**STATE OF DELAWARE**
**EXECUTIVE DEPARTMENT**
**OFFICE OF STATE PLANNING COORDINATION**

May 17, 2012

Mr. Charlie Barnett
Morris Ritchie Associates
18 Boulden Circle, Ste. 36
New Castle, DE 19720

RE: PLUS review – 2012-04-06; Knollwood

Dear Mr. Barnett:

Thank you for meeting with State agency planners on April 24, 2012 to discuss the proposed plans for the Knollwood project located on Irish Hill Road and Peachtree Run Road in Kent County.

According to the information received, you are seeking a site plan approval through Kent County for 289 residential units on 146 acres.

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.**

## Strategies for State Policies and Spending

This project is located in Investment Level 2 according to the *State Strategies for Policies and Spending*. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas.

## Code Requirements/Agency Permitting Requirements

State Historic Preservation Office – Contact Terrence Burns 736-7404

- There are no known historic resources on or within this parcel. However, there was a late 19th or early 20th-century house (K-3552) very close by, on Irish Hill Road, but it may

have been replaced with a more recent house. Although there are no known resources within this parcel at this time, it is important that the developer be aware of Delaware's Unmarked Human Burials and Human Skeletal Remains Law, which is outlined in Chapter 54 of Title 7 of the Delaware Code.

Abandoned or unmarked family cemeteries are very common in the State of Delaware, and often they are on historic farm sites, rural areas or open space lands. Disturbing unmarked burials triggers Delaware's Unmarked Human Burials and Human Skeletal Remains Law (Delaware Code Title 7, Chapter 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. The Division of Historical & Cultural Affairs recommends that owners and/or developers have a qualified archaeological consultant investigate their project area for the presence of such a cemetery. If a cemetery is discovered, it is very costly to have it archaeologically excavated and the burials moved. In the event of such a discovery, the Division of Historical & Cultural Affairs recommends that the plans be re-drawn to leave the cemetery on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with a homeowners association or development. If you need or would like to read more information that pertains to cemeteries or unmarked human remains, please go to the following websites for additional information at www.history.delaware.gov/preservation/umhr.shtml and www.history.delaware.gov/preservation/cemeteries.shtml .

- Prior to any demolition or ground-disturbing activities (such as development or construction activities), the developer should consider hiring an archaeological consultant to examine the parcel for archaeological sites, such as a cemetery or unmarked human remains.

- If there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's effects on historic properties. Any preconstruction activities without adherence to these stipulations may jeopardize the issuance of a permit or receipt of funding if it is determined that such opportunity to comment has been foreclosed. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role, please review the Advisory Council's website at www.achp.gov.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Please refer to DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access (February 15, 2010) for the design of the site streets and entrance. The website for the Standards and Regulations is http://www.deldot.gov/information/pubs_forms/.

- The subject land was previously proposed for development under the same name but with a different lot layout and fewer lots in 2005. A traffic impact study (TIS) was completed and reviewed in 2005, subsequently, a plan was recorded, and in 2010 agreements were executed for performance of the offsite improvements and street construction plans were approved. With the change in ownership and the proposed change in use, that plan approval will need to be revisited. In accordance with Section 8.6 of the Standards and Regulations, the developer will need to submit a revised site plan and revised street construction plans for review to obtain a Letter of No Objection and a street construction plan approval specific to the current development proposal.

- As part of the plan reviews mentioned above, we will require either a new signal agreement for the intersection of Delaware Route 15 and Irish Hill Road and a new letter agreement regarding off-site improvements, or documentation that the current developer has assumed the previous developer's responsibilities in these regards. Section 3.10 of the Standards and Regulations addresses these types of agreement.

- As discussed in the attached letter to Kent County, DelDOT does not see a need to revisit the 2005 TIS. However, if the County determines that one is needed, they will provide them with technical support.

- While DelDOT does not presently see a need for one, Section 3.9 of the Standards and Regulations provides that in evaluating access, DelDOT may require an Operational Analysis. While it is not contained in our regulations, DelDOT uses a threshold of 200 daily trips to determine when to begin considering the need for an Operational Analysis. A decision regarding the need for an Operational Analysis will be made at the pre-submittal meeting discussed below.

- As indicated on the DelDOT Meeting Request Form, available at http://www.deldot.gov/information/business/, because the site would generate more than 200 trips per day, a pre-submittal meeting is required. The purpose of such meetings, similar to PLUS meetings, is to identify problems with your plan so that they can be corrected before the plan enters our formal plan review process. Please complete and submit the form to request such a meeting.

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

**TMDLs**

- The project is located in the greater Delaware River and Bay drainage, specifically within the Murderkill watershed. In this watershed, the State of Delaware has developed specific Total Maximum Daily Load (TMDL) pollutant reduction targets for nitrogen, phosphorus, and bacteria (under the auspices of Section 303(d) of the Clean Water Act). 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 State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; State of Delaware Surface Water Quality Standards, as amended July 11, 2004) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. The TMDL for the Murderkill River watershed calls for a 30 and 50 percent reduction in nitrogen and phosphorus, respectively, from baseline conditions. The TMDL also calls for a 32 percent reduction in bacteria from baseline conditions.

- A nutrient management plan is required under the *Delaware Nutrient Management law (3 Del. Chapter 22)* for all persons or entities who apply nutrients to lands or areas of open space in excess of 10 acres. This project's open space may exceed this 10-acre threshold. Please contact the Delaware Nutrient Management Program at 739-4811 for further information concerning compliance requirements or view the following web link for additional information: http://dda.delaware.gov/nutrients/index.shtml

**Water Supply**

- The project information sheets state water will be provided to the project by Tidewater Utilities via a public water system. Our records indicate that the project is located within the public water service area granted to Tidewater Utilities under Certificate of Public Convenience and Necessity PSC-1190.

- 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.

**Sediment and Stormwater Program**

- A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. It is strongly recommended that the owner and consultant contact the Kent Conservation District to schedule a project 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. The plan review and approval as well as construction inspection will be coordinated through the Kent Conservation District. Contact Jared Adkins, Program Manager, at the Kent Conservation District at (302) 741-2600, ext. 3 for details regarding submittal requirements and fees. (Title 7, Delaware Code, Chapter 40 and Delaware Regulations, Title 7, Administrative Code, 5101)

**Tank Management Branch Please** be aware:

- If a release of a Regulated Substance occurs at the proposed project site, compliance of 7 Del.C., Chapter 60, 7 Del.C., Chapter 74 and DE Admin. Code 1351, State of Delaware *Regulations Governing Underground Storage Tank Systems* (the UST Regulations) is required.

- Per the **UST Regulations: Part E, § 1. Reporting Requirements**:

    - Any indication of a Release of a Regulated Substance that is discovered by any Person, including but not limited to environmental consultants, contractors, utility companies, financial institutions, real estate transfer companies, UST Owners or Operators, or Responsible Parties shall be reported within 24 hours to:

        - The Department's 24-hour Release Hot Line by calling 800-662-8802; and
        - The DNREC, Tank Management Section by calling 302-395-2500.

Delaware State Fire Marshall's Office – Contact Duane Fox 739-4394

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:

- **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.

- **Accessibility:**

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

- **Gas Piping and System Information:**

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

- **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

**Recommendations/Additional Information**

This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped **(but in no way required)** that the applicant will open a dialogue with the relevant agencies to discuss how these suggestions can benefit the project.

State Historic Preservation Office – Contact Terrence Burns 736-7404

- The developer should also include sufficient landscaping or barrier between the proposed development and the house (K-3552) that was mentioned, in order to protect it from any type of visual or sound effects that may impact or affect it in an adverse way.

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

**Additional information on TMDLs and water quality**

- A Pollution Control Strategy (PCS) is the regulatory directive requiring the implementation of various best management practices (BMPs) that help reduce transport of nutrient and bacterial pollutant runoff from all waters draining into a "greater" common watershed, with the ultimate objective of achieving the obligatory TMDL reduction requirements designated for that watershed. However, the PCS for the Murderkill watershed has not been formally completed to date. In the absence of a current PCS, the applicant is strongly urged to reduce nutrient and bacterial pollutants through the voluntary commitment to the implementation of the following recommended BMPs:

    - DNREC strongly encourage the applicant to maintain as much of the existing forest cover as possible. We further suggest additional native tree and native herbaceous planting wherever possible.

    - According to the PLUS application, a wetlands delineation has been conducted but not approved by the USACE. DNREC strongly recommends that the applicant obtain approval from the USACE.

    - Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882.), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from all water bodies (including ditches) and wetlands (field delineated and approved by the USACE). A buffer width

less than 100-foot from wetlands or waterways are not sufficiently protective of water quality.

- The applicant should calculate post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, and roads) included in the calculation.

- Since this is a large project that will likely generate a great amount of impervious cover, we strongly advise the use of pervious paving materials (instead of conventional asphalt and concrete) as a BMP to reduce the impacts associated with surface imperviousness, wherever practicable.

- DNREC recommends the use of rain gardens, and green-technology storm water management structures (in lieu of open-water management structures) as BMPs to mitigate or reduce nutrient and bacterial pollutant impacts via runoff from impervious surfaces.

- The applicant should voluntarily assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the "Nutrient Load Assessment protocol." The protocol is a tool used to assess changes in nutrient (e.g., nitrogen and phosphorus) and bacterial loading that result from the conversion of individual or combined land parcels to a different land use(s), while providing applicants with quantitative information about their project's impact(s) on baseline water quality. DNREC encourages the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact Lyle Jones at 302-739-9939 for more information on the protocol.

**Drainage Program**

- The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. There have been issues with the outlet for this property in the past.

  Due to the history of the downstream outlet, the Drainage Program recommends utilizing green technology BMP's to the fullest extent on the site.

**Key Wildlife Habitat**

- The forest on this parcel is mapped as Key Wildlife Habitat (KWH) in the Delaware Wildlife Action Plan[1] (DEWAP) because it is part of a larger forest block. KWH can support the full array of species across the landscape and the maps in DEWAP show areas of the state where conservation efforts can be focused. Although designation as KWH is non-regulatory, these maps are intended to help guide site-specific conservation planning efforts. This forest also provides an upland buffer to wetlands associated with a tributary to Double Run. Buffers protect water quality and provide habitat for wildlife. Wildlife corridors found adjacent to streams or wetlands support the survival of many species by providing sources of food and water, providing protective cover from predators and shelter from harsh weather, and reconnecting isolated populations. Research studies show a great number of songbirds, game birds, small mammals, reptiles and amphibians, and other wildlife use corridors as a regular part of their life cycles.

- ***Recommendation*: There are 10 lot lines within the forested area described above. DNREC highly recommends that the applicant consider reconfiguring the site plan and pull these lot lines out of the forested area to ensure that there will not be further clearing by residents. In addition, there should be at least a 100-foot buffer between lot lines and wetlands to protect water quality and provide wildlife habitat.**

**Additional information on tank management**

- When contamination is encountered, PVC pipe materials should be replaced with ductile steel and nitrile rubber gaskets in the contaminated areas.

- If any aboveground storage tanks (ASTs) less than 12,500 gallons are installed, they must be registered with the TMS. If any ASTs greater than 12,500 gallons are installed, they are also subject to installation approval by the TMS.

**Water Resource Protection Area**

- The southern portion of the project falls within an area of excellent groundwater recharge potential for the Kent County (see map). The applicant has requested a change in the

[1] The Delaware Wildlife Action Plan (DEWAP) is a comprehensive strategy for conserving the full array of native wildlife and habitats-common and uncommon- as vital components of the state's natural resources. Congress challenged the states to demonstrate comprehensive wildlife conservation. Delaware, along with all of the other states and provinces throughout the country are working to implement their wildlife action plans. This document can be viewed via the Division of Fish and Wildlife's website at http://www.fw.delaware.gov/dwap/Pages/default.aspx. DEWAP also contains a list of species of greatest conservation need, key wildlife habitat, and species-habitat associations.

proposed use from agricultural to residential (Questions 15 & 16) however; the applicant has not requested a change in zoning (Questions 13 & 14). The site plan shows a significant portion of the stormwater management in the excellent groundwater recharge potential area.

- Kent County does not have an ordinance specifically addressing land use in areas of excellent groundwater recharge potential. The change in land use from agriculture to residential has the potential to introduce impervious cover. Impervious cover prevents precipitation from infiltrating through the soil to the water table aquifer. Impervious cover refers to structures including but not limited to roads, sidewalks, parking lots, and buildings. Any impervious cover within an area of excellent ground-water recharge potential area has the potential to have a negative effect the quality and quantity of drinking water available.

  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. These soils are able to transmit water very quickly from the land surface to the water table. This map category (excellent) is an indicator of how fast contaminants will move and how much water may become contaminated (Andres, 2004). Land use activities or impervious cover on areas of excellent ground-water recharge potential may adversely affect ground water in these areas.

- The construction phase of storm water management ponds requires excavation, hauling, and grading. The heavy equipment used in this phase has the capacity to compact and degrade the structure of the strata that defines the area as an excellent ground-water recharge area (Schueler, 2000). Changes to the structural soil properties may cause significant reduction in recharge capacity. Installing storm-water management ponds in excellent ground-water recharge areas has the potential to contaminate the ground water beneath it and infiltrate into the aquifer.

- Ground Water Protection Branch recommends limiting impervious cover to less than 20% within the portion of the parcel within the excellent groundwater recharge potential area. However, impervious cover may be increased to no more than 50% if the following criteria are met:

  - Perform an environmental assessment report showing that *water quality* as well as *water quantity* of post development recharge is equal to or greater than pre-development recharge (Kaufmann, 2005).

  - Quantify amount of recharge lost due to impervious cover and provide for onsite infiltration of water at least equal to or greater than pre-development recharge (Kaufmann, 2005).

- Pretreatment of parking area runoff to remove dissolved chemical and nutrient loads prior to infiltration

- Use Better Management Practices in the design, construction, and maintenance of a storm water management system designed to address water quality with respect to nutrient and other pollutant loads.

- In addition, because the excellent ground water recharge area can readily 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.

*References*

Andres, A. Scott, 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware: Delaware Geological Survey Report of Investigations No. 66, p. 14.
http://www.udel.edu/dgs/Publications/pubform.html#nvestigations
Kauffman, G.J., Wozniak, S.L., and Vonck, K.J., 2005, *Delaware Ground-Water Recharge Design Manual*: Newark, DE, Water Resources Agency, University of Delaware, p. 31.
http://www.wr.udel.edu/swaphome/Publications/SWPguidancemanual.html
Schueler, T. R., 2000, The Compaction of Urban Soils, *in* Schueler, T.R., and Holland, H.K., eds., The Practice of Watershed Protection: Ellicott City, MD, Center for Watershed Protection, p. 752.


Delaware State Fire Marshall's Office – Contact Duane Fox 739-4394

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

**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

Constance C. Holland, AICP
Director, Office of State Planning Coordination

CC: Kent County