



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

May 31, 2006

Zachary Crouch  
Davis, Bowen, & Friedel, Inc.  
23 North Walnut Street  
Milford, DE 19963

RE: PLUS review – PLUS 2006-04-04; Winterberry Woods

Dear Mr. Crouch:

Thank you for meeting with State agency planners on May 3, 2006 to discuss the proposed plans for the Winterberry Woods project to be located at Almshouse and Thicket Roads.

According to the information received, you are seeking site plan approval for 165 residential units on 166.28 acres. This proposal is located in Investment Level 4 according to the Strategies for State Policies and Spending, and is outside the growth zone according to the Kent County Comprehensive Plan. **The comments in this letter are technical, and are not intended to suggest that the State supports this development proposal. This letter does not in any way suggest or imply that you may receive or may be entitled to permits or other approvals necessary to construct the development you indicate or any subdivision thereof on these lands.**

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will

also need to comply with any Federal, State and local regulations regarding this property. We also note that as Kent 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: David Edgell 739-3090**

This project represents a major land development that will result in 162 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside the growth zone according to Kent County's 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. 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 423 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 percent of school transportation and paratransit services, up to 80% of school construction costs, and the cost of police protection in the unincorporated portion of Kent 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.

The developer has confirmed that public wastewater disposal is proposed to be provided by the Camden – Wyoming Sewer and Water Authority. We are opposed to this subdivision due to its location in a designated rural area, but even more troubled by the potential consequences of providing utility services to this remote land development.

There is a well known correlation between the extension of physical infrastructure such as public sewer and land development activity. We are concerned that the developer and

the Camden and Wyoming Sewer and Water Authority will be creating a de-facto growth zone in a Level 4 area with any sewer extension. All properties within a reasonable distance from this new infrastructure will be more likely to convert to suburban uses because of the availability of the sewer service, in spite of the fact that State and County plans intend this to remain a predominantly rural area. At this time the Office of State Planning Coordination would like to note our opposition to any extension of public sewer in this Level 4 area. Public sewer represents physical infrastructure that is appropriate inside growth zones, in Investment Levels 1, 2 and 3. These are areas where both the local and state governments intend to provide the necessary utilities and services to support suburban, urban and other types of land development and population growth.

**We strongly encourage the applicants, the Camden and Wyoming Sewer and Water Authority, and the County to delay any decision on extending public sewer to this site until the County has completed their updated comprehensive plan (due by March 2007).** It is imperative that the decision to install physical infrastructure in a rural area be made in the context of a comprehensive planning process. Local citizens, elected leaders, service providers and state agencies all must be engaged in any decision of this magnitude.

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

We are not in favor of this development in Level 4, because it will lead to a further loss of the historic agricultural landscape and to the destruction of historic properties, as well as adverse visual and noise effects on adjacent historic properties.

The Lewis Homestead (K-821; noted as the Mansion Farm on Beers Atlas of 1868) once stood in the middle of this parcel, but has been demolished. There may be archaeological resources associated with this house. The Milbourne Webb, Sr., House (K-830) is located across Thicket Rd. from this parcel, and a late 19<sup>th</sup>- to early 20<sup>th</sup>-century house (K-3675) is located across Almshouse Rd on the northeast corner of this parcel. There are areas of high potential for prehistoric archaeological sites within the parcel.

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

If this development proceeds, we would appreciate the opportunity to look for archaeological sites and learn something about their location, nature, and extent prior to any ground-disturbing activities. We request that the developer provide sufficient landscaping to block the view and noise of this development from the adjacent historic properties.

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

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. 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 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 two of the three layers of green infrastructure (cropland and forest land), the loss/fragmentation of 6 out of 28 acres of forest, existing drainage concerns, a significant increase in the amount of impervious cover, the project's location in an excellent recharge area, and potential impacts to rare species. 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.

### **Design Recommendation**

Efforts should be made to conserve the forest, therefore, lots 20-25 should be removed in their entirety from the forested area. This would include re-routing the road to those properties and removing Jean Drive. Selective tree removal should occur around lots 45-51.

## **Soils**

Based on the Kent County soil survey Sassafras, Woodstown, Fallsington, and Pocomoke were mapped in the immediate vicinity of the proposed project. Sassafras is a well-drained upland soil that, generally, has few limitations for development. Woodstown is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Fallsington is a poorly-drained wetland associated (hydric) soil that has severe limitations for development. Pocomoke is very poorly-drained wetland associated (hydric) soil that has the highest severity level for development.

It should also be noted that hydric soils are likely to have a seasonal high water table within a depth of one-foot from the soil surface. Since a significant portion of the soils on this parcel are mapped as hydric (at least 40% of the soils mapped on parcel), this and adjoining properties are susceptible to future flooding problems from groundwater-driven surface water ponding; this issue is of particular concern during periods of high-intensity long-duration rainfall events associated with tropical storms/hurricanes or "nor'easters." Flooding probabilities may be further augmented by surface water runoff emanating from created forms of structural imperviousness (roof tops, roads, and sidewalks). Further evidence that flooding probabilities may be a real threat to future residents is further substantiated by the presence of extensive ditching in the southeastern and northwestern portion of the parcel. Therefore, it is strongly recommended that the applicant avoid all hydric soil mapping units, and maintain a 100-foot upland buffer between all water bodies/wetlands (including ditches) and designated lot lines.

## **Wetlands**

Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested wetlands were mapped over most of the far western portion of this parcel. Although no wetlands were mapped in the eastern one-third and northwest portions of the parcel, the presence of hydric soils (i.e., Kent County soil survey), and the presence of extensive ditching (2002 aerial photography) offers evidence that riparian and/or farmed wetlands are much more extensive than the wetland mapping suggests.

These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Although the developer maintains a 100-foot buffer from Spring Branch, an additional 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.

As mentioned previously, much of the eastern and northwestern portion is extensively ditched, indicating that much of this area is likely to contain a significant acreage of potentially unmapped farmed wetlands. Therefore, it is recommended that the Farm Services Agency of the USDA be contacted to assess whether the farmed wetlands on subject parcel meet the recognized criteria for classification as “prior converted wetlands.” Prior converted wetlands are farmed wetlands that have drained or altered before December 23, 1985, and no longer meet the wetland criteria established under the 404 program. Such wetlands are considered exempt from regulatory protection provided that there is no proof of a continuous “fallow period” of five years or greater in that parcel’s cropping history. Parcels converted after said date regardless of cropping history are considered jurisdictional by the Army Corps of Engineers (ACOE). The contact person for assessing a parcel’s cropping history is Sally Griffin at the USDA; she can be reached at 678-4182.

This project is located directly adjacent to sensitive headwater or near headwater riparian wetlands associated with the Allabands Mill Stream of the of the St. Jones watershed, greatly increasing the probability of harmful impacts to surface and groundwater quality of all waters within the greater Delaware Basin, and making it more difficult for the State to achieve future required TMDL nutrient reductions. Headwater streams and their associated wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system downstream. Therefore, in recognition of this concern, the Watershed Assessment Section strongly recommends the applicant consider expanding the existing forested buffer with native woody or herbaceous vegetation to a minimum 100-foot width (assuming a remnant buffer exists).

### **Wetland Permitting Information**

During the PLUS meeting there was a discussion regarding the proposed piping of a watercourse that appears to be an agricultural ditch on the plan. The applicants indicated that the appropriate agencies had been contacted and given approvals to pipe the ditch / stream. DNREC representatives questioned the viability of piping the ditch and cautioned about the potential presence of jurisdictional wetlands and whether or not this watercourse would be considered a blue line stream. Since the PLUS meeting, the following information about this issue has been verified:

- Correspondence between ERI and DNREC (attached) indicates that the State has no jurisdiction regarding wetlands associated with the disputed USGS blue line stream (Allabands Mill Stream)/agricultural drainage ditch.

- DNREC spoke with Kevin Faust, US Army Corps of Engineers, Dover office, on May 17, 2006. He was unfamiliar with the project and recommended that the applicant submit the wetlands delineation for a Jurisdictional Determination.
- As to the proposed placement of a pipe in the disputed blue line stream/agricultural drainage ditch as part of the stormwater management/ drainage plan, it is strongly recommended that the applicant meet with the Kent Conservation District to assess the feasibility of piping the ditch. No approvals to pipe the ditch have been given at this time.

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

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

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

### **Wetland Buffers**

According to the site plan there are only going to be 25-foot wetland buffers. Although this may be all that is required by the county, buffers less than 100 feet are inadequate for protecting the function and integrity of wetland habitats. In order to preserve water quality, there should be at least a 100-foot buffer between the edge of the wetlands and lots or infrastructure. This buffer zone should be placed in permanent conservation to reduce the potential for future clearing.

In addition, there is a stormwater management pond in the southwestern section of the site plan that is too close to wetlands. There should be at least a 100-foot buffer between wetlands and any lots, roadways, or stormwater management ponds.

## **Impervious Cover**

The applicant should be reminded that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation; otherwise, an inaccurate assessment of this project's actual environmental impacts will be made. Based on the scope and density of this project, surface imperviousness is likely to be significantly higher than the figure (26%) reported by the applicant. It is strongly recommended that the applicant recalculate surface imperviousness to account for all created forms of post-development surface imperviousness.

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 St. Jones watershed had about 16.2 percent impervious cover. Although this data is about 4 years old and likely an underestimate, it underscores the importance of a proactive strategy to mitigate for predictable and likely cumulative environmental impacts. Since the amount of imperviousness generated by this project is likely to be much higher than 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 increase in forest cover preservation or additional tree plantings are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

## **TMDLs**

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the St. Jones 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. Based on advance notice from in-house nutrient modeling experts (though not yet given official sanction), a 40 percent reduction in both nitrogen and phosphorus must be realized in the St. Jones watershed.

## **TMDL Compliance through the PCS**

The proposed Pollution Control Strategy requires the completion of a nutrient budget to estimate nutrient load changes following development; documentation of these load

changes will be assessed through a nutrient budget protocol. The nutrient budget protocol is a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. The post-development loading rate is then compared with the pre-development loading rate to assess whether the project meets the prescribed TMDL nutrient load reductions. A preliminary evaluation of this project (using the applicant's assumptions as reported in the PLUS application), this project as currently conceived **will not** meet the expected St. Jones watershed TMDL reduction requirements for nitrogen. An estimate of this project's ability to meet the post-development phosphorus loading rate was not assessed at this time because some of the model assumptions (i.e., phosphorus loading rates from various land uses and land-use conversions) have not undergone the full review process necessary to ensure their technical validity. Consequently, phosphorus runoff impacts should not be assumed until this issue is resolved.

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

### **Water Resource Protection Areas**

The Water Supply Section has determined that the project falls partially within an excellent ground-water recharge area (see attached map). Excellent Ground-Water Recharge Areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. As such, these soils are able to transmit water very quickly from the land surface to the water

table. Consequently, ground water in these areas may very readily be adversely affected by land use activities or impervious cover.

The Water Supply Section recommends that the portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover. Some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area. However, the development should not exceed 50% regardless. A water balance calculation will be necessary to determine the quantity of clean water to be recharged via a recharge basin. 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.

Ideally, relocating any open space areas to the part of the parcel within the excellent ground-water recharge area would decrease the total impervious area. Augmenting the groundwater recharge with clean rooftop run-off systems are another alternative to maintaining the quality and quantity of water recharging the aquifer.

In addition, because the excellent ground water recharge area can so quickly affect the underlying aquifer if contaminants are spilled or discharged across the area, the storage of hazardous substances or wastes should not be allowed within the area unless specific approval is obtained from the relevant state, federal, or local program.

For more information refer to the Final Source Water Protection Guidance Manual for the Local Governments of Delaware

<http://www.wr.udel.edu/swaphome/phase2/SWPguidancemanual.html>

and

Ground-Water Recharge Design Methodology

[http://www.wr.udel.edu/swaphome/phase2/Publications/swapp\\_manual\\_final/swapp\\_guidance\\_manual\\_supp\\_1\\_2005\\_05\\_02.pdf](http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf).

## **Water Supply**

The information provided indicates that Camden-Wyoming Sewer and Water Authority will provide water to the proposed projects through a central public water system. Our files reflect that Camden-Wyoming Sewer and Water Authority does not currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and

applications can be obtained by contacting the Public Service Commission at 302-739-4247. Should an on-site public well be needed, it must be located at least 150 feet from the outermost boundaries of the project. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

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

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

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

### **Sediment and Erosion Control/Stormwater Management**

1. Land disturbing activities in excess of 5,000 square feet are regulated under the Delaware Sediment and Stormwater Regulations. A detailed sediment and stormwater management plan must be reviewed and approved by the Kent Conservation District prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place. The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to the Kent Conservation District. Construction inspection fees based on developed area and stormwater facility maintenance inspection fees based on the number of stormwater facilities are due prior to the start of construction. Please refer to the fee schedule for those amounts.
2. The following notes must appear on the record plan:
  - The Kent Conservation District reserves the right to enter private property for purposes of periodic site inspection.
  - The Kent Conservation District reserves the right to add, modify, or delete any erosion or sediment control measure, as it deems necessary.

- A clear statement of defined maintenance responsibility for stormwater management facilities must be provided on the Record Plan.
3. Ease of maintenance must be considered as a site design component and a maintenance set aside area for disposal of sediments removed from the basins during the course of regular maintenance must be shown on the Record Plan for the subdivision.
  4. All drainage ways and storm drains should be contained within drainage easements and clearly shown on the plan to be recorded by Kent County.
  5. A soils investigation supporting the stormwater management facility design is required to determine impacts of the seasonal high groundwater level and soils for any basin design.

Comments:

1. It appears from the preliminary plans that an infiltration pond is being proposed around the center of the site. Infiltration is the least desirable practice. The engineer is encouraged to look at other practices before submitting plans.
2. The soils map shows a pocket of Pocomoke soil; this may indicate poorly drained areas in the site.
3. The designer is encouraged to consider the conservation design approach and limit the amount of tree clearing required for the development of the site, including the stormwater management facilities shown in the wooded areas.
4. Access to the proposed stormwater facility must be provided for periodic maintenance. This access should be at least 12 feet wide to leading to the facility and around the facility's perimeter.
5. It is recommended that the stormwater management areas be incorporated into the overall landscape plan to enhance water quality and to make the stormwater facility an attractive community amenity.
6. A letter of no objection to re-recording will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.
7. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.

8. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.

## **Drainage**

### Design recommendations:

- There are existing drainage concerns downstream, north of this project. These existing drainage concerns will not be resolved before the spring of 2007. The Drainage Program requests the engineer take precautions to ensure the project does not create any off site drainage problems downstream by the release of on site storm water. Please notify downstream landowners if there will be a change in the volume of water released on them.
- The Drainage Program requests a 15-foot side yard setback on lots where storm drains and catch basins are on private property to ensure adequate room for future maintenance of the storm drain system. The side yard setback would only increase on the side with the storm drain.
- A portion of this project is located within the Willow Grove Tax Ditch. Please contact the Kent Conservation District and the Willow Grove Tax Ditch concerning established tax ditch right-of-way.
- All drainage easements should be recorded on deeds.
- The Drainage Program encourages the elevation of rear yards to direct water towards the streets where storm drains are accessible for maintenance. The Drainage Program recognizes the need for catch basins in rear yards in certain cases. Catch basins placed in rear yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, and kennels should not be placed along the storm drain or near the catch basin. Deed restrictions or easements recorded on the deed, should be placed on the property to ensure maintenance access.

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 downstream ditches and pipes for function and blockages prior to construction.

This subdivision has the unique distinction of releasing stormwater into both the Delaware Bay and the Chesapeake Bay. For the further enhancement of water quality in the both watersheds, the Drainage Program encourages additional water quality measures on this project to filter excess nutrients in stormwater runoff from this site before releasing stormwater into Allabands Mill Stream and the Willow Grove Tax Ditch.

### **Open Space**

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested areas. Doing so will preserve and expand the existing buffers on site and its value for birds and wildlife and it will create recreational opportunities for residents.

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.

### **Forest Preservation**

The site plan does not address our concerns or comments that were made via PLUS 2005-12-07. There should be a larger area of forest left as open space for wildlife and for use by residents. This could be accomplished by reducing the number of lots and infrastructure so that this development has a smaller footprint. We recommend that lot #s 19-24 and 66-73 be removed from the site plan.

When forested areas are developed, resident wildlife are forced to disperse into surrounding areas in search of adequate habitat. Often, there is inadequate area to support the species that are displaced and this can lead to human/animal conflicts including interactions on the roadways. In addition, forest fragmentation separates wildlife populations and increases “edge effects” that leave many forest dwelling species vulnerable to predation and allows the infiltration of invasive species. This displacement also puts pressure on nearby Wildlife Areas and other preserved lands.

### **Rare Species**

We have not surveyed this parcel; however, Barred Owl (*Strix varia*) occurs on an adjacent parcel and may occur within the project area as well. This rare bird requires mature deciduous or mixed palustrine forested wetlands, such as those on the site. Breeding occurs January 15th to August 31st and this species is of special concern in Delaware. In addition, rough green snake (*Opheodrys aestivus*) occurs both north and west of the project site and may occur within the project area as well. This rare reptile inhabits deciduous and mixed forests especially those with ponds, streams, or wetlands. Egg laying and hatching of young occurs late May to early October. If surveys are not conducted to determine presence of these species, tree clearing could cause direct impacts and should not occur during the breeding seasons (January 15th to October 15th).

### **Site Visit Request**

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

### **Plant Rescue**

Because there is forest loss and wetland impacts associated with this project, we recommend that the developer/landowner contact the Delaware Native Plant Society to initiate a plant rescue. Selected plants from the site of disturbance will be collected by Society members and transplanted to the Society's nursery. Plants will then be used in restoration projects and/or sold at the Society's annual native plant sale. This can be done at no expense or liability to the developer/landowner. Please contact Lynn Redding at (302) 736-7726 or [lynn\\_redding@ml.com](mailto:lynn_redding@ml.com).

### **Nuisance Waterfowl**

Stormwater management ponds may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the perimeter. Waterfowl do not feel

safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

### **Solid Waste**

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

### **Air Quality**

Once complete, vehicle emissions associated with this project are estimated to be 12.7 tons (25,479.3 pounds) per year of VOC (volatile organic compounds), 10.5 tons (21,095.1 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 7.8 tons (15,564.4 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.7 ton (1,385.5 pounds) per year of fine particulates and 1,065.7 tons (2,131,308.3 pounds) per year of CO<sub>2</sub> (carbon dioxide).

***However, because this project is in a level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NO<sub>x</sub>; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NO<sub>x</sub> emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1,2 or 3).***

Emissions from area sources associated with this project are estimated to be 5.1 tons (10,276.9 pounds) per year of VOC (volatile organic compounds), 0.6 ton (1,130.8 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 0.5 ton (938.4 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.6 ton (1,210.9 pounds) per year of fine particulates and 20.8 tons (41,660.4 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 2.0 tons (4,073.0 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 7.1 tons (14,167.1 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 1,044.8 tons (2,089,647.8 pounds) per year of CO<sub>2</sub> (carbon dioxide).

	VOC	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Mobile	12.7	10.5	7.8	0.7	1065.7
Residential	5.1	0.6	0.5	0.6	20.8
Electrical Power		2.0	7.1		1044.8
TOTAL	17.8	13.1	15.4	1.3	2131.3

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 2.0 tons of nitrogen oxides per year and 7.1 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. 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: John Rossiter 739-4394**

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

a. **Fire Protection Water Requirements:**

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

b. **Accessibility:**

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

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

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

**d. Required Notes:**

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

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

**Department of Agriculture - Contact: Milton Melendez 698-4500**

The proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support this type of isolated development in this area. The intent of 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. They 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. Portions of this site have been designated as “excellent and good recharge” areas. DNREC has mapped all ground-water recharge potential areas. These areas have important ground-water recharge qualities. Maintaining pervious cover in “Excellent” and “Good” recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure 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. Additionally, this site overlaps with the State’s Green Infrastructure Investment Strategy Plan. The Crop Land layer is present on this site; this designation identifies areas that possess unique natural features that are valuable for preservation.

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

The project location is bounded to the north by the Albertson Expansion of the Willow Grove Agricultural District. The following 50 and 300 square foot restriction will apply to the Winterberry Woods residential subdivision.

Please see Delaware Code Title 3, Chapter 9, Subchapter II, Section 910.

**§ 910. Agricultural use protections.**

(a) Normal agricultural uses and activities conducted in a lawful manner are preferred and priority uses and activities in Agricultural Preservation Districts. 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 use adjacent to Agricultural Preservation Districts shall be subject to the following restrictions:

(1) For any new subdivision development located in whole or in part within 300 feet of the boundary of an Agricultural Preservation District, 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 an established Agricultural Preservation District in 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."

(2) For any new subdivision development located in whole or in part within 50 feet of the boundary of an Agricultural Preservation District, no improvement requiring an occupancy approval shall be constructed within 50 feet of the boundary of the Agricultural Preservation District.

- (b) Normal agricultural uses and activities conducted in accordance with good husbandry and best management practices in Agricultural Preservation Districts shall be deemed protected actions and not subject to any claim or complaint of nuisance, including any such claims under any existing or future county or municipal code or ordinance. In the event a formal complaint alleging nuisance related to normal agricultural uses and activities is filed against an owner of lands located in an Agricultural Preservation District, such owner, upon prevailing in any such action, shall be entitled to recover reasonably incurred costs and expenses related to the defense of any such action, including reasonable attorney's fees (68 Del. Laws, c. 118, § 2.).

Because the project is within 50 feet of the Albertson Expansion of the Willow Grove Agricultural District, Section 4.01(A)(2) of the Delaware Regulations Governing the Construction and Use of Wells applies to the Winterberry Woods residential subdivision. This regulation states:

(2) For any parcel, lot, or subdivision created or recorded within fifty (50) feet of, or within the boundaries of, an Agricultural Lands Preservation District (as defined in Title 3, Del. C., Chapter 9); all wells constructed on such parcels shall be located a minimum of fifty (50) feet from any boundary of the Agricultural Lands Preservation District. This requirement does not apply to parcels recorded prior to the implementation date of these Regulations. However, it is recommended that all wells be placed the maximum distance possible from lands which are or have been used for the production of crops which have been subjected to the application of land applied federally regulated chemicals.

The proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* and the Kent 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 is present in this site; this designation identifies areas that possess unique natural features that are valuable for preservation.

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

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 project location shares its northwestern boundary with the Albertson Agricultural District. The following 50 and 300 square foot restriction will apply to the Winterberry Woods subdivision, if recorded.

Please see Delaware Code Title 3, Chapter 9, Subchapter II, Section 910.

**§ 910. Agricultural use protections.**

(a) Normal agricultural uses and activities conducted in a lawful manner are preferred and priority uses and activities in Agricultural Preservation Districts. 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 use adjacent to Agricultural Preservation Districts shall be subject to the following restrictions:

(1) For any new subdivision development located in whole or in part within 300 feet of the boundary of an Agricultural Preservation District, 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 an established Agricultural Preservation District in 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."

(2) For any new subdivision development located in whole or in part within 50 feet of the boundary of an Agricultural Preservation District, no improvement requiring an occupancy approval shall be constructed within 50 feet of the boundary of the Agricultural Preservation District.

(b) Normal agricultural uses and activities conducted in accordance with good husbandry and best management practices in Agricultural Preservation Districts shall be deemed protected actions and not subject to any claim or complaint of

nuisance, including any such claims under any existing or future county or municipal code or ordinance. In the event a formal complaint alleging nuisance related to normal agricultural uses and activities is filed against an owner of lands located in an Agricultural Preservation District, such owner, upon prevailing in any such action, shall be entitled to recover reasonably incurred costs and expenses related to the defense of any such action, including reasonable attorney's fees (68 Del. Laws, c. 118, § 2.).

**Public Service Commission - Contact: Andrea Maucher 739-4247**

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

**Delaware State Housing Authority – Contact Jimmy Atkins 739-4263**

The proposal is a site plan review for 165 residential units on 166.28 acres. The proposal is located on the northwest side of the intersection of Almshouse and Thicket Roads, west of Camden. 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 the approval of this project.

DOE offers the following comments on behalf of the Caesar Rodney School District.

1. Using the DOE standard formula, this development will generate an estimated 83 students.
2. DOE records indicate that the Caesar Rodney School Districts' *elementary schools are not at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
3. DOE records indicate that the Caesar Rodney School Districts' *secondary schools are at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.

4. This development will create additional secondary student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Caesar Rodney School District Administration to address the issue of school over-crowding that this development will exacerbate.
5. DOE requests developer work with the Caesar Rodney School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.

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

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

Sincerely,

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

Constance C. Holland, AICP  
Director

CC: Kent County