



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
STATE PLANNING COORDINATION

May 25, 2006

Mr. Robert Sevensky
Remesh C. Batta Associates, P.A.
4600 New Linden Hill Road
Wilmington, De 19808

RE: PLUS review – PLUS 2006-04-03; Lewes Shores Estates

Dear Mr. Sevensky:

Thank you for meeting with State agency planners on May 3, 2006 to discuss the proposed plans for the Lewes Shores Estates project to be located on the west side of Hudson Road just north and adjacent to the Cripple Creek Subdivision.

According to the information received, you are seeking site plan approval for 60 residential units on 81.05 acres. This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is in the Low Density area according to the Sussex County Comprehensive Plan. **The comments in this letter are technical, and are not intended to suggest that the State supports this development proposal. This letter does not in any way suggest or imply that you may receive or may be entitled to permits or other approvals necessary to construct the development you indicate or any subdivision thereof on these lands.**

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as Sussex County is the governing authority over this land, the

developers will need to comply with any and all regulations/restrictions set forth by the County.

The following are a complete list of comments received by State agencies:

Office of State Planning Coordination – Contact: Herb Inden 739-3090

This project represents a major land development that will result in 60 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in relevant municipal and county certified comprehensive plans. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring more than 150 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100% of road maintenance and drainage improvements for the transportation system, 100% of school transportation and paratransit services, up to 80% of school construction costs, and about 90% of the cost of police protection in the unincorporated portion of Sussex County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

Because the development is inconsistent with the *Strategies for State Policies and Spending*, the State is opposed to this proposed subdivision.

Division of Historical and Cultural Affairs – Contact: Alice Guerrant 739-5685

The Division of Historical and Cultural Affairs are not in favor of this development in Level 4 because it will cause a further loss of the historic agricultural landscape and lead to the loss of historic properties as well as adverse noise and possibly visual effects on nearby historic properties.

While nothing is known in this parcel, Beers Atlas of 1868 shows the N. W. Hickman House near the center of the parcel. There are buildings still standing in the general area of this property in the 2002 aeriels. There may be archaeological resources associated with the Hickman House. In addition, there are areas with a high potential for prehistoric archaeological sites within the parcel.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Hickman house, usually a good distance behind or to the side of the house. The agency should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out. The DHCA will be happy to discuss these issues with the agency; the contact person for this program is Faye Stocum, 302-736-7400.

If this development proceeds, they would appreciate the opportunity to record any older buildings in the farm complex prior to any demolition activities. The DHCA would also appreciate the opportunity to look for archaeological sites and learn something about their location, nature, and extent prior to any ground-disturbing activities.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

Salvatore Cangiano seeks to develop 60 single-family detached houses on an approximately 81.05-acre assemblage of parcels (Tax Parcels 2-35-22.00-4.00 and 5.04). The subject land is located on the west side of Hudson Road (Sussex Road 258) between Brickyard Road (Sussex Road 257) and Eagles Crest Road (Sussex Road 264). The land is zoned AR-1 in Sussex County and it would be developed by right.

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies for State Policies and Spending* has deemed the type of development being proposed inappropriate for this area. As part of our commitment to support the *Strategies*, DeIDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DeIDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 Areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. DelDOT encourages the use of transfer of development rights where this growth management tool is available.

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide technical review and comments.

**The Department of Natural Resources and Environmental Control – Contact:
Kevin Coyle 739-9071**

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and county certified comprehensive plans. According to the *Strategies* this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional state investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are: potential impacts to all three layers of green infrastructure (natural resource and recreation priorities, cropland, and forest land), a significant increase in the amount of impervious cover, the loss/fragmentation of 26 out of 55 acres of forest, and the potential impacts to water quality from sixty (60) individual on-site septic systems. While mitigating measures such as conservation design, central wastewater systems

instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

Green Infrastructure

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the landowner and development team to protect sensitive resources through an appropriate site design.

Soils

According to the Sussex County soil survey Greenwich, Runclint, Rosedale, Evesboro, and Transquaking-Misphillion complex were mapped on subject parcel. Greenwich, Runclint, and Rosedale are well-drained upland soils that, generally, have few limitations for development. Evesboro is an excessively well-drained upland soil that has moderate limitations for development on account of its rapid permeability. Transquaking-Misphillion complex soils are very poorly-drained wetland associated (hydric) soils that have severe limitations for development.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine tidal wetlands on this parcel.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. A 100-foot vegetated buffer should be implemented from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

This project is located directly adjacent to sensitive headwater wetlands directly adjacent to Beaverdam Creek, which ultimately drains into the greater Broadkill River watershed. This greatly increases the probability of harmful impacts to both surface and groundwater quality of all waters within this watershed which will make it more difficult for the State to achieve future required TMDL nutrient reductions. In recognition of the likely impacts to water and habitat quality and the necessity to protect it for long-term sustainable use, the Watershed Assessment Section strongly urges the applicant to urged to consider retaining an upland buffer width of at least 100-foot from all wetlands and water bodies. The applicant's current proposal to retain just a 50-foot buffer from just water bodies is not sufficient to mitigate impacts to water quality and habitat.

Wetland Regulations

PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763. A State of Delaware Subaqueous Lands Jurisdictional Determination should also be conducted.

In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Riparian and Wetland Buffers

According to the application, Beaverdam Creek is the intended outlet for stormwater generated by this site. Essentially, whatever chemicals residents use on their lawns or spill in their driveways could end up in the Creek and be detrimental to water quality and impact both rare species and other aquatic life. We recommend that the creek not be the designated outlet and adequate buffers of a minimum of 100 feet (not a minimum of 50 feet) be left intact around all wetlands to protect the function and integrity of the wetlands. Lot lines and infrastructure should not be located within this buffer zone and it should be placed in permanent conservation so that future clearing does not occur.

Impervious Cover

Based on a review of the submitted PLUS application, the applicant projects that only about 10.5% of this parcel will be rendered impervious following this parcel's development. However, given the scope and density of this project, this figure is obviously a significant underestimate. The applicant should be made aware that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation; otherwise, an inaccurate assessment of this project's actual environmental impacts will be made. It is strongly advised, therefore, that the applicant recalculate this project's surface imperviousness using the aforementioned considerations.

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. Based on analyses of 2002 aerial photography by the University of Delaware, the Broadkill River watershed, at that time, had about 7.9 percent impervious cover. Although this data is about 4 years old and likely an underestimate, it illustrates the importance of a proactive strategy to mitigate for predictable and cumulative environmental impacts. Since the amount of imperviousness generated by this project (reported as 10.5%, but likely to be much higher) will significantly exceed the desirable watershed threshold of 10 percent, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an significant efforts to protect more of the

existing forest cover are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

TMDLs

With the adoption of Total Maximum Daily Loads (TMDLs) as a “nutrient-runoff-mitigation strategy” for reducing nutrients in the Broadkill River watershed, reduction of nitrogen and phosphorus loading will be mandatory. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited water body” can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Nutrient reductions prescribed under TMDLs are assigned to those watersheds or basins on the basis of recognized water quality impairments. Although TMDL nutrient reductions for nitrogen and phosphorus have not been officially finalized for the Broadkill River watershed to date, it is expected that a 40 percent reduction will be required for both nitrogen and phosphorus.

TMDL Compliance through the PCS

The proposed Pollution Control Strategy requires the completion of a nutrient budget to estimate nutrient load changes following development; documentation of these load changes will be assessed through a nutrient budget protocol. The nutrient budget protocol is a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. The post-development loading rate is then compared with the pre-development loading rate to assess whether the project meets the prescribed TMDL nutrient load reductions. Based on anecdotal accounts from nutrient modeling experts, it is likely (though not yet given official sanction) that the Broadkill watershed will be assigned post-development loading rates reductions for nitrogen and phosphorus of 40 percent. A preliminary evaluation of this project (using the applicant’s assumptions as reported in the PLUS application), this project as currently conceived, **will not** meet the expected Broadkill watershed TMDL reduction requirements for nitrogen. An estimate of this project’s ability to meet the post-development phosphorus loading rate was not assessed at this time because some of the model assumptions (i.e., phosphorus loading rates from various land uses and land-use conversions) have not undergone a full review process to ensure technical validity. Therefore, phosphorus runoff impacts should not be assumed until this issue is resolved.

The applicant is strongly advised to be proactive and consider the use of appropriate BMPs and Best Available Technologies (BATs) as a means to ensure compliance with TMDL reduction requirements. Examples of BMPs or BATs that should be used to

significantly reduce nutrient loading from this project include practices that prevent or mitigate or minimize created surface imperviousness, maintenance/restoration of recommended wetland buffer widths, reducing the amount of overall forest cover removal, utilization of performance-based wastewater disposal systems or - better yet - connection to public sewer (if available), and use of innovative “green-technology” stormwater methodologies rather than conventional open-water stormwater management structures. As mentioned previously, the impervious cover figure should be recalculated to include all forms of created surface imperviousness (i.e., rooftops, sidewalks, and roads); otherwise, this project’s true environmental impacts will be underestimated. We also suggest that the applicant verify their project’s compliance with the specified TMDL loading rates by running the model themselves (with a more realistic impervious cover figure). The applicant is requested to periodically check with our office for updated version of nutrient budget protocol. Please contact Lyle Jones of Watershed Section at 739-9939 for the acceptable model protocol.

Water Supply

The project information sheets state that Tidewater Utilities will be used to provide water for the proposed project. Our records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity number 05-CPCN-23. We recommend that the developer contact Artesian Water Company to determine the availability of public water. Any questions concerning CPCNs should be directed to the Public Service Commission at 302-739-4247. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any well(s).

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.

It is strongly recommended that you contact the Sussex Conservation District to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion.

A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to the Division of Soil and Water Conservation along with the \$195 NOI fee prior to plan approval.

Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on structural stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique.

Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption.

Clearly address how Stormwater Quality and Quantity Treatment will be provided. If this project is eligible for a Quantity Waiver, please make the request in the stormwater narrative citing the specific regulation.

Please indicate on the sediment and stormwater management plan who shall be responsible for maintenance of the stormwater management facilities both during construction and after. During the design of the sediment control and stormwater management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.

If a stormwater management pond is going to be utilized as a sediment trap/basin during construction, it must be designed to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete.

All ponds are required to be constructed per Pond Code 378.

Please note that if the stormwater facilities will impact wetlands, a permit must be provided to the District prior to receiving approval. Please address.

A Certified Construction Reviewer (CCR) is required for any project that is 50 acres or greater.

DNREC regulations require no more than 20 acres to be disturbed at one time. A phased erosion and sediment control plan and sequence of construction will be required.

Under the DNREC Health and Safety Memo of 2000, all wet ponds are required to have an open space depth of 3 feet or more that comprises 50-75 percent of the area of the pond.

Consideration should be made for any adjacent properties during the design of the project, including drainage and erosion/sediment control.

If any waivers and variances are sought for the project in question, these items should be addressed at the preliminary meeting. Any requests for waivers and variances should be included in the stormwater report narrative.

Drainage

This project does not fall within a tax ditch area, but it may possibly provide a drainage solution to adjacent road drainage. A survey is to be conducted soon of the poor road drainage conditions. This parcel could possibly provide a drainage outlet.

In addition, the Drainage Section advises the following in site development:

The Drainage Section requests that all existing ditches on the property be checked for function and cleaned if needed prior to the construction of homes. Wetland permits may be required before cleaning ditches.

The Drainage Section requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water.

The Drainage Section strongly recommends that any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. The easement

should be of sufficient width to allow for future drainage maintenance as described below:

- Along an open ditch or swale, the Drainage Section recommends a maintenance equipment zone of 25 feet measured from the top of bank on the maintenance side, and a 10-foot setback zone measured from top of bank on the non-maintenance side. These zones should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be native species spaced to allow for drainage maintenance at maturity. Trees should not be planted within 5 feet of the top of ditch to avoid future blockages from roots.

- Along a stormwater pipe, the Drainage Section recommends a maintenance equipment zone of 15 feet on each side of the pipe as measured from the pipe centerline. This zone should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be spaced to allow for drainage maintenance at maturity.

The Drainage Section recommends that any drainage/utility easement owned by an individual landowner should not have structures, decks, buildings, sheds, kennels, fences or trees within the drainage easement to allow for future drainage maintenance.

Floodplains

Portions of the property are located in the 100-year floodplain. Buildings should be kept outside and above the 100-year (base flood elevation) flood level. If FEMA has not determined base flood elevations for the site, a flood study is required.

Open Space

In areas set aside for passive open space that are not already forested, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a

homeowners association will take over responsibility for maintenance of community open spaces.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

Rare Species

According to our database Red-headed woodpecker (*Melanerpes erythrocephalus*) occurs in the vicinity and may be present within the project area. This State-Endangered bird is a cavity nester and could be impacted directly by tree clearing. According to "Birds of Delaware" (Hess et al. 2000) this species could be extirpated from Delaware if open mature forest and forest remnants with dead trees are not preserved. There is a large amount of forest loss associated with this project (26 out of 55 acres) and other birds and wildlife utilizing the forest could be impacted as well.

Delmarva Fox Squirrel

The federally endangered Delmarva fox squirrel (*Sciurus niger cinereus*, DFS) occurs at the Prime Hook National Wildlife Refuge and in nearby woodlands. Although this project is south of the federal regulatory protection zone, there is a possibility that DFS inhabit the forest within the project area and could be impacted by tree clearing. They generally inhabit mature forests with open understories and wet woodlands, but can be opportunistic in their habitat choice. You are not required by federal or state law to conduct surveys or consult regarding DFS. However, the Natural Heritage and Endangered Species Program would like to offer to help ensure that none are present within the project area. Please contact Holly Niederriter at (302) 653-2880 if you are interested in a DFS site visit or review.

Ancient Sand Ridge Forest

According to our GIS database and aerial photographs, an ancient sand ridge forest potentially exists on a portion of this property. This forest type develops on well-drained sandy substrates of ancient, prehistoric sand ridges or dunes. These ridges are unique geologic features on the landscape that were created by wind-blown sediments about 13,000 to 30,000 years ago when the climate was much cooler and drier. The forests are typically composed of several species of oak, as well as species of hickory and pine. Many of these ridges have been identified as occurring along the east side of the Nanticoke River, south of Seaford. However, their distribution in Delaware is not entirely clear and they may be more widespread in Sussex County, as well as in Kent County, but more study is needed. The ancient sand ridge forest type is often home to several state

rare plant species and one species in particular, wild lupine (*Lupinus perennis*) is the host plant for a state and globally rare butterfly, the frosted elfin (*Callophrys irus*). More surveys are needed, but there is potential for other rare and uncommon insects and animals to be found within this forest type. Protection of these ancient sand ridges and associated forests are critical to the long term conservation of the states natural heritage.

Site Visit Request

In order to provide more informed comments and to make reasonable recommendations, our program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and to ensure that the project is environmentally sensitive. Please contact Bill McAvoy or Kitt Heckscher at (302) 653-2880 to set up a site visit.

Forest Preservation

This project will result in more than 50% forest loss and could potentially impact rare species; therefore, the site plan should be changed to allow for greater forest preservation. There should be a larger area of forest left as open space for wildlife and for use by residents. This could be accomplished by reducing the number of lots and infrastructure so that this development has a smaller footprint. At the very least consideration should be given to minimizing the amount of clearing needed for the footprint of homes and infrastructure by clustering in areas already cleared. However, once homeowners become established, further clearing for sheds, pools, play areas, etc. will likely occur. We recommend deed restrictions or conservation easements to protect from further clearing.

In addition, trees should not be cleared from April 1st to July 31st to reduce impacts to birds and other wildlife that utilize forests for breeding.

When forested areas are cleared, a host of animal species must disperse into surrounding areas which often leads to human/animal conflicts, including interactions on the roadways. Forest fragmentation also separates wildlife populations and increases 'edge effects' that leave many forest dwelling species vulnerable to predation and allows the infiltration of invasive species.

Plant Rescue

Because there is forest loss and wetland impacts associated with this project, we recommend that the developer/landowner contact the Delaware Native Plant Society to

initiate a plant rescue. Selected plants from the site of disturbance will be collected by Society members and transplanted to the Society's nursery. Plants will then be used in restoration projects and/or sold at the Society's annual native plant sale. This can be done at no expense or liability to the developer/landowner. Please contact Lynn Redding at (302) 736-7726 or lynn_redding@ml.com.

State Resource Areas/Natural Areas

The Office of Nature Preserves respectfully requests the applicant redesign the site in such a way as to maintain the integrity of the forested area. Both the Open Space Council and the Natural Areas Advisory Council recently moved to amend the State Resource Area map and the Natural Areas Inventory map and identified the forested area on the site as both a State Resource Area and a State designated Natural Area.

State Resource Area lands include any open lands characterized by great natural scenic beauty, or whose existing openness, natural condition or present state of use, if retained, would maintain important recreational areas and wildlife habitat, and enhance the present or potential value of abutting or surrounding urban development, or would maintain or enhance the conservation of natural or scenic resources, including environmentally sensitive areas.

Natural Areas involve areas of land or water, or of both land and water, whether in public or private ownership, which either retains or has reestablished its natural character (although it need not be undisturbed), or has unusual flora or fauna, or has biotic, geological, scenic or archaeological features of scientific or educational value.

The site design currently proposed would infringe on the ecological functions of the forested riparian area. The Office of Nature Preserves strongly urges the applicant to consider smaller lot sizes so as to keep the density while preserving the forested resources on the site. Additionally, removing forests to locate stormwater management facilities is not supported by the Department which lends to the argument that the applicant should further reconsider the proposed site design.

Solid Waste

Each Delaware household generates approximately 3,600 pounds of solid waste per year. On average, each new house constructed generates an additional 10,000 pounds of construction waste. Due to Delaware's present rate of growth and the impact that growth will have on the state's existing landfill capacity, the applicant is requested to be aware of the impact this project will have on the State's limited landfill resources and, to the extent

possible, take steps to minimize the amount of construction waste associated with this development.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 4.6 tons (9,209.4 pounds) per year of VOC (volatile organic compounds), 3.8 tons (7,624.7 pounds) per year of NO_x (nitrogen oxides), 2.8 tons (5,625.7 pounds) per year of SO₂ (sulfur dioxide), 0.3 ton (500.8 pounds) per year of fine particulates and 385.2 tons (770,352.4 pounds) per year of CO₂ (carbon dioxide).

However, because this project is in a level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NO_x; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NO_x emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1, 2 or 3).

Emissions from area sources associated with this project are estimated to be 1.9 tons (3,714.6 pounds) per year of VOC (volatile organic compounds), 0.2 ton (408.7 pounds) per year of NO_x (nitrogen oxides), 0.2 ton (339.2 pounds) per year of SO₂ (sulfur dioxide), 0.2 ton (437.7 pounds) per year of fine particulates and 7.5 tons (15,058.0 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 0.7 tons (1,472.2 pounds) per year of NO_x (nitrogen oxides), 2.6 tons (5,120.6 pounds) per year of SO₂ (sulfur dioxide) and 377.6 tons (755,294.4 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	4.6	3.8	2.8	0.3	385.2
Residential	1.9	0.2	0.2	0.2	7.5
Electrical Power		0.7	2.6		377.6
TOTAL	6.5	4.7	5.6	0.5	770.3

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 0.7 tons of nitrogen oxides per year and 2.6 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, <http://www.energystar.gov/>:

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment.”

The Energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal’s Office – Contact: Duane Fox 856-5298

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal’s Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements:**

- Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.
- The infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Accessibility:**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Hudson Rd must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

c. **Gas Piping and System Information:**

- Provide type of fuel proposed, and show locations of bulk containers on plan.

d. **Required Notes:**

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.delawarestatefiremarshal.com, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Milton Melendez 698-4500

The proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support this type of isolated development in this area. The intent of this plan is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes the proposed development which conflicts with the preferred land uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

A portion of this site is designated as a "good" recharge potential area. DNREC has mapped all ground-water recharge potential areas. A good rating is the second highest rating and designates an area as having important ground-water recharge qualities. Maintaining pervious cover in "Excellent" and "Good" recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure an adequate and safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware.

Additionally, this site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Crop Land and Natural Areas layers are present on this site; this designation identifies areas that possess unique natural features that are valuable for preservation.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries.

Public Service Commission - Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Karen Horton 739-4263

The proposal is to develop 60 single family lots having an average lot size of 0.84 acres. The proposal is located on the west side of Hudson Road just North and adjacent to Cripple Creek Subdivision. According to the *State Strategies Map*, the proposal is located in an Investment Level 4 area. As a general planning practice, DSHA encourages residential development only in areas where residents will have proximity to services, markets, and employment opportunities, such as Investment Level 1 and 2 areas outlined in the State Strategies Map. Since the proposal is located in an area targeted for agricultural and natural resource protection, and therefore inconsistent with where the State would like to see new residential development, DSHA does not support this proposal.

Department of Education – Contact: John Marinucci 739-4658

DOE recognizes that this development project is in level 4 of the State Strategies for Policies and Spending and as such, DOE does not support the approval of this project.

DOE offers the following comments on behalf of the Cape Henlopen School District.

1. Using the DOE standard formula, this development will generate an estimated 30 students.
2. DOE records indicate that the Cape Henlopen School Districts' *elementary schools are not at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
3. DOE records indicate that the Cape Henlopen School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.

4. DOE requests developer work with the Cape Henlopen School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

Thank you for the opportunity to review this project. If you have any questions, please contact me at 302-739-3090.

Sincerely,



For Constance C. Holland, AICP
Director

CC: Sussex County