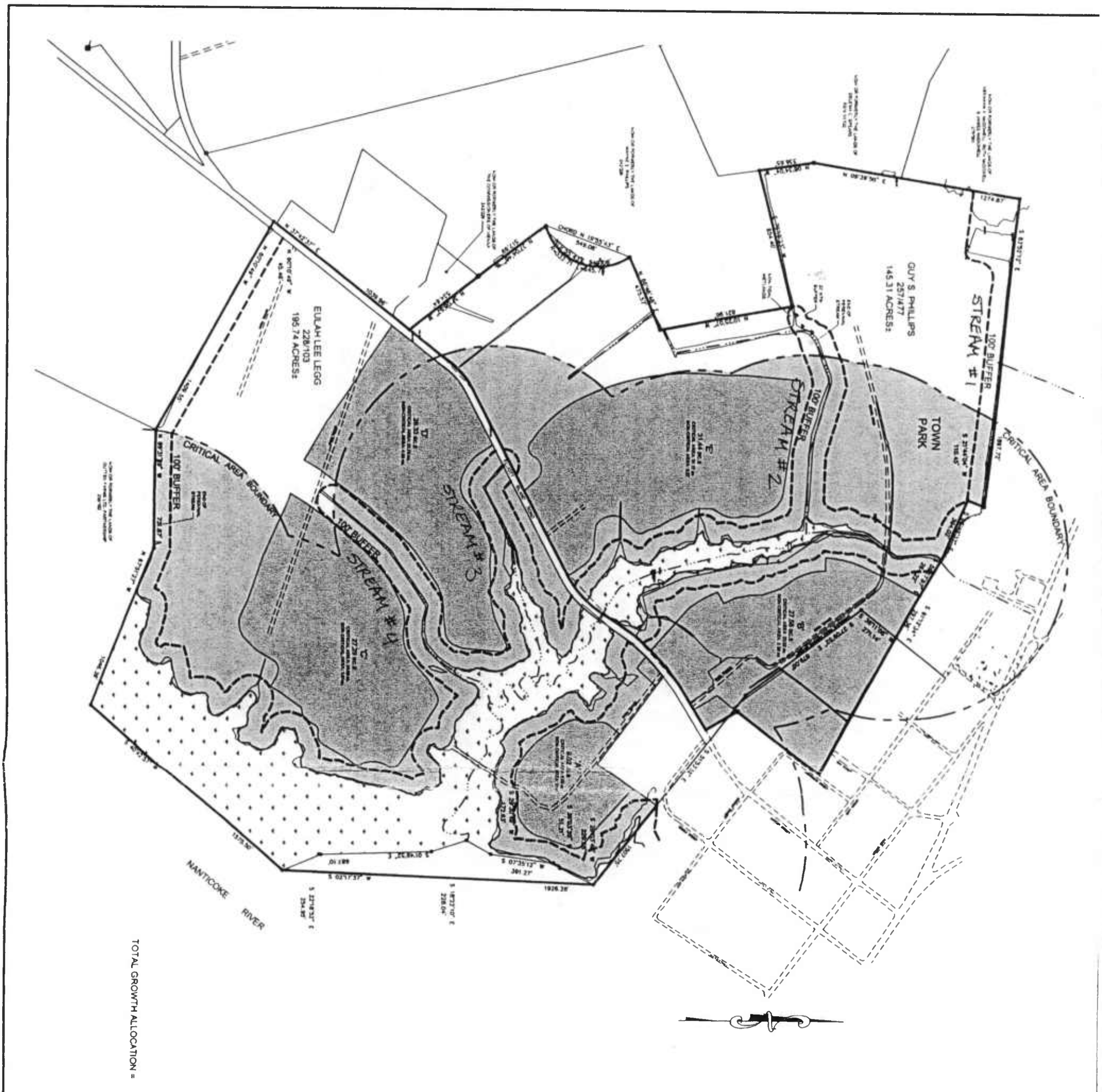
Site Plan

LAND USE DATA

TOTAL SITE:	373.3 AC.
DEVELOPMENT ENVELOPE (LOTS & ROADS) (400 PROPOSED UNITS)	149.3 AC., 40%
TOTAL OPEN SPACE:	224.0 AC., 60%
GROSS DENSITY:	1.1 AC.
NET DENSITY:	2.7 AC.
EXISTING FOREST:	4.9 AC., 1.3%
PROPOSED CLEARING:	0.0 AC.

LEGEND

- TIDAL WETLANDS
- OPEN SPACE/ CONSERVATION AREA
- PARKS/ GREENS
- EXISTING TOWN BUILD-OUT
- PROPOSED DEVELOPMENT
- STORMWATER MANAGEMENT/ WETLAND FEATURES
- 100' SHORELINE BUFFER (60.48 ACRES±)
- 300' SHORELINE BUFFER (52.83 ACRES± ADDITIONAL)



TOTAL GROWTH ALLOCATION = 112.94 ac.

GROWTH ALLOCATION REQUEST PLAN

ELM STREET DEVELOPMENT

VIENNA VILLAGE

VIENNA, MD

DORCHESTER COUNTY

MAP 56,300 GRID 4,21 PARCEL 18,28,55,56,109

SHEET No. 1 OF 1

FILE No. 8779

Lane Engineering, Inc.

Civil Engineers - Land Planning - Land Surveyors

With Theoretical Critical Area Boundary


GUY S. PHILLIPS
257/477
145.31 ACRES±
TOWN PARK
EULAH LEE LEGG
228/103
196.74 ACRES±
CRITICAL AREA BOUNDARY
CRITICAL AREA BOUNDARY
NANTICOKE RIVER
TOTAL GROWTH ALLOCATION = 106.26 ac.
GROWTH ALLOCATION REQUEST PLAN
ELM STREET DEVELOPMENT
VIENNA VILLAGE
VIENNA, MD
DORCHESTER COUNTY
MAP 66,500 GRID 4,21 PARCEL 16,26,55,56,109
Lane Engineering, Inc.
Civil Engineers - Land Planning - Land Surveyors
With Official Critical Area Boundary

TOTAL GROWTH ALLOCATION = 112.94 ac.

FILE No. 6170	SHEET No. 1 OF 1	GROWTH ALLOCATION REQUEST PLAN	Lane Engineering, Inc.
		ELM STREET DEVELOPMENT	Civil Engineers -- Land Planning -- Land Surveyors
		VIENNA VILLAGE	
		VIENNA,MD	
		DORCHESTER COUNTY	
		MAP 66,500 GRID 4,21 PARCEL 16,26,55,56,109	

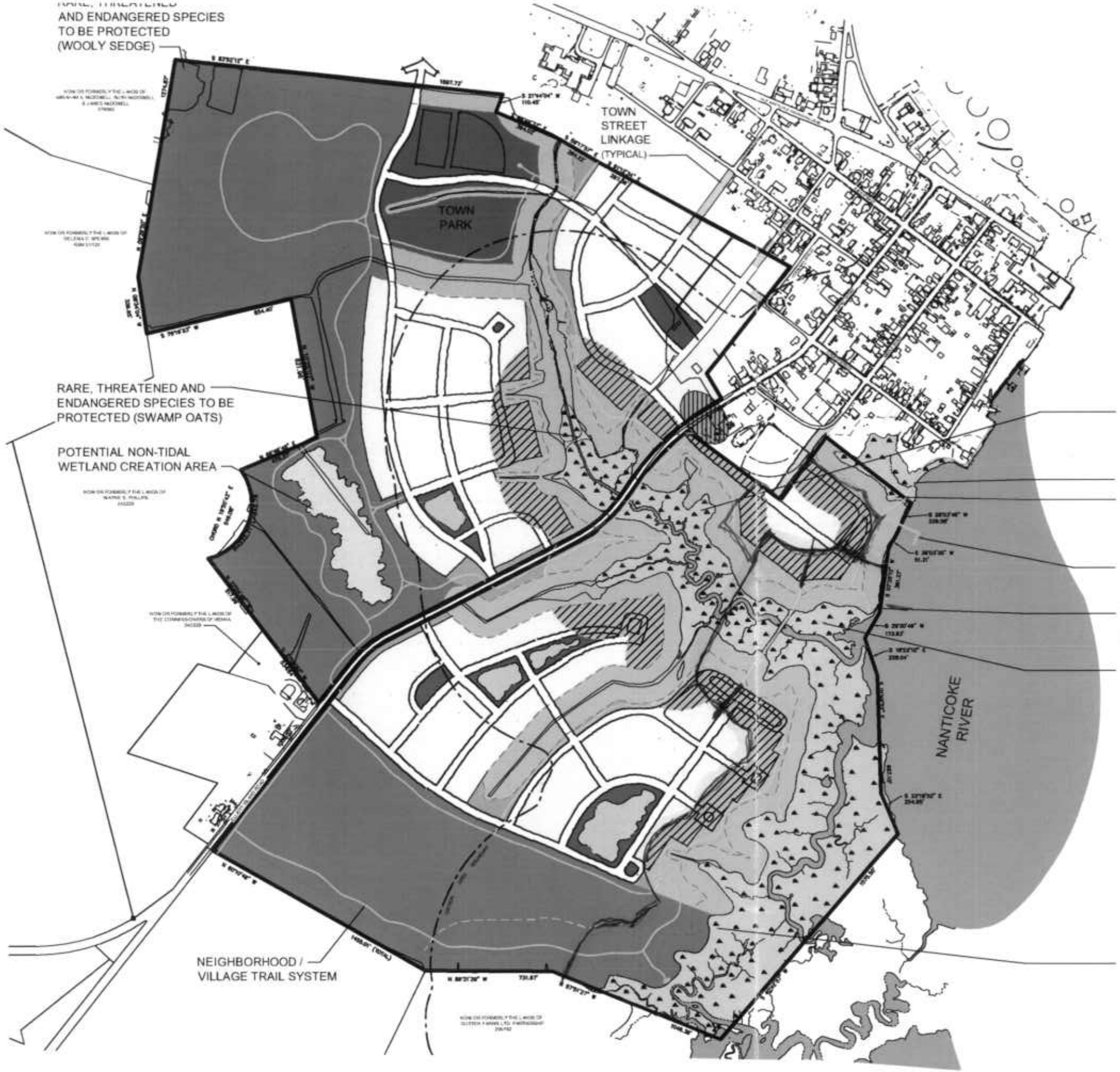
With Theoretical Critical Area Boundary

PLAN LEGEND AND DATA

TOTAL GROWTH ALLOCATION AREA 149.01 AC.±

GRAPHIC SCALE

Growth Allocation Exhibit



PLAN LEGEND AND DATA

TOTAL SITE AREA IN CRITICAL AREA	218.12 AC.±
300' BUFFER (WITHIN CRITICAL AREA)	74.60 AC.±
PROPOSED ADDITIONAL BUFFER	3.40 AC.±
GREENBELT / POSSIBLE AFFORESTATION AREAS	125.23 AC.±

- NEIGHBORHOOD DEVELOPMENT AREAS
- NEIGHBORHOOD PARKS
- TIDAL WETLANDS
- POTENTIAL TOWN GREEN / CIVIC SPACE
- TOWN STREET LINKAGE
- DEVELOPMENT ENVELOPE AREA LOST DUE TO 300' BUFFER EXPANSION

RARE, THREATENED AND ENDANGERED SPECIES TO BE PROTECTED (VELVETY SEDGE)

PUBLIC RIVER WALK LINK

RARE, THREATENED AND ENDANGERED SPECIES TO BE PROTECTED (NORTHERN TICKSEED SUNFLOWER)

CRABBING PIER

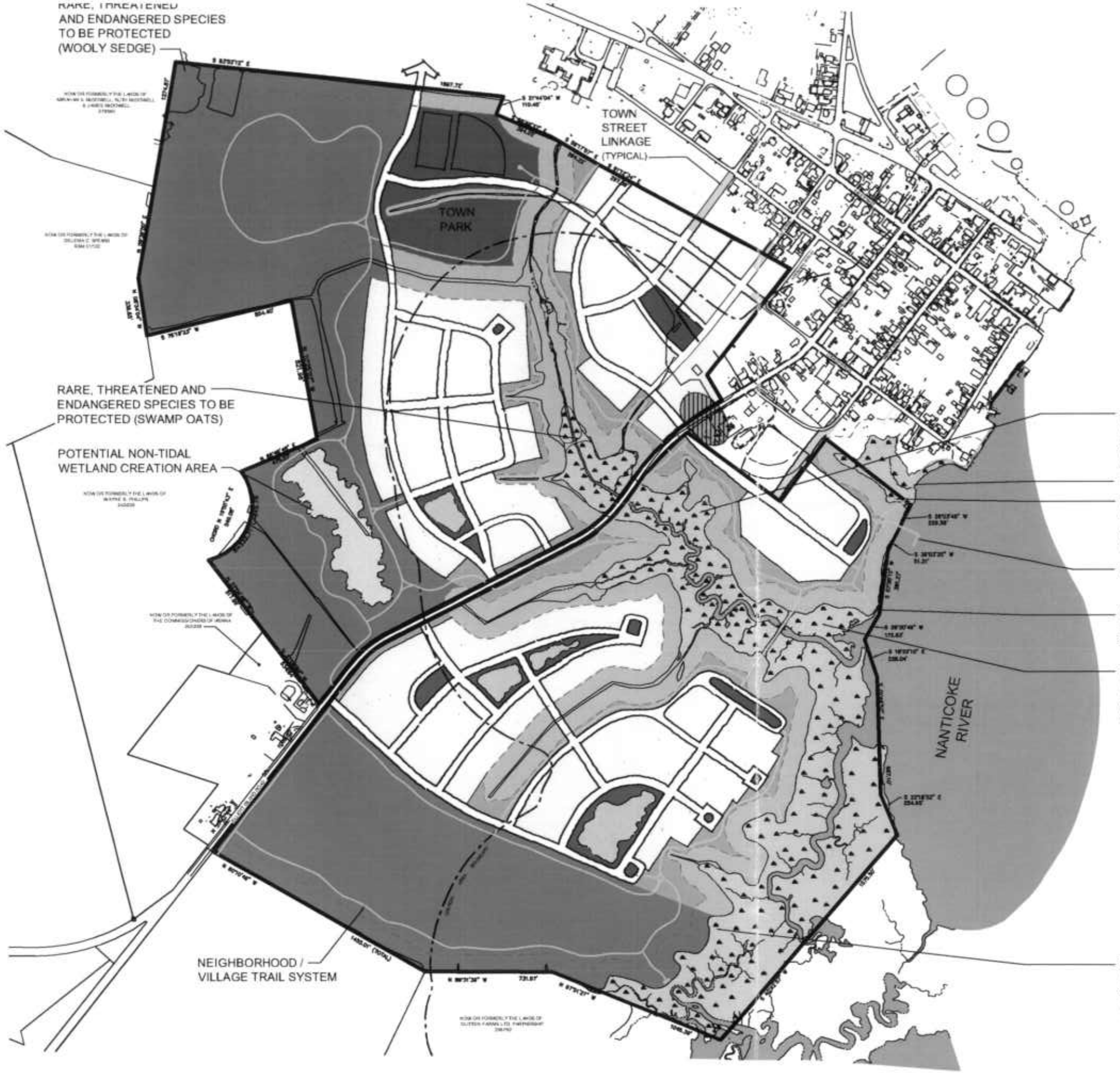
NEIGHBORHOOD / VILLAGE TRAIL SYSTEM AND OVERLOOK (TYPICAL)

RARE, THREATENED AND ENDANGERED SPECIES TO BE PROTECTED (NORTHERN TICKSEED SUNFLOWER)

RARE, THREATENED AND ENDANGERED SPECIES TO BE PROTECTED (NORTHERN TICKSEED SUNFLOWER)

GRAPHIC SCALE

300' Buffer Exhibit



PLAN LEGEND AND DATA

TOTAL SITE AREA IN CRITICAL AREA	218.12 AC.±
100' BUFFER (WITHIN CRITICAL AREA)	39.46 AC.±
PROPOSED ADDITIONAL BUFFER	16.09 AC.±
GREENBELT / POSSIBLE AFFORESTATION AREAS	125.23 AC.±
NEIGHBORHOOD DEVELOPMENT AREAS	
NEIGHBORHOOD PARKS	
TIDAL WETLANDS	
POTENTIAL TOWN GREEN / CIVIC SPACE	
TOWN STREET LINKAGE	

RARE, THREATENED AND ENDANGERED SPECIES TO BE PROTECTED (VELVETY SEDGE)

PUBLIC RIVER WALK LINK

RARE, THREATENED AND ENDANGERED SPECIES TO BE PROTECTED (NORTHERN TICKSEED SUNFLOWER)

CRABBING PIER

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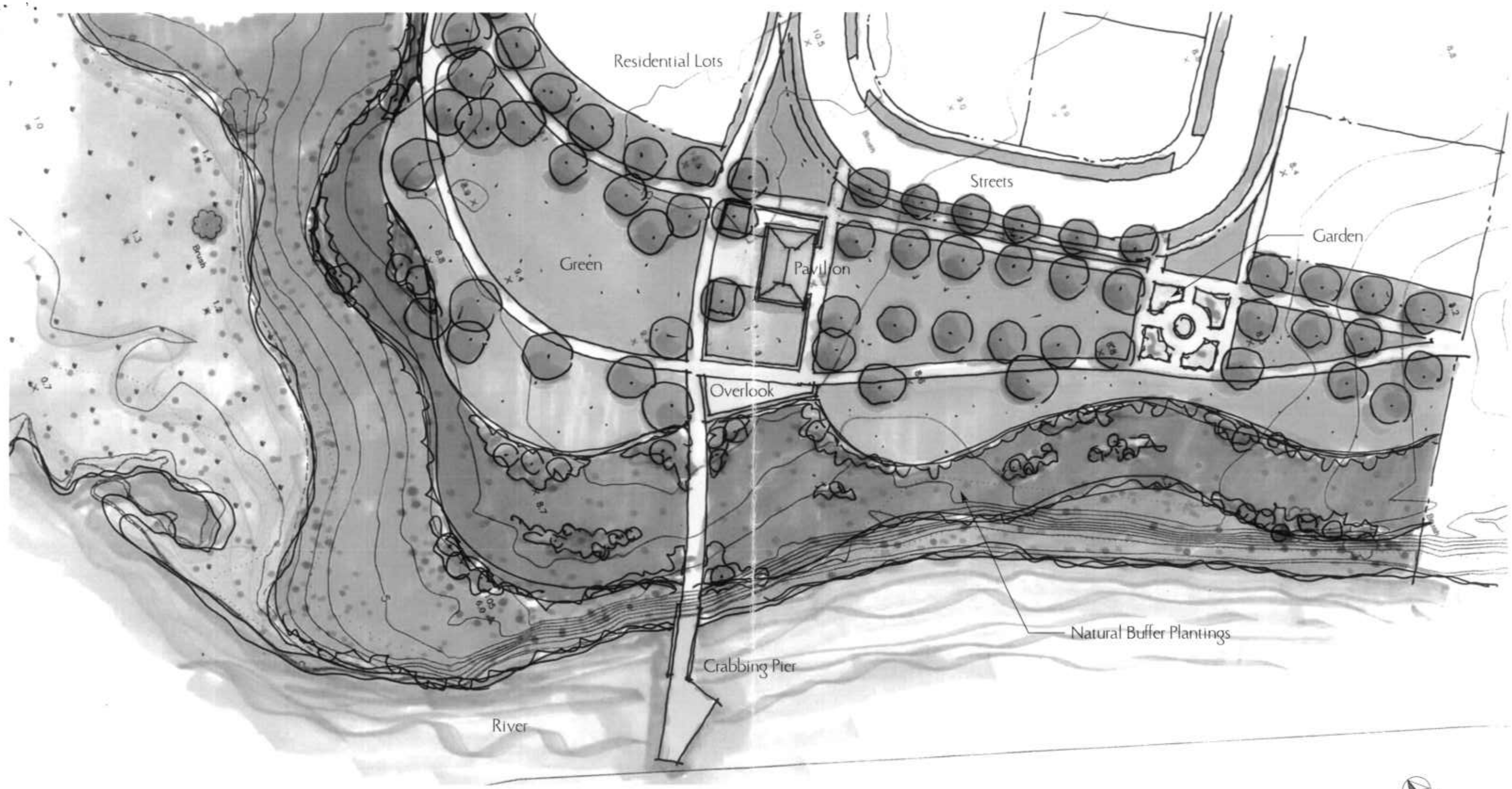
RARE, THREATENED AND ENDANGERED SPECIES TO BE PROTECTED (NORTHERN TICKSEED SUNFLOWER)

GRAPHIC SCALE

100' Buffer Exhibit

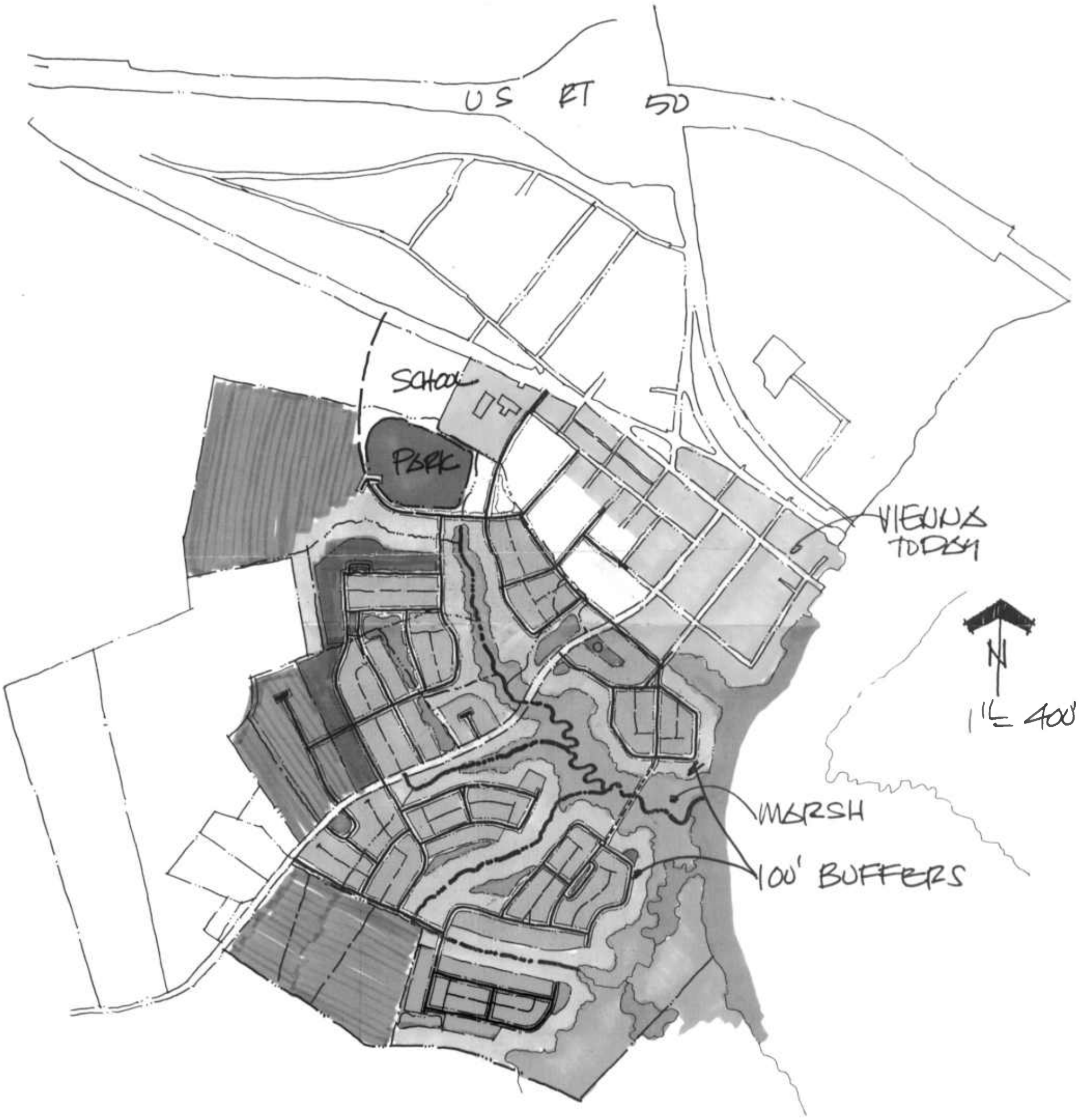


LaQuatra Bonci Associates
95 South Tenth Street
Pittsburgh, Pennsylvania 15203
tel 412.488.8822
fax 412.488.8825
Nature leads, art follows.

Neighborhood Riverfront Park
Vienna Riverfront
Vienna, Maryland

Prepared for:
Elm Street Development
175 Admiral Cochrane Drive, Suite 204
Annapolis, MD 21401

June 5, 2006


US RT 50
SCHOOL
PARK
VIEWS TODAY
N
1" = 400'
MARSH
100' BUFFERS