



DC GROUP

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October 14, 2004

Ms. Constance C. Holland, AICP
State of Delaware
Executive Department
Office of State Planning Coordination
Suite 7, 3rd Floor
Thomas Collins Bldg.
540 S. DuPont Hwy.
Dover, DE 19901

RE: PLUS 2004-03-04 (Windstone)
Tax Map 2-35-22 Parcel 24
Cave Neck Road
Broadkill Hundred, Sussex County

Dear Ms. Holland:

We have received the comments for the Windstone Project, PLUS Application 2004-03-04, dated April 14, 2004, prepared by your office and received in this office June 15, 2004. We offer our comments as follows:

The Developers are proposing a 360 single-family lot development situated on 180.33± acres of land located on the North side of State Route 88 (a.k.a. Cave Neck Road), approximately one-half mile West of Delaware Route One. The property is presently zoned Agricultural Residential (AR-1), with the first 600' north of Cave Neck Road being inside the Environmentally Sensitive Development District Overlay Zone (ESDDOZ). The total proposed density for this site is 2.0 lots per acre based on the Cluster Ordinance. The property will be developed in three phases. A phasing plan will be submitted to Sussex County for their use and approval. The final phase which consists of 30-lots will be situated in the area of the proposed spray facility. Once this site is serviced by Sussex County for sewer service, the spray facility will be abandoned, per state and federal regulations, and this area will be developed with the 30-lots.

Design Consultant Services Through Land Use Planning

This project is across the road from the State's Secondary Developing Area as indicated on the "Strategies for State Policies and Spending" plan, dated 12/23/99. Sussex County's Comprehensive Plan emphasizes the future growth areas for the County should be adjacent to existing infrastructure and services required for development. This project is adjacent to the Sussex County Sanitary Sewer System and is in the Water Service area for Tidewater Utilities. This project is intended to keep the existing zoning as shown on the Future Land Use map in the Comprehensive Plan. This project will be developed according to the approved AR-1 Cluster Zoning Ordinance and the Environmentally Sensitive Development District Overlay Zone Ordinance in place at this time. Density will not be increased during submittal to the County. The Comprehensive Plan supports projects that are being developed in rural areas under its current zoning.

The preliminary subdivision plan shows a variety of open space that computes to approximately 35% of the area for the site. The County's Cluster Ordinance requires that 30% open space be provided. The overall recreational program for these open spaces consists of a variety of elements. Formally planned recreational amenities consist of a community center, swimming pool, tot-lots, and sidewalks/jogging paths throughout the site. Passive recreation space in the form of improved landscape areas and related amenities is provided throughout the site and will provide opportunities for residents to engage in leisurely activities (e.g. a game of catch, badminton, playing, gardening, flying a kite, etc.). Enhancing the utility of these passive recreation spaces will be light shelters (such as gazebos or pergolas) in open areas and park benches along walkways. These amenities will offer places for residents to gather or meet at random while enjoying the site's landscape. Should the homeowner's association desire indoor recreational activities, the community center will have adequate floor space to house several indoor activities (e.g. ping pong, pool, dance, etc.).

All areas not planned as landscape beds, shrubs and/or groundcover will be improved and maintained to provide open space and useable lawn area for passive recreation. Storm water management ponds are included in the passive/active recreation space calculations, due to the fact that these features act as an attractive landscape element that significantly enhances the park-like setting of the open space and the overall passive recreational experience for its users.

As many of our open space areas are bounded by private lots, we will be providing 10' wide pedestrian access easements into the open spaces from street right-of-ways. Each space will have at least 2 access points to provide pedestrian through-connectivity. Larger spaces will have 3 or more access points, with an overall objective of at least one access point per 750 linear feet of street frontage. These access points will improve the resident's perceptions of

these areas as accessible open space and thus improve their utility for passive recreational uses.

It should be noted that streets are excluded from active recreational space calculations despite the fact that they are highly valued by bicycle users and in-line skaters. This is especially true for local and collector streets laid out on an adapted grid pattern, which this plan possesses, where vehicular traffic is less concentrated and threatening than with a branched street pattern.

The removal of approximately 8 lots currently located in the Northeastern portion of the site is being done to increase the proposed open space area and to minimize potential impacts to adjacent aquatic resources. Although these are some of the most desirable lots in the development, the developer believes this sacrifice will benefit the overall design and minimize any negative impacts.

We offer the following responses to the State agencies comments:

State Historic Office

The developer will not require any federal involvement which will result in a request from SHPO that archaeological work be conducted in compliance with Section 106 of the National Historic Preservation Act.

Department of Transportation

The TIS showed that infrastructure improvements in the study area are required. To support existing traffic, signals need to be installed at the intersections of Route 1 and Cave Neck Road and Route 1 and Hudson Road to achieve LOS D or better. DeIDOT is requiring signal agreements although DeIDOT can use their discretion and decide not to install signals. Improvements are also needed along Sweetbriar Road (a bypass lane and improved signage) at its intersection with Log Cabin Road.

To support existing traffic, future traffic growth, committed developments, and the Windstone Subdivision, two intersections need improvements. At the intersection of Cave Neck and Sweetbriar Roads, "STOP" signs need to be installed on both Cave Neck Road approaches converting the intersection to all-way stop-controlled. At the intersection of Route 9 with Sweetbriar and Dairy Farm Roads, both Route 9 right-turn lanes need to be converted to shared through and right-turn lanes and a southbound Sweetbriar Road left-turn lane is needed.

Additionally, to support the development of the Windstone Subdivision along with Vincent Overlook and the Hopkins-Natelli Property (two pending projects at the

time of the TIS), further improvements are needed at the two intersections just mentioned. * If Cave Neck Road is converted to all-way stop-controlled, a westbound Cave Neck Road left-turn lane is needed. At the Route 9 intersection, left-turn lanes are needed along US Route 9 in both directions.

The Department of Natural Resources and Environmental Control

Wastewater

The wastewater treatment facilities planned for Windstone will have a capacity of 85,000 gallons per day. This is based on a total of 340 single family residences at 250 gallons per day per residence. The additional 20 units will be serviced by Sussex County Public Sewer if and when it becomes available. Wastewater will be pumped to the plant from a pumping station located in the community. It will be treated in a lagoon system consisting of an aerated lagoon followed by a stabilization pond. These will provide "secondary" treatment, reducing the organic strength by approximately 85%. After the lagoon treatment, the wastewater receives "tertiary" treatment. Chemicals will be added to coagulate remaining solids and then the water will be passed through a disk filter. The coagulation and filtration process will reduce the overall organic strength by approximately 95%. The resulting water will be stored in a third storage pond. Water will be drawn from the storage pond and irrigated on approximately 18 acres of hay or grass.

The irrigation system consists of normal residential and or agricultural sprinklers. The irrigation area will have several irrigation zones. An automatic control system selects and irrigates different zones each day on a rotating basis. Zones are allowed to rest several days between applications to allow the soils to re-aerate. Even though the treatment process will typically remove 99+% of harmful bacteria and viruses, the water is disinfected with chlorine prior to irrigation.

The treated wastewater will be irrigated onto the hay or grass. The water is further treated as it passes down through the soil. The vegetation absorbs remaining nutrients, such as nitrogen and phosphorus, as fertilizer. Naturally occurring bacteria on the vegetation and in the soil removes remaining organic matter in the water. Nutrients, such as phosphorus, is also absorbed by the soil particles and bound up into the soil matrix. This "living filter" provides an extremely high degree of additional treatment. Generally, within two to four feet of the ground surface the water returns to drinking water quality. Monitoring wells will be installed around the treatment and irrigation facilities to periodically check on ground water quality leaving the site. Almost without exception, ground water monitoring of this type facility has shown that ground water quality significantly improves on properties that had previously been farmed.

Water Supply

We reviewed the site and it appears that there are no Public Wells within 150' of the project boundary. All wells found in the vicinity of the project as of August 1, 2004 were individual private wells serving single family dwellings.

It is recognized that if a dewatering permit is necessary during construction, the developer will follow all County, State and Federal Regulations.

Soils and Groundwater Recharge Potential

According to the Soil Survey update, The following soils were found in the vicinity of the proposed development:

- 1) Excessively well drained - Runclint
- 2) Well Drained - Downer & Ingleside
- 3) Moderately well drained - Woodstown & Hammonton
- 4) Poorly drained (Hydric) - Hurlock
- 5) Very poorly drained (Hydric) - Chicone

Soil Reconnaissance (Field investigations) to create an interpretive map showing potential area suitable for potential wastewater/stormwater disposal system is in progress and will be furnished on a later date.

Preliminary findings confirmed the mapped soils over the entire site and the suitability of the excessively well to moderately drained soils for wastewater/stormwater disposal systems.

Wetlands

Wetlands and waters of the United States boundaries within the subject parcel were delineated in the field by Atlantic Resource Management, Inc. between September 9th and November 20th, 2003. Approximately 8.8 acres of non-tidal wetlands and 5.02 acres of waters of the United States were identified within the property. A wetland delineation report is currently being prepared for submittal to the Philadelphia District U.S. Army Corps of Engineers (USACE) to obtain a jurisdictional determination on the wetland and water of the United States boundaries.

TMDLs

This projected site lies entirely within the Broadkill River Watershed (HUC 2040207, DE060-007-02) for which DNREC has not yet established a TMDL in accordance with the Section 303(d) of the Clean Water Act. A comprehensive survey and assessment by Atlantic Resource Management, Inc of the Nitrogen and Phosphorus loading of the site prior to and after conversion to residential land use show a net decrease of nitrogen by 54% and phosphorus by 95% (Report available upon request). The projected land use of this site clearly reflects a reduction within accepted limit in nonpoint Nitrogen and Phosphorus entering the Broadkill River.

Stormwater Management

Stormwater ponds are one of the most effective techniques for providing channel protection and pollutant removal prior to entering the existing streams. Stormwater ponds are among the most adaptable, effective and widely applied stormwater treatment practices in developing areas. The popularity of stormwater ponds can be attributed to their proven ability to attenuate flows from design storms. Stormwater ponds and wetlands are common practices for treating stormwater runoff.

The fact that this site has both existing wetlands and ponds, with the land use cover that presently exists (row crops), shows that the wetlands and pond on site are acting as a water quality practice prior to the runoff leaving this site.

With the introduction of single family lots, permanently vegetated landscape open areas, and additional ponds, the amount of pollutants leaving the site will decrease, thus the runoff will be reduced prior to entering the existing aquatic resource areas.

During the design of the stormwater practices the designers and the developer will work with the Sussex Conservation District to achieve the best management practices (BMPs) for the development.

If the existing ponds and wetlands are to be used for stormwater practices the designers will achieve all County, State and Federal permits prior to construction.

Habitat

Land Use and Habitat Classification

Five land use categories are currently found within the 180.33 acre subject parcel:

- | | |
|-----------------------------|--------------|
| a) Farm Ponds and Ditches | 4.79 acres |
| b) Forest | 23.41 acres |
| c) Fallow Ag Land | 29.96 acres |
| d) Farmed Lands (Corn) | 119.29 acres |
| e) Abandoned Buildings/Lots | 2.88 acres |

Within the existing land use categories, four habitat types were classified:

- | | |
|--------------------------|--------------|
| f) Clear-cut forest | 18.70 acres |
| g) Mixed Hardwood Forest | 4.71 acres |
| h) Agricultural Land | 149.25 acres |
| i) Ponds and Ditches | 4.79 acres |

These habitat types are described below (Locations of the field observation points referred to in the community descriptions).

Clear-Cut Forest

Approximately 18.70 acres of early succession clear-cut forest is present in the Northeast corner of the property. The stand consists of 12.59 acres uplands and 6.11 acres wetlands. A representative community description for each is given below.

Upland Clear-Cut Forest

This entire wooded area was clear-cut in approximately 2002. A few "seed" trees were left standing, consisting mostly of Sweet Gum (*Liquidambar styraciflua*) and Red Maple (*Acer rubrum*), with an occasional White Oak (*Quercus alba*) and Southern Red Oak (*Quercus falcata*). The larger trees averaged about 50-60 feet in height, with DBH measurements in the 10-14 inch range. Their occurrence was sparse, however, averaging only about 10 trees per acre. A representative point to observe this community can be found at Observation Point #1 (See Figure 1 & Photo 1).

The forest is undergoing natural regeneration and was dominated by young Tulip Poplar (*Liriodendron tulipifera*) trees in the 10-15 feet height range and the 1-2 inch DBH class at the time of the investigation. This species was followed

closely in abundance by Red Maple, Wild Black Cherry (*Prunus serotina*), Sassafras (*Sassafras albidum*), American Holly (*Ilex opaca*), Hercules Club (*Aralia spinosa*), and Winged Sumac (*Rhus copallinum*). Virginia Creeper (*Parthenocissus quinquefolia*) was a common high-climbing vine and a few Trumpet Creeper (*Campsis radicans*) and Poison Ivy (*Toxicodendron radicans*) vines were also noted. The combination of the above woody species was so dense, that the area was almost impenetrable in places.

In the light gaps created by the occasional logging roads, several herbaceous species were observed. These included Fireweed (*Erechtites hieracifolia*), Pokeweed (*Phytolacca americana*), Barnyard Grass (*Echinochloa crusgalli*), Dog Fennel (*Eupatorium capillifolium*), Giant Foxtail Grass (*Setaria faberi*), and Late-flowering Thoroughwort (*Eupatorium serotinum*).

Wetland Clear-Cut Forest

The wetlands of this forested section consist of a mosaic of depressions, some of which were deep enough to hold water well into the growing season. The deeper basins were characterized by a layer of sphagnum moss and a lower incidence of invasion by woody species. A typical example of this community can be seen at Observation Point #3 (See Figure 1 & Photo 2). Some large trees were present throughout the wetland areas. These were mostly Red Maple, Black Gum (*Nyssa sylvatica*) and Sweet Gum, with an average height of 50-65 feet and an average DBH of 10-14 inches. The density of the mature trees ranged from approximately 10-30 trees per acre.

Except for the large trees left standing, the majority of the woody vegetation of this area was composed of Sweet Pepperbush (*Clethra alnifolia*) and saplings of tree species, such as Sweet Gum, Red Maple, Black Gum, and American Holly that reached heights of 5-15 feet. Lesser amounts of the shrubs Fetter-Bush (*Leucothoe racemosa*), Highbush Blueberry (*Vaccinium corymbosum*), Swamp Azalea (*Rhododendron viscosum*), Sweetbay Magnolia (*Magnolia virginiana*), Southern Bayberry (*Myrica cerifera*), and Red Chokeberry (*Aronia arbutifolia*) were also present. Common Greenbrier (*Smilax rotundifolia*) and Blackberries (*Rubus spp.*) were also abundant in this area. The woody vegetation was dense in the drier sections, but thinned out considerably in the deeper, wetter depressions. Forest succession to tree species was lagging behind the rest of the site.

The more open canopy found in the depressions permitted extensive herbaceous communities to develop. The most prevalent herbaceous species noted were Common Reed (*Phragmites australis*), Wool-Grass (*Scirpus cyperinus*), Warty Panic Grass (*Panicum verrucosum*), Fireweed, and Broom-Sedge (*Andropogon virginicus*).

Mixed Hardwood Forest

Non-tidal Red Maple Floodplain Swamp

In the Southeast Corner of the property, a small tributary of Old Mill Creek (Red Mill Pond) flows through a small woodland of about 4.71 acres. A typical view of this habitat can be seen from Observation Point #10 (See Figure 1 & Photo 3). The vegetation found along this stream is quite typical of other Red Maple swamps on the Delmarva Peninsula. The canopy is almost exclusively Red Maple, with typical heights of 55-70 feet and an average DBH of about 11-15 inches, although a few larger specimens were approaching 24 inches DBH. The basal area of the trees here was about 80 square feet per acre and the tree density was about 240 trees per acre. The sub-canopy was made up largely of Sweetbay Magnolia and smaller Red Maple trees. The shrub layer was dominated by Sweet Pepperbush, with a few Red Chokeberry and Highbush Blueberry.

The herbaceous layer was thick and was dominated by Jewelweed (*Impatiens capensis*) and Lizard's Tail (*Saururus cernuus*), with lesser amounts of Fowl Mannagrass (*Glyceria striata*), Stout Wood Reedgrass (*Cinna arundinacea*), False Nettle (*Boehmeria cylindrica*), and Arrow Arum (*Peltandra virginica*).

Agricultural Land

Approximately 119.29 acres of the site is currently in agricultural production. A corn crop was produced during the 2003 and 2004 growing seasons.

Approximately 29.96 acres of the property consists of fallow agricultural fields. This can be seen from Observation Point #5 (See Figure 1 & Photo 8). This habitat is dominated by alien species, including Lamb's Quarters (*Chenopodium album*), Common Reed, and White Heath Aster, with lesser amounts of Pokeweed, Giant Foxtail Grass, Pennsylvania Smartweed, Mexican Tea (*Chenopodium ambrosioides*), and Groundsel Tree (*Baccharis halimifolia*).

Farm Ponds and Ditches

The tributary of Old Mill Creek mentioned above forks into two branches, which both terminate in excavated ponds on the property (See Figure 1). The northernmost pond has an area of approximately 2.75 acres, while the southern pond is approximately 2.04 acres.

The northern pond almost 100% dominated by a dense stand of Common Reed. Because of this, no other species were seen here, except for a few small Red Maple trees and some dead standing tree snags. A typical example of this area can be seen from Observation Point #4 (See Figure 1 & Photo 4).

The southern pond is generally deeper than the Northern Pond and as a result has no emergent vegetation present. The shoreline surrounding the pond, however, was dominated by a herbaceous community made up largely of alien species. This can be seen from Observation Point #7 (See Figure 1 & Photo 5). Starting at the higher landscape positions, the dominant plant is Tall Fescue (*Festuca elatior*), followed by Ragweed (*Ambrosia artemisiifolia*), Pokeweed, Common Evening Primrose (*Oenothera biennis*), and Giant Foxtail Grass. Closer to the pond, Reed Canary Grass (*Phalaris arundinacea*) dominates, with lesser amounts of Barnyard Grass, Curly Dock (*Rumex crispus*), Pennsylvania Smartweed (*Polygonum pennsylvanicum*), Straw-colored Flatsedge (*Cyperus strigosus*), and Broadleaf Cattail (*Typha latifolia*).

Drainage Ditches

A drainage ditch approximately 1600 feet long circles the Southern Pond described above to the north and east and connects directly with the tributary of Old Mill Creek mentioned previously. The upper portion of the ditch is different vegetatively from the lower portion and will thus be described separately.

The upper 500 feet of the drainage ditch is dominated by diverse herbaceous vegetation. This can be seen from Observation Point #9 (See Figure 1 & Photo 6). The lower, wetter sections are dominated by Straw-colored Flatsedge, patches of Common Reed, and Pennsylvania Smartweed. The higher banks are populated by Canada Goldenrod (*Solidago canadensis*), Curly Dock, White Heath Aster (*Aster ericoides*), Common Burdock (*Arctium minus*), Giant Foxtail Grass, Giant Ragweed (*Ambrosia trifida*), Hedge Bindweed (*Calystegia sepium*), and Clammy Ground Cherry (*Physalis heterophylla*).

The lower 1100 feet of the ditch has large patches of Common Reed alternating with Black Willow (*Salix nigra*). This habitat can be viewed from Observation Point #8 (See Figure 1 & Photo 7).

RARE THREATENED AND ENDANGERED SPECIES

Correspondence was sent on August 2, 2004 to the Delaware Natural Heritage Program and the U.S. Fish and Wildlife Service to requesting a review of their records concerning the presence of and state rare or federally listed threatened, endangered species, or critical habitat that may be affected by the proposed project.

A species survey was conducted during the wetland and habitat classification investigations. No state rare or federally listed threatened or endangered species were identified within the subject parcel during the investigations. Field meetings with these agencies have been requested as a component of the natural heritage review process.

Public Service Commission

At this time the Developers have entered into an agreement with Tidewater Utilities, Inc., and a CPCN is being initiated at this time.

Underground Gas service will be provided to all residents of this development. A central location for the service will be designed and submitted to the appropriate agencies prior to construction.

State Fire Marshal's Office

All comments are recognized and will be addressed prior to final subdivision approval.

Delaware Department of Agriculture (DDA)

Due to the presence of an Agricultural Preservation District more than 300 feet from the subject property, DDA suggests a modified agricultural notice be included in each new deed generated by the proposed subdivision. It should be noted, however, that there is redundancy and overlap in this request with regards to Sussex County Codes. Item G. (2) under Article I, Subsection 99-6 of the Sussex County Code requires a similar notice for *any* property within 300 feet of lands used primarily for agriculture. This ordinance applies to the subject property.

To meet with both DDA's suggestion and County requirements, the following hybrid notice will be used:

"This property is located in the vicinity of an established Agricultural Preservation District and land used primarily for agricultural purposes on which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance or inconvenience which may result from such normal agricultural uses and activities."

Delaware State Housing Authority

As discussed earlier in this letter, the Comprehensive Plan supports a project of this scale as long as the current zoning is being adhered to. This project will not increase its density and will keep with the current zoning code for all development. This project has limited its development onsite to ensure that the existing natural resources on site will stay intact. The offsite improvements to roadways will increase mobility. The housing types planned for this development is in keeping with the surrounding areas. This project will have a community center that will support the activities of this development.

We anticipate that this letter has addressed all of the concerns and recommendations of the Office of State Planning Coordination and the relating agencies. If you should have any questions please do not hesitate to call me.

Sincerely,

For Design Consultants Group, L.L.C.

A handwritten signature in black ink, appearing to read 'Mark H. Davidson', with a stylized flourish at the end.

Mark H. Davidson
Owner

pc: Developer
Sussex County