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November 27, 2006

Ms. Constance C. Holland, AICP  
State of Delaware Executive Department  
Office of Management and Budget  
State Planning Coordination  
122 William Penn Street, Third Floor  
Dover, DE 19901

**RE: PLUS review – PLUS 2006-10-02; Dove Estates**

Dear Ms. Holland:

The following comprises our response to the PLUS agency comments issued on November 17, 2006 for the Nanticoke View Property (formerly known as Dove Estates):

**Office of State Planning Coordination – Contact: Bryan Hall 739-3090**

This project represents a major land development that will result in 127 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located in the Low Density area according to the Sussex County certified comprehensive plan. 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 300 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.

**Response: While the developer recognizes the Department's concern with developing in an Investment Level 4 area, he feels the proposed residential development is consistent with land use in**

**adjacent parcels and in the general site area. The proposed subdivision is surrounded by high-density, residential development and is consistent with the adjacent land use.**

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

The Division of Historical and Cultural Affairs is not in favor of this development in Level 4. It will further damage the historic agricultural and forested landscape in this area, and may lead to the destruction of archaeological sites.

There is nothing known in this parcel. In general, the soils are too wet for much potential for archaeological sites of any period, except for the entrance to the property, where there is a high potential for a prehistoric-period archaeological site. If this project requires an Army Corps of Engineers permit due to wetland crossings, the developer will be required to consult with this office, and may be required to undertake archaeological investigations depending on the area of the Corps' jurisdiction.

If this project does proceed, the DHCA would appreciate the opportunity to examine the area for a possible prehistoric-period archaeological site, to learn something about its location, nature, and extent prior to any ground-disturbing activities.

**Response: The proposed subdivision will incorporate a 50' forested, riparian buffer adjacent to all wetlands on the site. Twenty two acres (46%) of the existing forested area will be preserved. The developer proposed to clear only the area within the right of way and that necessary to construct the proposed dwellings. If an Army Corps of Engineers permit is sought, the developer will coordinate with the State Historic Preservation Office as required by regulation.**

**Department of Transportation – Contact: Bill Brockenbrough 760-2109**

Because this development is proposed for a Level 4 Area, it is inconsistent with the *Strategies for State Policies and Spending*. As part of our commitment to support the *Strategies*, DelDOT 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. DelDOT 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.

**Response: While the developer understands DelDOT's opposition to development in a Level 4 area, the proposed subdivision is directly adjacent to existing, high-density residential development. All roads internal to the subdivision will be privately owned and maintained. In addition, a 10 foot wide right of way dedication is proposed along King Road.**

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

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., nonattainment 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. DNREC encourages 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 the potential impacts to the natural resource and recreation priorities layer of the Green Infrastructure map, the increase in impervious cover, the loss/fragmentation of forest (19 out of 49 acres or 39%), and the project's location in an excellent recharge area/adjacency to two well heads. 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 area 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.

**Response: The proposed subdivision is designed to preserve as much of the wooded area as feasible; clearing only what is necessary to construct the right of way and dwellings. The plan has been revised to preserve 46% of existing forested area. More than 38% of the subdivision is**

**designed as open space and many of the homes back to open space areas. In addition to the preserved forested area, landscaping and a 50' forested riparian perimeter buffer will be provided.**

### **Soils**

According to the Sussex County soil survey update, Rosedale, Hammonton, Rockawalkin, Klej, Askecksy, and Mullica were mapped in the immediate vicinity of the proposed development. Rosdale is a well-drained upland soil that, generally, has few limitations for development. Hammonton and Rockawalkin are moderately well-drained soils of low-lying uplands that have moderate limitations for development. Klej is a somewhat poorly-drained transitional soil that is likely to contain both wetland (hydric) and upland soil components. Askecksy and Mullica are poorly to very poorly-drained wetland associated (hydric) soils that have severe limitations for development.

**Response: The developer concurs with the assessment of soils at the site. A soils reconnaissance was performed on the site to isolate areas of poorly drained soils. The site will be designed to mimic the natural hydrology of the site while reducing post-development peak discharge rates, thus reducing any existing flooding problems.**

### **Wetlands**

Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested and palustrine emergent/scrub-shrub wetlands were mapped extensively over the western-half of subject parcel. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. The developer should maintain a 100- foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.

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.

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.

**Response: The developer will contact the Army Corps of Engineers to schedule a jurisdictional determination for the site.**

### **Impervious Cover**

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 20 percent. However, given the scope and density of this project, this estimate is potentially an **underestimate**. The applicant should recognize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be accounted for when calculating surface imperviousness. Furthermore, the applicant should also realize that the use of wetland and stormwater acreage for

calculating recreational or passive open space is not considered an acceptable practice. Failure to account for any of the above-mentioned concerns will significantly understate the amount of impervious cover produced by this project, which in turn will significantly underestimate this project's environmental impacts.

**Response: Final calculations of impervious cover for the proposed development will be provided.**

### **ERES Waters**

This project is located adjacent to receiving waters of the greater Nanticoke River designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Moreover, provisions defined in subsection 5.6.3.5 of same section, specially authorize the Department to mandate BMPs to meet standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

**Response: As part of the required stormwater management plan, the developer proposes to use Green Technology Best Management Practices (GTBMP's) to prevent adverse water quality impacts to the receiving water bodies. Specifically, most surface water runoff from the site will be directed through the GTBMP's that will likely consist of a series of biofiltration swales and bioretention facilities. These practices will effectively remove: sediments (typically beyond the 80% removal rate required by DNREC); oils and greases (including those associated with automobile fluids); and nutrients such as nitrogen and phosphorus. The use of GTBMP's will adequately minimize the potential impacts of the proposed development.**

### **TMDLs**

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Deep Creek watershed. 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. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the greater Nanticoke watershed, "target-rate-nutrient reductions" of 30 and 50 percent will be required for nitrogen and phosphorus, respectively.

As indicated above, Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been proposed for the Deep Creek watershed. The TMDL calls for a 30 and 50% reduction in nitrogen and phosphorus from baseline conditions. A pollution control strategy will be used as a regulatory framework to ensure that these nutrient reduction targets are attained. The Department has developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional nutrient reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, increasing passive, wooded open space, using enhanced nutrient removal wastewater technologies, and the use of stormwater management treatment trains. Contact Lyle Jones at 302-739- 9939 for more information on the assessment tool.

**Response: As previously mentioned, the developer proposes to use Green Technology Best Management Practice (GTBMP's) to prevent adverse water quality impacts to the receiving water bodies. These practices are the most effective methods to remove sediments, oils and greases, and**

**nutrients such as nitrogen and phosphorous. The use of GTBMP's will adequately minimize the potential impacts of the proposed development.**

#### **Water Resource Protection Areas**

The DNREC Water Supply Section has determined that the northeast corner of the proposed development falls within an excellent ground-water recharge area. The review found no wellhead protection areas within the project. The review did find two community wells adjacent to the site (see following map and attached map).

The Delaware Geological Survey Report of Investigations No. 66 was published in 2004.

This report, along with the accompanying maps were part of the "Shaping Delaware's Future" legislation (DOSPC, 2004). The intent of the project was to identify areas of excellent recharge to protect them as critical areas. Excellent recharge areas are nearsurface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. The Report states that the recharge potential "map categories are indicators of how fast contaminants will move and how much water may become contaminated" (Andres, 2004, pg 1).

This PLUS document shows a proposed wastewater management area within the excellent ground-water recharge area and approximately 560 feet up-gradient of two community wells (see map). From an engineering standpoint, this is an excellent placement of the facility. From a source-water stand point it is unwise. The applicant did not specify what type of wastewater treatment system is proposed and all systems are prone to small problems. The Dove Estate wells draw water from semiconfined and unconfined aquifers. If a problem were to occur in the system that released contaminants, they would pose a likely threat to the quality of water drawn by the Dove Estate wells. A more advanced wastewater treatment system will/may be necessary to assure the public supply wells are not impacted nor made to exceed any drinking water standards.

The proposed development would change the total impervious cover from 0% to approximately 20%. The developer on the PLUS application provided the numbers. DNREC Water Supply Section recommends that that portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover. The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies (DNREC, 2005).

Further, some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within these areas, provided the applicant submits an environmental assessment recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis. Commonly, the applicant offsets the loss of recharge due to impervious cover by constructing recharge basins that convey relatively pure rooftop runoff for infiltration to ground water (Kauffman, 2005).

**Response: As previously mentioned, Green Technology Best Management Practice (GTBMP's) will be incorporated in the proposed site to prevent adverse water quality impacts to the receiving water bodies. These practices will effectively remove: sediments (typically beyond the 80% removal rate required by DNREC); oils and greases (including those associated with automobile fluids); and nutrients such as nitrogen and phosphorous. The use of GTBMP's will adequately minimize the potential impacts of the proposed development.**

**Preliminary soils investigations indicate that this site may be suitable for the use of Rapid Infiltration Basins (RIBs) for wastewater disposal. In accordance with DNREC requirements, if**

**RIBs are used, an advanced wastewater treatment system will be constructed, operated, and monitored to ensure the water quality being discharged to the ground. In addition, a groundwater monitoring program will be developed to monitor the groundwater quality in the area of the disposal system.**

### Water Supply

The information provided indicates that Tidewater Utilities will provide well water to the proposed projects through a central public water system. Our files reflect that Tidewater Utilities does not currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at 302-739-4247. Should an on-site public well be needed, it must be located at least 150 feet from the outermost boundaries of the project. 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 wells.

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.

**Response: The proposed subdivision will provide water through a community system maintained by Tidewater Utilities Inc. The developer will coordinate with Tidewater Utilities to apply for the CPCN. All appropriate permits for these wells will be submitted to DNREC.**

### Sediment and Erosion Control/Stormwater Management

Standard Comments: 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 postdevelopment 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.

#### Site-Specific Comments:

A Certified Construction Reviewer (CCR) is required for this project.

The District will require a phased plan and sequence of construction for this project. DNREC regulations require no more than 20 acres to be disturbed at more time. Please address.

The District is aware that there have been historical drainage problems in this area. The District recommends contacting Brooks Cahall with the DNREC Drainage Section for technical assistance in locating the extent of the flooding areas.

Please demonstrate to the District that this project has an adequate outfall. Due to a history of drainage problems evaluate down stream.

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 this project, including drainage and erosion/sediment control.

Please provide a soil survey report for each SWM basin.

Please incorporate “Green Technology BMPs” in the stormwater management design as stated in the section 10.3.5.1 of the regulations. The District recommends green technology practices such as bioswales between the rear lots to provide drainage and water quality.

Please provide SCD with a copy of the AutoCAD drawings and HydroCAD files to expedite the review process.

**Response: A detailed stormwater management and erosion and sediment control plan will be prepared to address stormwater runoff quality, quantity, and volume. All sediment and stormwater management practices will be designed in accordance with the State Stormwater Regulations. Green Technology BMP’s will be incorporated throughout the site. Infiltration will be maximized where possible throughout the site in accordance with the above mentioned criteria. If discharge to the DelDOT system is required, the developer will coordinate with DelDOT to obtain necessary approvals.**

### Drainage

The Drainage Program has documented drainage concerns in this area. Drainage outlets for the northwestern portion of this property are through lands held by the Nanticoke River Watershed Conservancy. The Nanticoke River Watershed Conservancy has a habitat easement on the property prohibiting alteration in any way, including drainage maintenance performed by manual labor. In addition, the wetland in the center of the property drains to the south where there are historical drainage problems.

The Drainage Program requests that the engineer take precautions 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 Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.

The Drainage Program does not support the removal of trees for the creation of stormwater management areas. The Drainage Program does not have a clear understanding how stormwater will convey to the stormwater management areas. The Drainage Program requests that the routing of major stormwater pipes through yards be prohibited.

The Drainage Program encourages the elevation of rear yards to direct water towards the streets where storm drains are accessible for maintenance. However, the Drainage Program recognizes the need for catch basins in rear yards in certain cases. Therefore, catch basins placed in rear yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, kennels, and other structures placed along the storm drains, or within 10 feet of the catch basins, can hinder drainage patterns as well as future maintenance to the storm drains or catch basins. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.

The Drainage Program requests a 15-foot side yard setback on all lots with a drainage easement on the side. A 15-foot side yard setback will allow room for equipment to utilize the entire drainage easement and maneuver free of obstructions if the drainage conveyance requires periodic maintenance or future reconstruction.

The Drainage Program requests a 10-foot drainage easement around all catch basins located on private property to ensure adequate room for maintenance. The Drainage Program recommends restrictions on

fences, sheds, and other structures within the easement to prevent obstructions from being placed within 10 feet of the catch basin.

Record all drainage easements on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction.

For questions or clarifications, please contact Jim Sullivan at (302) 739-9921.

**Response: Drainage for this project will be through roadside swale draining to the proposed stormwater management facilities. The appropriate easements and setbacks will be provided.**

### **Rare Species**

DNREC has never surveyed this site; however, there are records of *Parula Americana* (Northern Parula), a State-Endangered bird, in a woodlot less than a mile from the project site. This species utilizes forested wetlands and moist upland forests for breeding and our GIS database indicates suitable habitat within the project area. Due to the close proximity of this rare species, and suitable habitat within the project area, this project lies within a State Natural Heritage Site. This is one of the criteria used to determine the presence of Critical Resource Waters. The final decision regarding Critical Resource Waters, if this is an issue, will be made by the U.S. Army Corps of Engineers (USACE). The information above will aid the Corps in their determination. We strongly encourage the applicant to alter the site plan and allow for greater forest preservation.

**Response: In addition to preserving the 10.8 acres of wooded wetlands, the developer is providing a 50 foot wide forested riparian buffer, preserving 46% of the existing forested area on the site.**

### **Site Visit Request**

In order to provide more informed comments and to make recommendations, our program botanist and zoologist request the opportunity to survey the forest and wetland areas that could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and unique habitats and to ensure that the project is environmentally sensitive. In addition, a survey of the project site will give staff an opportunity to document the biodiversity of the property before project activities begin. Please contact Bill McAvoy or Kitt Heckscher at (302) 653-2880 to set up a site visit.

**Response: The developer will contact the appropriate personnel to schedule a site visit.**

### **Forest Preservation**

The amount of forest loss estimated by the applicant should be re-evaluated, as the applicant states 19.07 out of 48.54 acres of forest will be cleared. However, there are at least 84 lots either completely or partially forested, roadways, and at least 4 stormwater management ponds within the forested area. Not only will these lots be cleared for homes, driveways and garages but subsequently by homeowners for sheds, play areas, pools, kennels etc. The minimal amount of forest that will be preserved is largely fragmented by lots and infrastructure.

Forest fragmentation separates wildlife populations, increases road mortality, and increases “edge effects” that leave many forest dwelling species, particularly songbirds, vulnerable to predation. Forest clearing causes wildlife to disperse into surrounding areas, often resulting in human/animal conflicts. It also puts

greater pressure on nearby Wildlife Areas, Nature Preserves, and other protected lands. A greater effort to preserve forest should be made and this could be accomplished by:

- Downsizing the current site plan by omitting lots and associated roads so that a larger, connected area of forested open space remains. Currently, other than one large area of wetlands that can't be used for lots, open space is small and disconnected in areas behind lots, on corners, and other 'left over' spaces. When open space is designed this way, required state/county 'open space percentages' may be fulfilled, but the areas in general are not useful to residents and can become a maintenance issue.

- Locating stormwater management ponds on the non-forested area of the parcel or utilizing an alternate method of stormwater control that does not require tree clearing. It does not make sense to clear trees which function in flood abatement to create a pond with the same purpose. In addition, residents whose lots are adjacent to these ponds but do not have adequate buffers, may have issues with goose droppings and less than ideal water quality (odoriferous algae and murky water).

- If tree clearing occurs despite the recommendations above, clearing should not occur April 1st to August 30th to reduce impacts to birds and other wildlife species that utilize trees for breeding. This recommendation would only protect those species during one breeding season, as once trees are cleared the result is an overall loss of habitat.

**Response:** The proposed subdivision has been designed to preserve as much of the wooded area as possible, clearing only what is necessary to construct the right of way, dwellings, and stormwater management. The developer's intent is to minimize tree clearing; unfortunately, the majority of the site is currently wooded and stormwater management is required in those areas. Any tree clearing will occur during the appropriate time period to reduce impacts to birds and other wildlife species. The plan has been designed to preserve 46% of existing forested area. In addition to the reserved forested area, landscaping and a 50' forested riparian buffer will be provided.

The plan has been reconfigured to eliminate the isolated open space areas behind lots.

### **Plant Rescue**

Since forested wetlands are to be destroyed, filled, or disturbed, 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.

**Response:** The developer will contact the appropriate agency to schedule a site visit.

### **Nuisance Geese**

The applicant indicated that nuisance geese would be considered in the planning of this project but methods of control were not indicated. Wet ponds planned for the subdivision may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese

when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number and/or size of the ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

**Response: The proposed stormwater management plan will include GTBMP's as much as possible, and minimizing the use of open water ponds. If open water ponds are deemed necessary to meet the State Stormwater Regulations, native plantings of tall grasses and proper landscaping will be incorporated into the stormwater management pond construction details to minimize the attraction of waterfowl.**

### 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.

**Response: The developer recognizes the solid waste impacts associated with land development and will minimize the amount of construction waste associated with land development and the amount of construction waste associated with the site to the extent feasible.**

### Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 9.7 tons (19,493.2 pounds) per year of VOC (volatile organic compounds), 8.1 tons (16,139.0 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 6.0 tons (11,907.7 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.5 ton (1,060.0 pounds) per year of fine particulates and 815.3 tons (1,630,579.2 pounds) per year of CO<sub>2</sub> (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<sub>x</sub>; 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<sub>x</sub> 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 3.9 tons (7,862.5 pounds) per year of VOC (volatile organic compounds), 0.4 ton (865.1 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 0.4 ton (717.9 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.5 ton (926.4 pounds) per year of fine particulates and 15.9 tons (31,872.7 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.6 tons (3,116.1 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 5.4 tons (10,838.7 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 799.4 tons (1,598,706.5 pounds) per year of CO<sub>2</sub> (carbon dioxide).

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.6 tons of nitrogen oxides per year and 5.4 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.

**Response: The developer recognizes the potential impacts to air quality associated with land development. The project is located adjacent to the growth areas, resulting in much lower emission than outlined above for a development 10 miles outside the growth zone. To reduce energy consumption, the developer will consider the use of Energy Star qualified homes.**

**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. Fire hydrants shall be activated for fire department used on or before the construction of the 51st structure.
- If the new water system is tied into Dove Estates or the Dove Estates water system is expanded into the new subdivision, fire protection shall be required in Dove Estates.

**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 King Road 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 turnaround 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](http://www.delawarestatefiremarshal.com), technical services link, plan review, applications or brochures.

**Response: The proposed project will comply with the State Fire Marshal requirements as outlined above.**

**Department of Agriculture - Contact: Scott Blaier 698-4500**

The proposed development is in an area designated as Investment Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support this type of isolated residential 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 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 property has been designated as having “excellent” ground-water recharge potential. DNREC has mapped all ground-water recharge-potential recharge areas for the state, and an “excellent” rating designates an area as having important groundwater recharge qualities. Senate Bill 119, enacted by the 141st General Assembly in June of 2001, requires the counties and municipalities with over 2,000 people to adopt as part of the update and implementation of their 2007 comprehensive land use plans, areas delineating excellent ground-water recharge potential areas. Furthermore, the counties and municipalities are required to adopt regulations by December 31, 2007 governing land uses within those areas to preserve ground-water quality and quantity.

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 a 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. The developer should make every effort to protect and maintain valuable ground-water recharge potential areas.

This site also overlaps with the State’s Green Infrastructure Investment Strategy Plan. The Natural Areas layer is present on the site. This designation indicates the land has valuable environmental characteristics and functions which are discussed in Governor Minner’s Executive Order Number 61. They should be preserved as such, and not developed for residential use.

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.

#### *Tree Mitigation*

The Delaware Forest Service encourages the developer to implement a tree mitigation program to replace trees at a 1:1 ratio within the site and throughout the community. This will help to meet the community’s forestry goals and objectives and reduce the environmental impacts to the surrounding natural resources. To learn more, please contact our offices at (302) 349-5754.

**Response:** The proposed subdivision will incorporate Green Technology BMP’s which promote infiltration to take advantage of the good recharge potential on the site. The proposed subdivision has been redesigned to preserve as much of the forested area as possible, clearing only what is necessary to construct the right of way and dwellings. The plan has been revised to preserve 46% of existing forested area. In addition, more than 38% of the subdivision is designed as open space and many of the homes back to open space areas. In addition to the preserved forested area, landscaping and a 50’ forested riparina buffer will be provided.

#### **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.

**Response:** The developer concurs that any expansion of natural gas or installation of a closed propane system must comply with Pipeline Safety guidelines.

**Delaware State Housing Authority – Contact Karen Horton 739-4263**

The proposal is a site plan review for 127 residential units on 73 acres located along King Road near the intersection of Dove Road, east of Seaford. 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.

**Response: While the developer recognizes the State's concern with developing in an Investment Level 4 area, the proposed subdivision is adjacent to high-density residential development and is consistent with the surrounding areas.**

**Department of Education – Contact: John Marinucci 739-4658**

1. This proposed development is in the Seaford School District.
2. 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.
3. DOE offers the following comments on behalf of the Seaford School District.
4. Using the DOE standard formula, this development will generate an estimated 63 students.
5. DOE records indicate that the Seaford School Districts' *elementary schools are not at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
6. DOE records indicate that the Seaford School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.
7. DOE requests the developer work with the Seaford 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.

**Response: The developer will coordinate with the School District to incorporate the necessary bus stop and shelter structures required for the proposed development.**

**Sussex County – Contact: Richard Kautz 855-7878**

The State Wetlands map indicates the possibility of wetlands impacting the location of proposed subdivision lots and roads. Therefore a jurisdictional determination letter should be provided to support the proposed design for that area and that the lot layout does not contain any wetlands. This letter should be obtained prior to the request for approval of any final plan.

The parcel appears to be zoned approximately 40% AR-1. If that is correct, the drawing should reflect the proper district boundaries and the lots should be sized accordingly. Sussex County will be considering recommendations regarding implementation of a Source Water Protection Program required by the State. Depending on the requirements adopted by the County Council this project might be affected. Any well location should insure that the wellhead protection area is entirely on site.

Article III of the Subdivision Regulations require that "A tract shall be subdivided so that no remnants or landlocked spaces without access are created." The remnants near lots 44/45; 86-89; 8-12; and the "lands of n/f W & C Catts Family Limited Partnership" should be eliminated.

Lot 56 could be eliminated to reduce the intrusion into the woods and wetlands.

The Sussex County Engineer Comments:

The proposed project is within the boundary of the Blades Planning Area, Priority Project Area I and proposes to develop using a community system provided by Tidewater Utilities, Inc. The Sussex County Engineering Department is currently conducting a study of the sewer needs for this area. The expected completion date of the study is August 2007. The Sussex County Engineering Department currently has no schedule to provide service to this area. The Sussex County Engineering Department recommends that the wastewater system be operated under a long-term contract with a capable wastewater utility. Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A review of the treatment and disposal system is required by the Sussex County Engineering Department. When Sussex County provides sewer service, it is required that the treatment system be abandoned and a direct connection made to the county system at the developers and/or homeowners association expense. A preliminary sewer concept plan must be submitted and approved prior to any construction review.

**Response: The plan has been revised to include the AR-1 zoning, with the appropriate lot size and density, resulting in 111 total lots. The isolated open space areas behind lots have also been eliminated.**

**The proposed private sanitary sewer collection and conveyance system will be designed in accordance with Sussex County Standards and specifications. A sewer concept plan will be submitted to Sussex County for approval prior to the design of the system. All disposal fields will be clearly identified on the recorded plan and will not be counted as open space.**

Should you have any questions, please feel free to contact me at our office (302) 765-3150.

Sincerely,



Jennifer M. Penozza, P.E.

JMP/gnw

cc: Sussex County  
Mr. Dan Foster