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

January 18, 2006

Mr. John Murray
Kercher Engineering, Inc.
413 East Market Street
Georgetown, DE 19947

RE: PLUS review – PLUS 2005-12-10; Redden Hunt

Dear Mr. Murray:

Thank you for meeting with State agency planners on December 28, 2005 to discuss the proposed plans for the Redden Hunt project to be located on the west side of SCR 319 east of SCR 243.

According to the information received, you are seeking a site plan approval for 519 residential subdivision on 334.9 acres in the Level 4 area.

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

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

Office of State Planning Coordination – Contact: Ann Marie Townshend 739-3090

This project represents a major land development that will result in 519 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in relevant municipal and county certified comprehensive plans. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved. Particularly in this area, within a State Resource Area and adjacent to Redden State Forest, this development proposal poses a threat to existing and future preservation efforts in this area.

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 nearly 1,300 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.

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

This project has the potential to affect historic properties as evidenced by the road traces still visible from the aerial photographs of the project site. Additionally historic maps indicate the presence over time of five houses and a school house clustered along these road traces. Should burials be encountered, marked and unmarked human remains, are protected by Delaware law. Please refer to the following sections of the Delaware State Code: (1) Title 11 Sub-Chapter 1340, titled "Desecration of Burial Places"; and (2) Title 7 Chapter 54, known as the "Delaware Unmarked Human Remains Act". For more

information about these laws and the implications for the project, contact Craig Lukesic or Faye Stocum of this office at 302-736-7400. The Division provides a list of qualified consultants on our web site at http://www.state.de.us/shpo/PDF/Consultants.pdf.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

Mr. W. James Bosch seeks to develop a 519-lot residential subdivision on an approximately 334.9-acre parcel (Tax Parcel 1-35-7-2). The parcel is located north of Georgetown, on the east side of Downs Road (Sussex Road 243) and the west side of Sand Hill Road (Sussex Road 319). Access would be limited to a single point on Sand Hill Road. The land is zoned AR-1 and the development would be done under the County's cluster development option.

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies for State Policies and Spending* have deemed the type of development being proposed inappropriate for this area. 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.

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. 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: potential impacts to all three layers of green infrastructure (natural resource and recreation priorities, cropland and working forestland), the loss/fragmentation of 205 out of 335 acres of forest, the project's proximity to Redden State Forest, potential impacts to rare species, project's location in an excellent recharge area, project's location in a State Resource Area and proposed for the Natural Areas Inventory, and an excessive number of stormwater management ponds. 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 Klej-Galloway complex, Klej, Mullica, and Mullica-Berryland complex were mapped on subject parcel. Klej-Galloway complex is a is a moderately well-drained to somewhat poorly drained soil that contains both upland and transitional wetland/upland soil components – limitations for development are considered moderate to somewhat severe. Klej is a somewhat poorly-drained transitional soil that is likely to contain both upland and wetland soil (hydric) components, Mullica and Mullica-Berryland complex are very poorly-drained wetland associated (hydric) soil that have the highest severity level for development.

It should also be noted that a majority of the soils on this parcel are likely to have a seasonal high water table within one-foot of the soil surface. Building in such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding – especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or "nor'easters." This is in addition to increased flooding likely from

surface water runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks).

Wetlands

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

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

Because there is strong evidence that federally regulated wetlands exist on site, a wetland field delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified Corps of Engineers through the Jurisdictional Determination process. 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.

Impervious Cover

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. Based on analyses of 2002 aerial photography by the University of Delaware, the Broadkill River watershed, at that time, had about 7.9 percent impervious cover. Although this data is almost 4 years old and likely an underestimate, it illustrates the importance of a proactive strategy to mitigate for predictable and cumulative environmental impacts. Since the amount of imperviousness generated by this project (reported as 15%, but likely to be much higher) will significantly exceed the desirable watershed threshold of 10 percent, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an significant efforts to protect more of the existing forest cover – are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

TMDLs

Although Total Maximum Daily Loads (TMDLs) have not yet been developed for the Broadkill watershed to date, work is currently progressing on their development and they should be available in the near future. Therefore, until the specified TMDL reductions and pollution control strategies are adopted, it shall be incumbent upon the developer to employ best available technologies (BATS) and/or best management practices (BMPs) as "methodological mitigative strategies" to reduce degradative impacts associated with development.

Water Resource Protection Areas

The DNREC Water Supply Section has reviewed the above referenced PLUS project and determined that it does fall partially within an excellent recharge area (see the following map and attached map). Excellent recharge areas near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas.

The DNREC Water Supply Section recommends that the portion of the new development within the wellhead protection area not exceed 50% 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. Based upon the site plan provided in the PLUS application, the section of the

parcel that is in the excellent recharge area *will not be affected* by the proposed development.

The change in impervious cover is from 0% to approximately 15%. This figure was provided by the developer. The impervious cover is not in the area of excellent recharge. As impervious cover increases, the ability of the surficial aquifer to recharge is limited. It is recommended that steps be taken to move open space area in the development from the small northern tip to the area that impacts the excellent recharge area to decrease the percentage of impervious cover.

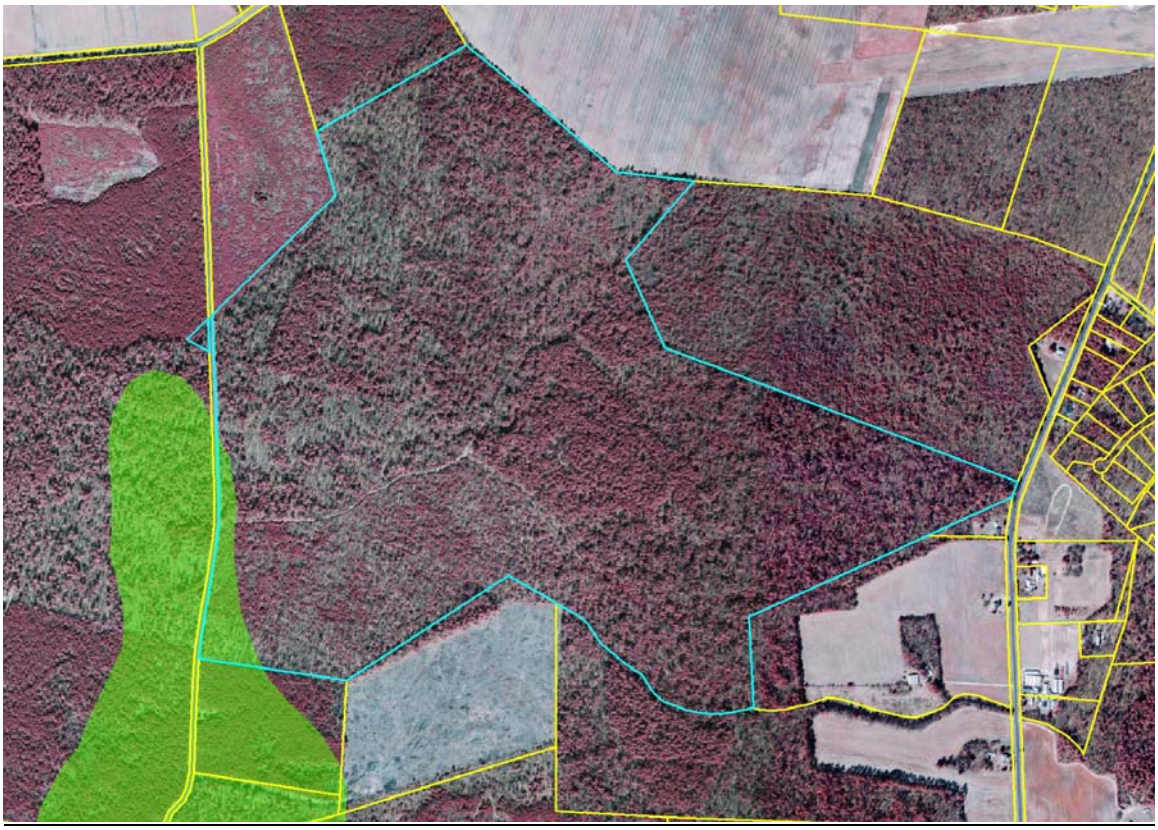
An on-site public well is proposed to supply the new development. Steps should be taken to locate the well as close to the central section of the development to limit the impact a delineated wellhead protection area will have on adjacent property owners. More information can be obtained regarding this recommendation by referring to the below referenced Source Protection Guidance Manual for the Local Governments of Delaware.

DNREC Water Supply applauds the efforts made to not impact the excellent recharge area for this proposed development. They encourage the developer to continue with the plan as proposed and seek additional information as needed.

For more information refer to the Final: Source Water Protection Guidance Manual for the Local Governments of Delaware:
http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_final.pdf

and Ground-Water Recharge Design Methodology:
http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_supp_1_final.pdf

Map of Redden Hunt PLUS 2005-12-10, with excellent recharge in green with affected parcels outlined in light blue



Water Supply

The project information sheets state that water will be provided to the project by an on-site community well. DNREC records indicate that the project site is not located in an area where public water service is available. Any public water utility providing water to the site must obtain a certificate of public convenience and necessity (CPCN) from the Public Service Commission. Since an on-site public well will 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.

Sediment and Erosion Control/Stormwater Management

Standard Comments:

1. 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 Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.

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

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

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. All ponds are required to be constructed per pond code 378.

Design Specific Comments:

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

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

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

4. 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.

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

6. Please demonstrate to the District that this project has an adequate outfall. You will be required to analyze the outfall ditch as ½ full for the quality and 2-year storm and full for the 10- and 100-year storm events or provide a down stream analysis.

7. Provide assurance that this is not located within a tax ditch watershed.

8. District will require a minimum 15-foot setback from the ponds top of bank to the property line.

9. District recommends preserving as many trees as possible. The District is concerned with the number of stormwater facilities and aesthetic ponds proposed for the site. This may potentially create an unnecessary maintenance burden to the home owners association. Please consider limiting the number of ponds on the site to those only necessary for stormwater management and preserve as much woodland as possible.

Stormwater Management Ponds

There are an excessive number of stormwater management ponds on the site plan, the creation of which will result in acres of tree removal. Because trees function in flood abatement and erosion control they should not be removed to create ponds that are unnecessary. Creation of stormwater management ponds to make lots more valuable should be an unacceptable practice in forested areas.

Also, the ponds will likely 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 proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Forest Preservation

Claims on the application of 59.65 acres of permanently protected forest should be re-evaluated. Most of 'preserved' forest is in small, fragmented areas around stormwater management ponds. For many wildlife species that depend on larger forest blocks for habitat and breeding, this is not an example of habitat preserved but rather habitat eliminated. Forest fragmentation also separates wildlife populations, increases road mortality, and increases "edge effects" that leave many forest dwelling species, particularly songbirds, vulnerable to predation.

In order for the 59.65 acres to be truly preserved and functional for most wildlife species that depend on larger tracts of forest, it should be set aside as a large, connected, continuous block with no lots lines or infrastructure. We would gladly assist the landowner(s) in evaluating these parcels for wildlife habitat. Many new incentive-based programs for wildlife management are available to private landowners through our agency.

Open Space

With what little forest is left, the developer is encouraged to designate open space along the forest edges. Doing so will reduce the edge for unwanted invasive species like autumn olive, multiflora rose, and oriental bittersweet.

In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

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

Site Visit Request

Based on review of topographic maps, aerial photographs, and because they have not visited the site previously, the Delaware Natural Heritage Program staff requests the opportunity to survey the forested resources which could potentially be impacted by the project. Their observations would allow us to make more informed comments on this project and would allow the applicant the opportunity to reduce potential impacts to rare

species. Please contact Robert Cox, Bill McAvoy, or Kitt Heckscher at (302) 653-2880 to set up a site visit.

Rare Species

The Delaware Natural Heritage Program has not surveyed this parcel, however, the following state-rare species occur on adjacent parcels and there is a high potential that they occur at the project site as well:

Dendroica dominica (Yellow-throated Warbler),Wilsonia citrina (Hooded Warbler), Buteo lineatus (Red-Shouldered Hawk), Buteo platypterus (Broad-winged Hawk), Coragyps atratus (Black Vulture), Melanerpes erthrocephalus (Red-Headed Woodpecker), Parula americana (Northern Parula), Pseudotriton montanus (Mud Salamander).

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. Although forest preservation is strongly recommended, if trees are to be cleared, clearing should not occur mid-April to August 31st to avoid nest destruction and impacts to the breeding populations of these species.

Mud salamanders 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 are important for avoiding impacts to this species.

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.

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.

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 any construction specifications would be 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 39.8 tons (79,661.1 pounds) per year of VOC (volatile organic compounds), 33.0 tons (65,954.0 pounds) per year of NOx (nitrogen oxides), 24.3 tons (48,662.1 pounds) per year of SO2 (sulfur dioxide), 2.2 ton (4,331.8 pounds) per year of fine particulates and 3,331.8 tons (6,663,548.2 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 NOx; 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 NOx 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 16.1 tons (32,130.9 pounds) per year of VOC (volatile organic compounds), 1.8 ton (3,535.4 pounds) per year of NOx (nitrogen oxides), 1.5 ton (2,933.9 pounds) per year of SO2 (sulfur dioxide), 1.9 ton (3,786.0 pounds) per year of fine particulates and 65.1 tons (130,251.6 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 6.4 tons (12,734.4 pounds) per year of NOx (nitrogen oxides), 22.1 tons (44,293.5 pounds) per year of SO2 (sulfur dioxide) and 3,266.6 tons (6,533,296.6 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	39.8	33.0	24.3	2.2	3331.8
Residential	16.1	1.8	1.5	1.9	65.1
Electrical Power		6.4	22.1		3266.6
TOTAL	55.9	41.2	47.9	4.1	6663.5

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 6.4 tons of nitrogen oxides per year and 22.1 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. We highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

We 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

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

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

c. **Gas Piping and System Information:**
- Provide type of fuel proposed, and show locations of bulk containers on plan.

d. **Required Notes**:

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

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

Department of Agriculture - Contact: Milton Melendez 698-4500

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

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation. This site is also a designated as a "Good Recharge" area, meaning that the area has valuable ground water recharge qualities. In addition, this site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Cropland layer

specifically overlaps this site; this designation identifies areas that highly suitable for agricultural production.

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. This site is a part of a "good recharge" area. DNREC has mapped all ground water potential recharge areas. A "good" rating is the second highest rating and designates an area as having important groundwater recharge qualities. Maintaining pervious cover in "Excellent" and "Good" recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure 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 Delaware Forest Service supports the comments prepared by the Department of Agriculture, Planning Section and considers this development to be a catalyst development that would directly impact Redden State Forest near Georgetown; further limiting the Forest Service ability to manage these resources for the betterment of the state. The Forest Service encourages the developer to work with their offices to develop other alternatives for this project. Finally, if it is the choice of the developer to continue to develop this site for residential uses the Delaware Forest Service will recommend the following activities for this site under the Sussex County Cluster Development Ordinance:

- The community should be designed as a "No Net Loss Community". This design requires the developer to replace all trees at a 1:1 replacement level with 40% of those trees replaced being of a caliper size greater then 2 inches. If the developer is unable to achieve this on this site then the developer should work with the Redden State Forest or adjacent communities to fulfill the planting requirement.

- The developer should design and implement a tree preservation program to minimize disturbance to the site. The Forest Service shall develop by a certified arborist or licensed forester and subject to the review this plan.

- The developer should design a community open space that is reflective of the land use activities for this site and the deed restriction shall reflect these activities. For

example; this site is an excellent area for forestry practices, the open space area should be design and used to support forestry activities within the region.

- The developer should be required to implement the maximum buffer requirements as defined by state and municipal ordinances to minimize impacts to operating forest lands adjacent to the community.

Public Service Commission - Contact: Andrea Maucher 739-4247

The project is not within a certificated service territory for any water provider. Should water services be desired, the utility would need to apply to the Commission for a CPCN.

The project is not within a certificated service territory for any wastewater provider. Should wastewater services be desired, the utility may need to apply to the Commission for a CPCN.

Delaware State Housing Authority – Contact Jimmy Atkins 739-4263

The proposal is to develop 519 units on 334 acres located between Sand Hill Road (319) and Downs Road (243), south of Redden Road, west of Milton and adjacent to the Redden State Forest. 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.

Sussex County – Contact Rick Kautz 855-7878

The project proposes to develop using a private central community wastewater system. Sussex County Engineering recommends 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 Inland Bays Planning 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

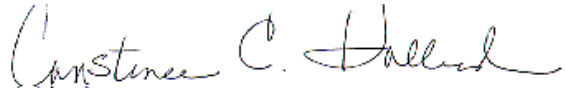
fields should not be counted as open space. Wastewater disposal fields should be clearly identified on recorded plots**.**

If Sussex County ever 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 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,

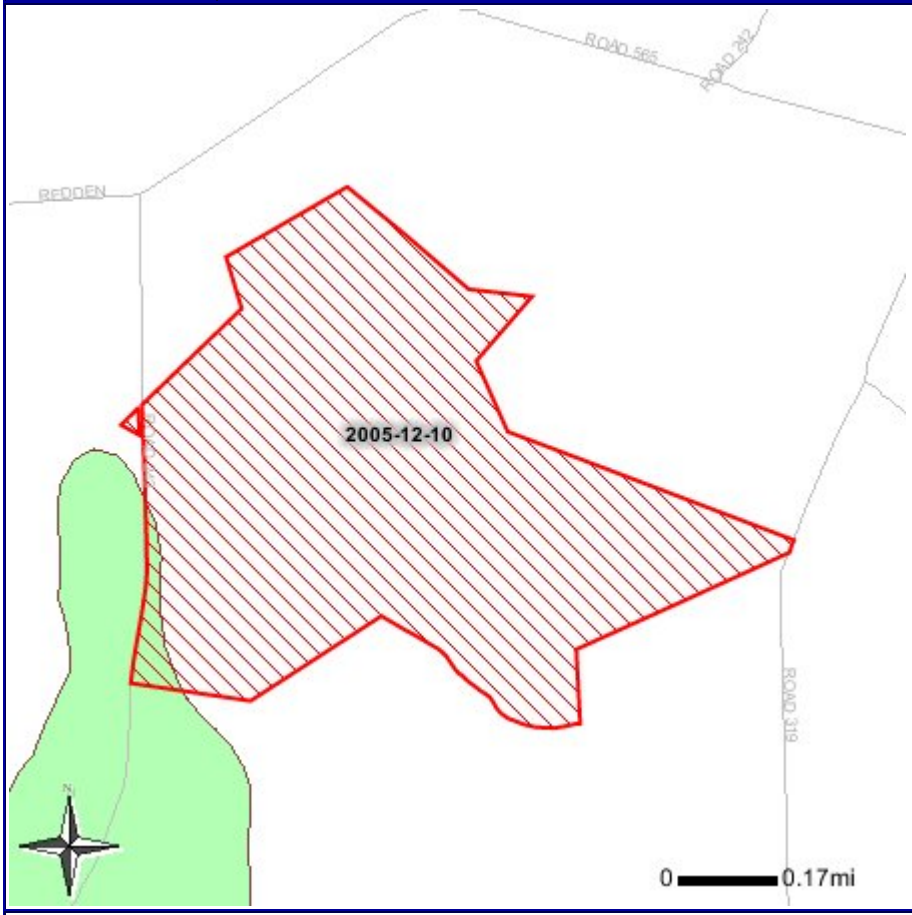


Constance C. Holland, AICP
Director

CC: Sussex County

Redden Hunt

2005-12-10



PLUS Projects

All Roads

Excellent Recharge Areas

This map was produced by the Delaware
Department of Natural Resources and Environmental Control.