STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF
STATE PLANNING COORDINATION

December 17, 2004

Mr. Gary T. Cuppels
Environmental Consultants International Corporation
P.O. Box 820
Rehoboth Beach, DE 19971

RE: PLUS review – PLUS 2004-11-04; Baylis Estates

Dear Mr. Cuppels:

Thank you for meeting with State agency planners on December 1, 2004 to discuss the proposed plans for the Baylis Estates project to be located approximately 1500' NE of the intersection of Route 24, along CR 297 in Sussex County.

According to the information received, you are seeking site plan approval for 100 residential units on 77 acres under the County's cluster ordinance.

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

This office has received the following comments from State agencies:

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

The Office of State Planning Coordination notes that this proposal is within an Investment Level 4 area according to the Strategies for State Policies and Spending and the Low Density area according to the Sussex County Comprehensive Plan. In these areas, State policies support agricultural preservation and natural resource conservation, not development activities. The State will not participate in any infrastructure improvements needed to support this development.

We also note that the site is currently mostly forested. We understand from discussion at the meeting on December 1, that the forest may not be a high quality forest. However, the forest is contiguous to larger forested blocks and provides benefits to the environment, such as habitat for wildlife, improving air quality, and improving water quality. For these reasons, if the proposal proceeds, we strongly encourage you to work with the Community and Urban Forestry program in the Department of Agriculture to develop a plan for the site the site that might include conservation and mitigation of forest on the site and improve the quality of preserved forest. We encourage you to work with the Community and Urban Forestry program and the Sussex Conservation District to develop a strategy for managing stormwater that minimizes the loss of trees on the site.

State Historic Preservation Office (SHPO) – Contact: Anne McCleave 739-5685

In the meeting it was noted that the developers hired Ed Otter, archaeologist, to survey the property for historic and cultural resources and to provide a report. According to the developers, Mr. Otter did not find any historic or cultural resources. The SHPO would like to request a copy of the report.

There are National Register listed properties on Del 5, with the closest being on the intersection of Del 5 and Mt. Joy, the Nanticoke Indian Museum. Please provide some landscape buffers on the southwest corner of the property to lessen any visual effects from the National Register property. There is a cemetery on lands to the south of the subject property and a burial site on lands to the north of the subject property. Be aware of the Delaware Unmarked Human Remains Act (7 Del. Code 54) and contact Faye Stocum in our office at 302-739-5685 if any unmarked human remains are discovered.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

Because the development is proposed for a Level 4 Area, it is inconsistent with the Strategies for State Policies and Spending. Therefore DelDOT will not participate in the cost of any road improvements needed to support this development. The comments that follow are technical, and are not intended to suggest that DelDOT supports this development proposal.

1) DelDOT recommends that a stub street be provided from Baylis Avenue to the Moore's Cloverleaf Farm, LLC parcel to the south. If possible, a stub street should also be provided to the Marshall Lee Coursey parcel to the east. They recognize that wetlands may make a connection to the Coursey parcel unfeasible.

2) DelDOT will require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the site.

3) The developer's site engineer should contact our Subdivision Manager for Sussex County, Mr. John Fiori, regarding our specific requirements for the design of the

road improvements and site entrance. Mr. Fiori may be reached at (302) 760-2260.

The Department of Natural Resources and Environmental Control – Contact: Kevin Coyle 739-3091

General Comment

The state should ask the developer to redesign this site plan. The current plan significantly fragments the forest; stormwater management ponds appear to be oversized; site plan is not interconnected and does not encourage walkability.

Soils
According to the recent soil survey update, the soils in the vicinity of the proposed construction are mapped as Klej, Fort Mott and Henlopen.

The following is a summary of mapped soils found within the proposed construction; they are grouped on the basis of drainage class:

Somewhat poorly drained -Klej
Well to drained – Fort Mott and Henlopen

Most of the soils found on subject parcel are well drained with rapidly permeable sandy surface but a slow, permeable subsoil. Such soils are conducive to nutrient leaching via groundwater or surface runoff into the surrounding watershed and these impacts are greatly intensified in soils that with shallow water tables.

ERES Waters

This project is located adjacent to receiving waters of Inland Bays designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 11.5 of Delaware's "Surface Water Quality Standards" (as amended August 11, 1999), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of nutrient runoff through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 11.5(e) of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree practicable, or where attainable, a standard requiring no discharge of pollutants.

TMDLs

With the adoption of Total Maximum Daily Loads (TMDLs) as a "nutrient-runoff-mitigation strategy" for reducing nutrients in the Inland Bays Watershed, reduction of

nitrogen and phosphorus loading will be mandatory. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are authorized under federal code, states are charged with developing and implementing standards to support those desired use goals. The Jurisdictional authority for attaining these use goals will fall under the auspices of Section 11.5 of the State of Delaware's Surface Water Quality Standards (as amended August 11, 1999), and will be achieved via nutrient reductions referred to as "pollution control strategies."

Nutrient reductions prescribed under TMDLs are assigned on basis of water quality concerns – that is, the those regions deemed to be of greatest environmental concern will require correspondingly higher levels of nutrient reduction than those regions deemed less environmentally sensitive. In this watershed, these regions are demarcated as high and low reduction zones. The high reduction zone corresponds to the western portion of the watershed, and requires a reduction of nitrogen and phosphorus by 85 and 65 percent, respectively. The low reduction zone corresponds to the eastern portion of the watershed and requires a reduction of nitrogen and phosphorus by 85 and 65 percent, respectively. **This project is proposed within the low nutrient reduction zone.**

In order for the applicant to verify compliance with the TMDL mandate, a full nutrient accounting process known as a nutrient budget shall be required. This nutrient budget shall assess and compare contemporary nutrient loading rates from current land use(s), with those projected for the changed land use(s). Under the current TMDL nutrient reduction criterion for the Inland Bays watershed, all lands bounded by said watershed must demonstrate nutrient reductions that meet or exceed those percentage reduction level(s) prescribed for that reduction zone (e.g., high or low reduction zone**)**

To ensure that the desired reductions are consistent with said TMDL, the nutrient budget should employ relevant scientifically defensible assumptions from peer-reviewed research conducted in a geologic setting similar to that of the coastal plain of Delaware. **Such a model is currently being developed by the Department. The developer/consultant should contact Lyle Jones (302-739-4590) in the Department's Watershed Assessment Section for further information regarding the acceptable protocol for calculating a nutrient budget.**

Based on the information provided through the PLUS application, DNREC believes that it will be very difficult for this proposal to meet the TMDL load reductions.

Since the TMDL for the Inland Bays mandates reducing nutrient loading to waters of the Inland Bays significant nitrogen and phosphorus loading must be realized from all sources, including onsite/community wastewater disposal systems. The Department has developed performance standards based on research by Departmental staff and Dr. Mike Hoover (North Carolina State University) for on-site wastewater treatment and disposal

systems. Due to the size of a development's system, the performance standard dictates that the effluent concentration levels can not exceed average annual nitrogen and phosphorus concentration level of 5 and 2 mg/l, respectively. The phosphorus standard only applies when applicable.

Water Supply

The project information sheets state water will be provided to the project by Tidewater Utilities via a central water system. Our records indicate that the project is located within the public water service area granted to Public Water Supply (a.k.a.Tidewater Utilities) under Certificate of Public Convenience and Necessity 87-WR-04.

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 302-739-3665.

Sediment and Erosion Control/Stormwater Management/Drainage

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.

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.

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.

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

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

A Certified Construction Reviewer (CCR) will be required for the site during construction. You should contact Sussex Conservation District for details regarding the CCR requirement.

Some significant historic drainage problems exist in this drainage area upstream of this site. New improvements must be planned and stormwater managed so as to not make the situation worse. The basins, as proposed, seem unnecessarily large to handle the runoff from this site. Consideration should be given to bypassing offsite drainage through this site to limit the size of the stormwater management facilities. It seems unlikely that infiltration will be possible in this area as a means of stormwater management. If the ponds ultimately become designed as wet ponds, the District is concerned that mounding of the groundwater table would become a problem because of the large size of the basins. It is strongly recommended that an easement be obtained from the neighboring landowner so a positive outfall can be provided to the stream located offsite near the northern corner of this site. If a pipe discharge from the site to the stream is proposed, try to combine all discharges to a single discharge point to prevent further tree clearing and disturbance to wetlands. Bypassing offsite drainage and obtaining a positive outfall should allow the size of the basins to be reduced and limit the amount of tree clearing necessary to accommodate stormwater management. The District does not endorse proposals to over size ponds (especially in wooded areas) for the purpose of obtaining fill material.

Forests

According to 2002 aerial photos, the entire parcel is forested. PLUS materials indicate 35-45% of this forest will be removed.

Lot lines should be redesigned to avoid all impacts to the forested area. This area provides important water quality, air quality and habitat benefits both to the site itself and the region. Therefore, the developer is strongly encouraged to preserve, and where possible, enhance forested resources on site. This includes removing lot lines and infrastructure (such as storm water management ponds) from forested areas to the extent possible and minimizing any clearing activities. The forested areas on-site should be viewed as a community asset and managed appropriately.

Forest blocks of 20 acres or more are of special conservation concern because of their value as wildlife habitat. The developer is encouraged to avoid any impacts to the large

forest block in the northern and northeastern portion of the parcel and in the western corner of the parcel. Encroaching into these areas causes "fragmentation" which can decrease the value of the forest for wildlife.

Forested areas on-site set aside for conservation purposes should be placed into a permanent conservation easement or other binding protection. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

DNREC 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. Please contact their office if the landowner(s) is interested in more information.

Open Space

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure be pulled out of the forest and areas of community open space be designated along the forested areas. Doing so will create recreational opportunities for residents by allowing them access to and views of the forest.

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.

Rare/Threatened/Endangered Species/Habitat

Based on review of topographic maps, aerial photographs, and because they have not visited the site previously, the DNHESP botanist requests the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. His observations would allow them to make more informed comments on this project and would allow the applicant the opportunity to reduce potential impacts to rare species. Please contact Bill McAvoy at (302) 653-2880 to set up a site visit.

Nuisance Species

The ponds scattered throughout the subdivision will likely attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. Although small numbers of these species are enjoyed by residents, geese and swans can quickly multiply and overwhelm the area. 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. Ponds that remain in the subdivision plan should be landscaped to deter nuisance species. Short manicured lawns around ponds provide an attractive habitat for these species. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area around ponds, are not as attractive to geese because they do not feel as safe from predators and other disturbance when their view of the area is blocked. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Revegetation/Landscaping

DNREC requests that no invasive species be used in the revegetation of disturbed or landscaped areas. A list of species considered invasive in Delaware can be found on the DNHP web site, www.dnrec.state.de.us/fw/invasive.htm. They further encourage, where possible/feasible, the use of native plants for habitat restoration projects on-site and their Botanist, Bill McAvoy can be contacted at (302) 653-2880 to assist you in developing a plant list.

Recreation

It is recommended that sidewalks be built fronting every residence and stub streets. A complete system of sidewalks will: 1) fulfill the recreation need for walking and biking facilities, 2) provide opportunities for neighbors to interact in the community, and 3) facilitate safe, convenient off-road access to neighboring communities, public mass transit stops, schools, stores, work, etc. Single-entrance communities, like this proposal, discourages pedestrian mobility to nearby schools, stores, and places of work.

If a trail system is planned, we recommend that a series of stacking trail loops be designed with access points in each subdivision “pod” and connections to adjacent communities. Community trail systems with long continuous trails, perimeter-only trails, and systems with few access points, often go unused and neglected. For trail design/construction specifications, contact Susan Moerschel at (302) 739-5285.

Underground Storage Tanks

There is one inactive LUST site(s) located near the proposed project:

Property of Charles Wagner, Facility # 5-000849, Project # S 9701008

No environmental impact is expected from the above inactive/active LUST site(s). 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 in the contaminated areas.

Air Quality

Air pollution threatens the health of human beings and other living things on our planet. While often invisible, pollutants in the air create smog and acid rain, cause cancer or other serious health effects, diminish the protective ozone layer in the upper atmosphere, and contribute to the potential for world climate change. Breathing polluted air can have numerous effects on human health, including respiratory problems, hospitalization for heart or lung disease, and even premature death. Some can also have effects on aquatic life, vegetation, and animals.

Once complete, vehicle emissions associated with this project are estimated to be 7.7 tons (15,349.0 pounds) per year of VOC (volatile organic compounds), 6.4 tons (12,707.9 pounds) per year of NOx (nitrogen oxides), 4.7 tons (9,376.1 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (834.6 pounds) per year of fine particulates and 642.0 tons (1,283,920.7 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project will be 3.1 tons (6,190.9 pounds) per year of VOC (volatile organic compounds), 0.3 ton (681.2 pounds) per year of NOx (nitrogen oxides), 0.3 ton (565.3 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (729.5 pounds) per year of fine particulates and 12.5 tons (25,096.7 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.2 tons (2,453.6 pounds) per year of NOx (nitrogen oxides), 4.3 tons (8,534.4 pounds) per year of SO2 (sulfur dioxide) and 629.4 tons (1,258,824.0 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	7.7	6.4	4.7	0.4	642.0
Residential	3.1	0.3	0.3	0.4	12.5
Electrical		1.2	4.3		629.4

Power					
TOTAL	10.8	7.9	9.3	0.8	1283.9

The Department of Natural Resources and Environmental Control is asking that local jurisdictions consider mitigation to help resolve this issue. Mitigation might involve limiting large new developments to growth zones, focusing development to urban areas capable of providing mass transit services, requiring more energy efficient homes which would lessen air quality impacts, and promoting walkability and bikability within and between developments and town centers.

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

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

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

b. **Accessibility:**
- All premises which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Mount Joy 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.
- If the use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.

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: Mark Davis 739-4811

This is a mixed forest site which has been cut over within the past 10 years and needs work. The developer should work with the DDA Forestry Office to determine options for this site.

Public Service Commission - Contact: Andrea Maucher 739-4247

The Public Service Commission has verified that the project is in a certificated area for Public Water Supply through Tidewater Utilities.

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.

If wastewater services are provided by a non-governmental entity, and there are more than 50 customers served, the wastewater service provider will need to apply to the PSC for a Certificate of Public Convenience and Necessity (CPCN). Additional requirements may apply if the provider has not previously been awarded a CPCN by the Commission. *Contact: Andrea Maucher at (302) 739-4247.*

Delaware State Housing Authority – Contact Karen Horton 739-4263

As a general rural, DSHA would like to see any residential development 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*. The proposal is located in an area targeted for agricultural activities and natural resource protection, and

therefore inconsistent with where the State would like to see new residential development.

Delaware Emergency Management Agency – Contact: Don Knox 659-3362

Due to the number of residential units being proposed, an impact to public safety is foreseen by implementation of this project. The developer should notify the police, fire service, and emergency medical response organization serving this portion of Sussex County, to keep them apprised of all development activities.

In Addition, Routes 5 and 24 are coastal storm evacuation routes and this development will be affected by traffic volume on these routes during a coastal storm event.

Sussex County – Contact: Rick Kautz 855-7878

The developer should provide stub road access to adjacent property as requested by DelDOT.

The Sussex County Engineer Department comments: The project proposes to develop using a private central community wastewater system. We recommend that the wastewater system be operated under a long-term contract with a capable wastewater utility that meets TMDL limits for Delaware's Inland Bays. 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 of the treatment and disposal system by the Sussex County Engineering Department is also required. 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 homeowners association expense. For questions regarding these comments, contact Rob Davis, Sussex County Engineering Department at (302) 855-7820.

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
Urquhart and Company