



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

April 15, 2008

Tom Bartosiewicz
Meridian Architects and Engineers
26412 Broadkill Road
Milton, DE 19968

RE: PLUS review – 2008-03-04; Hidden Oaks Subdivision; a/k/a Mystic Oaks

Dear Mr. Bartosiewicz:

Thank you for meeting with State agency planners on March 26, 2008 to discuss the proposed plans for the Hidden Oaks project to be located on the west site of Sand Hill Road and the east side of Downs Road north of Georgetown.

According to the information received, you are seeking site plan approval through Sussex County for 602 residential units on 335 acres located in Level 4.

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.

This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is within the Low Density area according to the Sussex County certified 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.**

This office has received the following comments from State agencies:

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

This project represents a major land development that will result in 602 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is within 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 1,400 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.

State Historic Preservation Office (SHPO) – Contact: Terrence Burns 739-5685

No comments received

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. We encourage 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 further 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 the Green Infrastructure map (Natural Resource and Recreation Priorities, Cropland, and Forests), an increase in impervious cover, the loss/fragmentation of 208 out of 335 acres (or 62%) of forest, the project's location in an excellent recharge area, the project's location in a State Resource

Area/Natural Area, potential impacts to Key Wildlife Habitat, and potential impacts to wetlands. 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 update, Klej and Mullica were mapped in the immediate vicinity of the proposed construction. Klej is a somewhat poorly-drained transitional soil likely to contain both wetland and upland soil components. Mullica is a very poorly-drained wetland associated (hydric) soil that has severe limitations for development.

Wetlands

Based on the Statewide Wetland Mapping Project (SWMP) mapping, palustrine wetlands were mapped on the far western portion of the parcel. However, it is likely that some unmapped wetlands may be present over much of this parcel as well.

The applicant is responsible for determining whether any State-regulated wetlands (regulated pursuant to 7 Del.C. Chapter 66 and the Wetlands Regulations) are present on the property. This determination can only be made by contacting the Division of Water Resources' Wetlands and Subaqueous Lands Section at 302/739-9943 and consulting the State's official wetland regulatory maps, which depict the extent of State jurisdiction. The area regulated by State law may be very different from the area under federal authority. No activity may take place in State-regulated wetlands without a permit from DNREC's Wetlands Section.

In addition, most perennial streams and ditches and many intermittent streams and ditches are regulated pursuant to the Subaqueous Lands Act (7 Del.C. Chapter 72) and the Regulations Governing the Use of Subaqueous Lands. Ponds which are connected to other waters are also regulated, while isolated ponds are not. Any work in regulated streams, ditches or ponds requires a permit from the Wetlands and Subaqueous Lands Section. An on-site jurisdictional determination is recommended in order to determine whether any regulated watercourses exist on the property. Contact the Wetlands and Subaqueous Lands Section at 302/739-9943 to schedule an on-site visit. Such appointments can usually be scheduled within 2 to 3 weeks.

The applicant should also be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are subject to regulatory jurisdiction under Section 404 provisions of the Clean Water Act. A site-specific field wetlands delineation using the methodology described in the 1987 United States Army Corps of Engineers (USACE, or "the Corps") manual is the only acceptable basis for making a jurisdictional wetland determination for nontidal wetlands in Delaware. The applicant is forewarned that the Corps views the use of the National Wetlands Inventory (NWI) mapping or the Statewide Wetlands Mapping Project (SWMP) mapping as an unacceptable substitute for a field-based jurisdictional wetland delineation (i.e., 1987 USACE manual). To ensure compliance with said Corps regulatory requirements, it is strongly recommended that a field wetlands delineation using the above-referenced methodology be performed on this parcel before commencing any construction activities. It is further recommended that the Corps be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant's consultant delineates what they believe are nonjurisdictional isolated (SWANCC) wetlands, the Corps must be contacted to evaluate and assess the jurisdictional validity of such a delineation. The final jurisdictional authority for making isolated wetlands determinations rests with the Corps; they can be reached by phone at 736-9763.

Based on a review of existing buffer research by Castelle et al. (1994), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from the landward edge of all wetlands and water bodies (including all ditches).

Impervious Cover

The applicant estimates this project's post-development surface imperviousness to reach 49 percent. However, given the scope and density of this project this projection may understate the actual amount of created surface imperviousness. The applicant should realize that all forms of constructed surface imperviousness (i.e., rooftops, parking lots, sidewalks, open-water stormwater management structures, and roads) should be included in the calculation for surface imperviousness. Failure to do so will result in an

underestimate of this project's likely post-construction environmental impacts. The calculation for surface imperviousness should be corrected and/or recalculated to reflect all the above-mentioned concerns.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its 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 increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Broadkill 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 Broadkill watershed, "target-rate-nutrient reductions" of 40 percent will be required for nitrogen and phosphorus. Additionally, "target-rate-reductions" of 75 percent will be required for bacteria.

TMDL Compliance through the PCS

As indicated above, TMDLs for nitrogen and phosphorus have been proposed for the Broadkill watershed. The TMDL calls for a 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 75 percent reduction in bacteria from baseline conditions. A Pollution Control Strategy (PCS) 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 BMPs such as increasing the amount of passive, wooded open space (planted with native woody and herbaceous vegetation), use of pervious paving materials to reduce surface imperviousness, connection to central sewer (if available), and the deployment of green-technology stormwater management treatment technologies. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Supply

The project information sheets state water will be provided to the project by Artesian Water Company via a public water system. 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 07-CPCN-18.

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.

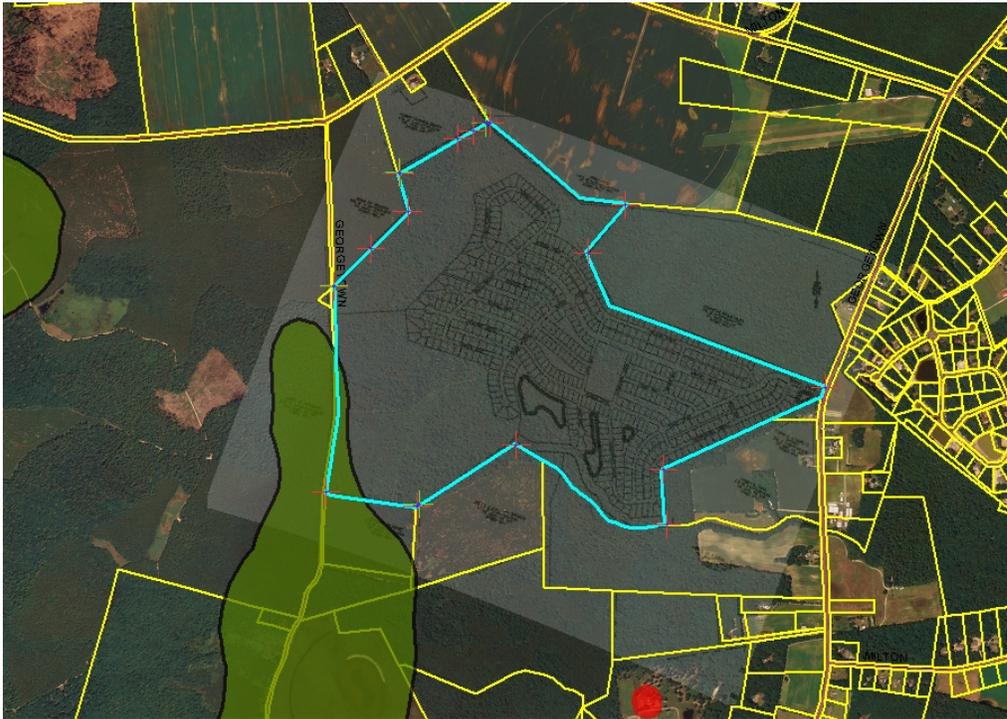
All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically 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.

Water Resource Protection Areas

The Water Supply Section, Ground Water Protection Branch (GWPB) has determined that the southwest corner of the parcel lies in an excellent recharge potential area (see following map and attached map). The site plan indicates that the portion of the parcel under development does not fall within any delineated wellhead protection area or an area of excellent groundwater recharge potential.

Map of Hidden Oaks (PLUS 2008-03-04) The site plan for the proposed development is superimposed on the parcel. The excellent ground-water recharge potential area is shown in green.



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. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. 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. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson at the Sussex Conservation District at (302) 856-2105 for details regarding submittal requirements and fees.

Because of the parcel's location in an impaired watershed and the amount of impervious surface, green technology BMPs and low impact development practices should be considered a priority to reduce stormwater flow and to meet water quality goals.

The Sediment and Stormwater Management Program ensures sediment and erosion control plans and stormwater plans comply with local land use ordinances and policies, including the siting of stormwater management facilities. However, we do not support placement in resource protection areas or the removal of trees for the sole purpose of placement of a stormwater management facility/practice.

Drainage

- 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 encourages the elevation of rear yards to direct water towards the streets and alleyways where storm drains and swales are accessible for maintenance. However, the Drainage Program recognizes the need for catch basins in yards in certain cases. Therefore, catch basins and swales placed in rear and side yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, pools, and kennels can hinder drainage patterns as well as future maintenance to the storm drain, catch basin, or swale. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.
- Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage easement on the deed, the second owner, and any subsequent owner of the property, will be fully aware of the drainage easement on their property.

Habitat: General Comments

1. The applicant did not answer Question #11 on the PLUS application which is ‘If this property has been the subject of a previous LUPA or PLUS review, please provide the name(s) and date(s) of those applications’. The answer should have included PLUS 2005-12-10 Redden Hunt, which was proposed for this same property and reviewed at the December 28, 2005 PLUS meeting.
2. The applicant answered ‘minimal’ to question #25, “What are the environmental impacts this project will have?” This project will fragment a 335 acre forest, clearing at least 208 acres outright (not to mention additional clearing by home

owners once they move in and need sheds, dog kennels, play areas, swimming pools, etc.). There is also a potential for wetland impacts. From a wildlife habitat perspective, these impacts are much more than ‘minimal’.

3. If the area of the project is 335.07 acres (question #9) and 208 acres of trees are going to be cleared to accommodate the project (question #25), how do you end up with 200 acres of open space for stormwater and wildlife habitat (question #31)? The applicant should explain this discrepancy or correct the figures on the application. In addition, an area that is forested and then cleared of trees should not be declared as wildlife habitat.

Site Visit Request

DNREC has not surveyed the project area; therefore, it is unknown if there are State-rare or federally listed plants, animals or natural communities that would be impacted by this project. In order to provide the applicant with information needed to properly assess and comment on this project, we respectfully request an opportunity to survey the project area. Please note that the DNREC scientists have extensive knowledge of the flora and fauna of the State and are the most qualified at utilizing our program’s comprehensive survey methods. Surveys are conducted at no cost or liability to the landowner/developer. Please contact Edna Stetzar, environmental review coordinator, at (302) 653-2883 ext. 101 to set up a site visit.

Rare Species

The following State-rare species occur in habitat on adjacent parcels and because the habitat is contiguous with the project area, there is a high potential that they occur within the project area as well:

- 1) *Melanerpes erythrocephalus* (Red-Headed Woodpecker), a State-Endangered bird
- 2) *Parula americana* (Northern Parula), a State-Endangered bird
- 3) *Wilsonia citrina* (Hooded Warbler), a State-Endangered bird
- 4) *Buteo lineatus* (Red-shouldered Hawk), a State-Rare bird
- 5) *Buteo platypterus* (Broad-winged Hawk), a State-Rare bird
- 6) *Coragyps atratus* (Black Vulture), a State-Rare bird
- 7) *Dendroica dominica* (Yellow-throated Warbler), a State-Rare bird
- 8) *Pseudotriton montanus* (mud salamander), a State-Rare amphibian

All of these bird species are dependent on forested habitat for breeding and are rare due to habitat loss and/or forest fragmentation. Preservation of large forest tracts is especially important for Yellow-throated and Hooded Warbler which are interior forest breeders and are affected by forest fragmentation. Also, Red-Headed Woodpecker is in danger of extirpation from Delaware if open mature forests (especially those with standing dead trees) are not preserved. The entire Delaware population of Broad-winged Hawk is

threatened by development and subsequent habitat loss, so management of the remaining forested habitat is important.

Mud salamander are considered extremely rare. This species typically inhabits muddy wetland areas adjacent to small streams and wooded swamps. Courtship and mating have not been observed, but probably occur late summer and fall. The eggs hatch in the winter and maturity is not reached for another two to four years. Efforts to preserve wetlands and a buffer zone around these wetlands is important for avoiding impacts to this species.

Forest Preservation

This parcel is part of one of the larger areas of contiguous forest in Delaware. This size of forest is not common in the rest of the State or on the Delmarva peninsula. Large contiguous areas of forest are important for migratory birds and numerous species of wildlife. When forested areas are fragmented by development, wildlife populations are separated, travel corridors are severed, there is an increased potential for road mortality and many species, particularly songbirds, are more vulnerable to predation.

Developments in wooded areas not only displace wildlife into surrounding areas, but also can create human/animal conflicts within the development. This can lead to an increase in animal damage complaints, including interactions on the roadways. Large scale forest loss will also put more pressure on nearby State Forests, Nature Preserves, Wildlife Areas and other protected lands.

Cumulative forest loss throughout the State is of utmost concern to the Division of Fish and Wildlife which is responsible for conserving and managing the State's wildlife (see www.fw.delaware.gov and the Delaware Code, Title 7). Because of an overall lack of forest protection, we have to rely on applicants and/or the entity that approves the project (i.e. counties and municipalities) to consider implementing measures that will aide in forest loss reduction.

Recommendations:

1. We recommend that the applicant consider preservation of this forest in lieu of development. We would gladly assist the landowner(s) in evaluating these parcels for wildlife habitat. This evaluation would be conducted at no cost or liability to the landowner/representative. There are incentive-based programs for wildlife management available to private landowners. Please contact Shelly Tovell at (302) 735-3600 for additional information.

Potential Hunting Issue

Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited

and the applicant should contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not a buffer between lot lines and the adjacent property line.

Nuisance Waterfowl

Wet ponds created for stormwater management purposes may attract resident Canada geese and mute swans that will create a nuisance for community residents. 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.

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, and geese problems can be minimized.

Recommendation:

DNREC recommends native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within an adequate buffer (15-30 feet in width) around the ponds, to be planted in accordance with the Sediment and Stormwater Plan approval agency requirements. When the view of the surrounding area from the pond is blocked, geese can't scan for predators and are less likely to reside and nest in the area of the pond. The vegetation also blocks the ability to easily move between land and water.

At this time, They do not recommend using monofilament grids due to the potential for birds and other wildlife to become entangled if the grids are not properly installed and maintained. In addition, the on-going maintenance (removing entangled trash, etc.) may become a burden to the homeowners association or land manager.

State Resource Areas/Natural Areas

This entire site is on Delaware's Natural Areas Inventory and is a State Resource Area. 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.

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.

That said, the Division of Parks and Recreation urges the applicant to consider permanent preservation opportunities through conservation easement or land donation.

Underground Storage Tanks

There are no LUST site(s) located near the proposed project. However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 46.2 tons (92,400.7 pounds) per year of VOC (volatile organic compounds), 38.3 tons (76,501.5 pounds) per year of NO_x (nitrogen oxides), 28.2 tons (56,444.2 pounds) per year of SO₂ (sulfur dioxide), 2.5 ton (5,024.5 pounds) per year of fine particulates and 3,864.6 tons (7,729,202.3 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 18.6 tons (37,269.4 pounds) per year of VOC (volatile organic compounds), 2.1 ton (4,100.8 pounds) per year of NO_x (nitrogen oxides), 1.7 ton (3,403.1 pounds) per year of SO₂ (sulfur dioxide), 2.2 ton (4,391.5 pounds) per year of fine particulates and 75.5 tons (151,081.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 7.4 tons (14,770.9 pounds) per year of NO_x (nitrogen oxides), 25.7 tons (51,377.1

pounds) per year of SO₂ (sulfur dioxide) and 786.8 tons (7,578,120.5 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	46.2	38.3	28.2	2.5	3864.6
Residential	18.6	2.1	1.7	2.2	75.5
Electrical Power		7.4	25.7		786.8
TOTAL	64.8	47.8	55.6	4.7	4726.9

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.5 tons of nitrogen oxides per year and 5.3 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 DNREC Energy Office 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):

This Agency has no objection to the re-zoning request. The information provided below shall be considered when plans are being designed.

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. Where the water distribution system is proposed for townhouse type dwellings it shall be capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 800 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 the main thoroughfares must be constructed so fire department apparatus may negotiate it. If a “center island” is placed at an entrance into the subdivision, it shall be arranged in such a manner that it will not adversely affect quick and unimpeded travel of fire apparatus into the subdivision.
- 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
- Townhouse 2-hr separation wall details shall be shown on site plans
- 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.statefiremarshal.delaware.gov, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Scott Blaier 739-4811

The Department is opposed to development in areas designated as Investment Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support isolated development of these areas. 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.

Section 1, Chapter 99, Code of Sussex Section 99-6 may apply to this subdivision. The applicant should verify the applicability of this provision with Sussex County. This Section of the Code states:

G. Agricultural Use Protections.

- (1) Normal agricultural uses and activities conducted in a lawful manner are preferred. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land uses adjacent to land used primarily for agricultural purposes shall be subject to the following restrictions:
 - (a) For any new subdivision development located in whole or in part within three hundred (300) feet of the boundary of land used primarily for agricultural purposes, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

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

- (b) For any new subdivision development located in whole or in part within fifty (50) feet of the boundary of land used primarily for agricultural purposes no improvement requiring and occupancy approval for a residential type use shall be constructed within fifty (50) feet of the boundary of land used primarily for agricultural purposes.

The Department would also remind the developer to comply with the County’s forested buffer requirement. This buffer is essential for separating inherently disparate land uses (agriculture and residential) and mitigating the conflict that often arises as a result.

The Department is especially concerned about the western boundary of the property, which borders along the Headquarters Tract of Redden State Forest. Although State Forests are public lands for public use, there are rules and regulations governing their use (especially with regard to hunting, all terrain vehicle/cycle (ATVs/ATCs) and motorcycle use, dumping, etc.). The use of ATVs is strictly prohibited on State Forest property. The Department asks that the developer please make residents aware of the Forest’s location, and place markers or signs along the State Forest property boundary as a permanent reminder. The Department also requests the developer make a copy of the rules and regulations

governing the use of State Forests available to all new residents at or before settlement. The rules can be found at:

<http://www.state.de.us/deptagri/forestry/forms/Final%20State%20Forest%20rules%20regulations%2003-2003.pdf>

There is also the consideration of forest fires with the development being located adjacent to such a large tract of State Forest. Proper tree maintenance, firebreaks and dwelling setbacks, proper and adequate insurance, etc. are also important issues to consider at this site.

Redden State Forest grows and harvests primarily loblolly pine. Pine timber must be thinned and burned periodically. The use of prescribed burning is an essential forestry practice that reduces the fuel on the forest floor. Smoke management associated with prescribed fires is always a concern to surrounding residents. If this large housing development is built adjacent to the forest, it will significantly complicate forest management and prescribed fire burns.

Without prescribed burns, leaf litter fuel will build up, and will eventually be consumed by a natural wildland fire. Fires of this nature usually burn hotter, produce more smoke, and are more difficult to bring under control. Wildland fires complicated by high winds can cast embers large distances. This scenario poses a serious concern for the safety of nearby residents and their property.

The encroachment of invasive species from urban areas into the forest is also inevitable as people landscape their yards. Bamboo, English Ivy, and Bradford pear are some of the more common species that establish along a forest's edge. Invasive species compete more aggressively for the same growing space, and often prevent native species from growing. Once established, invasive species are both difficult and costly to control, and will place an additional burden on the State Forest Service's already limited resources.

As with all state forests, Redden State Forest is managed for multiple uses. This includes hunting. The use of firearms for hunting, and harvesting of animals such as deer has the potential to create conflict with new residents. Often new residents living in developments such as these are unfamiliar with hunting, and are uncomfortable with discharge of firearms and the killing of animals. The Department requests that the developer make all new residents aware of these issues in advance, to avoid future complaints.

The Department also asks the developer to consider donating the triangular portion of unused land on the eastern side of the site to the State Forest Service. This portion of land is contiguous to existing Redden State Forest land, and would make a welcome addition to the State Forests. There may also be a worthwhile tax benefit for the developer/landowner for such a donation. As the land will become public land if donated, the development community can still enjoy the benefit of using the land, without the burden of their future Homeowner's Association or Maintenance Corporation being responsible for its maintenance, taxes, insurance, etc.

Although the Department opposes this development for the many reasons cited, if this project is approved by the County and built, we ask that you contact the Department to address the various issues raised in our comments (302) 698-4500.

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 Division of Public Health- Health Promotion Bureau- contact Michelle Eichinger (302) 744-1011

This proposed development is in a Level 4 area. Developing in such an area is inconsistent with the *Strategies for State Policies and Spending*. DPH is committed to the *Strategies* and therefore, does not support development in the proposed area.

DPH supports new development in and around existing towns and municipalities where compact and mixed land use patterns facilitate physical activity.

Delaware State Housing Authority – Contact Vicki Powers 739-4263

This proposal is for a rezoning of 335 acres from AR-1 to R-1 for a 602 lot residential subdivision located near Georgetown. 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 735-4055

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 projects located in level 4.

This proposed development is within the Cape Henlopen School District boundaries. 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 301 students.
2. DOE records indicate that the Cape Henlopen School Districts' *elementary schools are very close to 100% of current capacity* based on September 30, 2007 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, 2007 secondary enrollment.
4. While the Cape Henlopen School District secondary and elementary schools are not currently beyond capacity, *the district does NOT* have adequate student capacity to accommodate the additional students likely to be generated from this development given the number of planned and recorded residential sub divisions within district boundaries.
5. Continued development will cause significant burden to the Cape Henlopen School District without the provision for additional educational infrastructure.

Sussex County – Contact: Richard Kautz 855-7878

Ordinance # 1822 requires that cluster projects in the Low Density Area of the County according to the current County Plan first reduce the gross acreage by 25% before calculating the total number of units allowed. Therefore, the total number of units allowed would be 502 (335 x 75% x 2).

The Sussex County Engineer Comments:

The project proposes to develop using a private central community wastewater system. We recommend that the wastewater system be operated under a long-term contract with a capable wastewater utility. In addition, we recommend they have a wastewater utility provider prior to approving the project. The proposed project is located outside of the Environment Sensitive Developing Area where Sussex County expects to provide sewer service. Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A review and approval of the treatment and disposal system by the Sussex County Engineering Department is also required and plan review fees may apply. Disposal fields should not be counted as open space. Wastewater disposal fields should be clearly identified on recorded plots and separated from lot area.

If Sussex County ever provides sewer service and the project has a CPCN, it is recommended that the treatment system be abandoned and a direct connection made to the County system at the developer's and/or owners expense. If Sussex County ever provides sewer service and the project does not have a CPCN, it is required that the treatment system be abandoned and a direct connection made to the County system at the developers and/or owners expense.

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,

A handwritten signature in cursive script that reads "Constance C. Holland".

Constance C. Holland, AICP
Director

CC: Sussex County