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

November 20, 2006

Mr. Doug Barry
Pennoni Associates, Inc.
62 Rockford Road, Ste. 201
Wilmington, De 19806

RE: PLUS review – PLUS 2006-10-08; Holly Oak Estates

Dear Mr. Barry:

Thank you for meeting with State agency planners on October 25, 2006 to discuss the proposed plans for the Holly Oak Estates project to be located at the southeast intersection of Central Church Road and Kenton Road near Dover.

According to the information received, you are seeking site plan approval through Kent County for 219 residential units on 72.8 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.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

State Strategies/Project Location

- This project is located in Investment Level 2 according to the *Strategies for State 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. Our office has no objections to the proposed development of this project in accordance with the relevant County codes and ordinances.

Street Design and Transportation

- Central Church Road and Kenton Road are both collector roads. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads. Therefore DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.

- DelDOT will also require the construction of a 10-foot wide shared use path in a 15-foot wide permanent easement across the frontages of the site.

- The developer should anticipate a requirement to improve sections of Kenton Road and Central Church Road to meet DelDOT's collector road standards.

- The developer should anticipate a requirement to enter a signal agreement for the intersection of Kenton Road and Central Church Road. DelDOT will install a signal at this intersection if and when we find that one is warranted. The agreement would obligate the developer to fund, or participate in funding, that signal when they install it.

- DelDOT will require a minimum radius of 150 feet on all horizontal curves in subdivision streets. There appear to be several locations that do not meet this standard.

- The north entrance proposed on Kenton Road is undesirably close to the Central Church Road intersection. It should be eliminated.

- It appears as though two connections are proposed on the easterly side of the site to tie-in to The Woods of Carlisle subdivision. However, that subdivision is already built and its layout does not provide for such connections. At the PLUS meeting, it was clarified that these stubs are actually turnarounds. Preliminarily, we recommend that the alley between the two turnarounds be

reconfigured as a loop around Lots 206 though 211.

- There are three long, relatively straight streets, on which speeding could become an issue. It appears that most of the lots along them would be served by alleys and would not have driveways on those three main streets. DelDOT would recommend that that be done for all lots on those streets. The developer should be aware that DelDOT does not maintain alleys.

Natural and Cultural Resources

- Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested riparian and palustrine farmed wetlands were mapped on subject parcel. The SWMP- mapped palustrine forested riparian wetlands are associated with a headwater tributary to the Fork Branch. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. The developer should maintain a 100-foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.

- Lots 20, 64, and 123 have existing ditches that are proposed to be filled within the building area. Such practice may lead to future drainage problems with basements, crawlspaces, and yards. The Drainage Program recommends the reconfiguration of these lots into open space with buffers. If the above-mentioned lots are developed as proposed, the Drainage Program requests a statement placed on the deed of the lots warning the future buyers of potential drainage problems.

- Lots 88, 89, 90, 218, and 219 have existing wetlands that are proposed to be filled within the building area. Such practice may lead to future drainage problems with basements, crawlspaces, and yards. The Drainage Program recommends the reconfiguration of these lots into open space with buffers. If the above-mentioned lots are developed as proposed, the Drainage Program requests a statement placed on the deed of the lots warning the future buyers of potential drainage problems.

- In order to provide more informed comments and to make recommendations, the DNREC program botanist and zoologist request the opportunity to survey the forest and wetland areas that could potentially be impacted by the project.

- DNREC has never surveyed the project site, but *Ardea herodias* (Great Blue Heron) and other colonial nesting species may exist within the project site along the tributary of Fork Branch. This colony did occur upstream of your project site along Fork Branch, however, the colony was forced to move due to development related disturbance and now occur downstream from your proposed project. It is

important to maintain a forested riparian corridor along Fork Branch and its tributaries because of use by this colony as well as other wildlife species. DNREC also have records of *Accipiter cooperii* (Cooper's Hawk), a state-Endangered hawk that inhabits forested areas for breeding and hunting.

Recommendation #1: To protect rare species mentioned above and other species that utilize forested riparian areas, we recommend that at least a 300-foot buffer remain intact along the Fork Branch tributary. Adequate riparian buffers will not only protect critical breeding areas, but will also serve to protect water quality within the Fork Branch system which receives cumulative inputs from developments along its length.

Recommendation #2: To preserve more of the existing forest, we recommend that this plan be downscaled to include larger, connected areas of forested open space. This would entail omitting lots and associated infrastructure.

Recommendation #3: Stormwater management ponds should not be located within the forested area. Trees function in flood control and it does not make sense to clear trees to create a pond with the same purpose. An alternate method of stormwater management should be considered or ponds relocated to non-forested areas of the parcel.

Recommendation #4: The two spaces designated "active recreation areas #1 and #2" should remain forested and not be cleared and planted with lawn type grass. This is important as both of these areas are too close to adjacent wetlands and serve as an upland buffer.

Recommendation #5: If tree clearing occurs despite the recommendations above, clearing should not occur April 1st to August 30th to reduce impacts to birds and other wildlife species that utilize trees for breeding. This recommendation would only protect those species during one breeding season, as once trees are cleared the result is an overall loss of habitat.

- There are both lots and infrastructure either directly within or adjacent to wetlands without adequate upland buffers. Buffers around wetlands protect the function and integrity of those wetlands.

Recommendation #6: The proposed wetland buffers are highly inadequate as there should be at least a 100-foot buffer between lots and infrastructure. Lots and associated infrastructure should be moved out of

this buffer zone. It is obvious that the following lots and site plan features are too close to wetlands (there may be additional lots within 100 feet of wetlands that should also be omitted): lot #'s 45-54, 80-86, 120-126, 144-153, 197-205, 214-219, roads associated with these lots, and at least two stormwater management ponds.

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

Office of State Planning Coordination – Contact: David Edgell 739-3090

This project is located in Investment Level 2 according to the *Strategies for State 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. Our office has no objections to the proposed development of this project in accordance with the relevant County codes and ordinances.

Our office would like to commend the developer for an innovative subdivision design that utilizes the "New Urbanist" style to integrate single family, duplex, and townhome dwellings. The subdivision design incorporates meaningful open space throughout the housing areas while also attempting to preserve tracts of forests, wetlands and natural resources on the site. This design incorporates many of the concepts our office is promoting through our Better Models for Development in Delaware publication.

You will note from DNREC's comments in this letter that there are concerns that the current subdivision plan does not adequately buffer important wetland areas, and removes too much forest. There are also concerns about the filling of wetlands and drainage ditches. The developers are encouraged to reconsider these aspects of the site design in order to protect the ecological features on the site. Good New Urbanist design strives to build more densely where it is suitable while protecting critical natural resources and integrating natural features within the overall site design.

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

This parcel contains an early-20th-c. historic agricultural complex (K-6317) in the southern corner. Another complex of the same period (K-6318) is cut out of the parcel on Central Church Rd. The Central Church (K-1037) is across Kenton Rd from the parcel, at the crossing with Central Church Rd. there are a few areas of medium potential for prehistoric archaeological sites within the parcel.

If this project requires an Army Corps of Engineers permit due to wetland crossings, the developer will be required to consult with this office, and may be required to undertake archaeological investigations depending on the area of the Corps' jurisdiction. The DHCA will be happy to help the developer through this process.

It is recommended that sufficient landscaping around the development be included to block any adverse visual or noise effects on the nearby historic properties. The DHCA would appreciate the opportunity to document the existing buildings before any demolition activities occur. They would also appreciate the opportunity to examine the area for possible archaeological sites, to learn something about their location, nature, and extent prior to any ground-disturbing activities.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

1) A traffic impact study was scoped for the development of this property in April 2006 under the name Lambertson. As DelDOT has since discussed with the developer's engineer, the current development proposal does not warrant a traffic impact study (TIS). However, if the number of dwellings was increased by a relatively small number, which would vary depending on the proportions of each dwelling type, a TIS could become necessary.

2) Central Church Road and Kenton Road are both collector roads. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 40 feet from the centerline on collector roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.

3) DelDOT will also require the construction of a 10-foot wide shared use path in a 15-foot wide permanent easement across the frontages of the site.

4) The developer should anticipate a requirement to improve sections of Kenton Road and Central Church Road to meet DelDOT's collector road standards. Preliminarily, those improvements would include widening the road to 12-foot lanes and 8-foot shoulders, an overlay of the existing pavement and improvements to the geometry and drainage. Again preliminarily, the limits of those improvements on each road will be from the intersection of the two roads to the far limits of the site frontage. A final determination regarding the limits of the improvements, and the details of the improvements, such as the thickness of any required overlay, will be determined as part of the subdivision street construction plans.

5) The developer should anticipate a requirement to enter a signal agreement for the intersection of Kenton Road and Central Church Road. DelDOT will install a signal at this intersection if and when we find that one is warranted. The agreement would obligate the developer to fund, or participate in funding, that signal when we install it.

6) DelDOT will require a minimum radius of 150 feet on all horizontal curves in subdivision streets. There appear to be several locations that do not meet this standard.

7) The north entrance proposed on Kenton Road is undesirably close to the Central Church Road intersection. It should be eliminated.

8) It appears as though two connections are proposed on the easterly side of the site to tie-in to The Woods of Carlisle subdivision. However, that subdivision is already built and its layout does not provide for such connections. At the PLUS meeting, it was clarified that these stubs are actually turnarounds. Preliminarily, we recommend that the alley between the two turnarounds be reconfigured as a loop around Lots 206 though 211.

9) There are three long, relatively straight streets, on which speeding could become an issue. It appears that most of the lots along them would be served by alleys and would not have driveways on those three main streets. DelDOT would recommend that that be done for all lots on those streets. The developer should be aware that DelDOT does not maintain alleys.

10) The developer's site engineer should contact the project manager for Kent County, Mr. Brad Herb, regarding specific requirements for streets, entrances and road improvements. Mr. Herb may be reached at (302) 266-9600.

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

Green Infrastructure

Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest.

Green infrastructure is defined as Delaware's natural life support system of parks and preserves, woodlands and wildlife areas, wetlands and waterways, productive agricultural and forest land, greenways, cultural, historic and recreational sites and other natural areas all with conservation value. Preserving Delaware's Green Infrastructure network will support and enhance biodiversity and functional ecosystems, protect native plant and animal species, improve air and water quality, prevent flooding, lessen the disruption to natural landscapes, provide opportunities for profitable farming and forestry enterprises, limit invasive species, and foster ecotourism.

Voluntary stewardship by private landowners is essential to green infrastructure conservation in Delaware, since approximately 80 percent of the State's land base is in private hands. It is in that spirit of stewardship that the Department appeals to the landowner and development team to protect sensitive resources through an appropriate site design.

Soils

Based on the Kent County soil survey, Sassafras, Fallsington, Elkton, and Pocomoke were mapped on subject parcel. Sassafras is a well-drained upland soil that, generally, has few limitations for development. Fallsington, Elkton, and Pocomoke are poorly to very poorly-drained wetland associated (hydric) soils that have severe limitations for development.

It should also be noted that a significant portion of subject parcel (approximately 50-60%) is likely to have a seasonal high water table within one-foot of the soil surface. These soils are mapped as Hurlock and are indicative of wetland conditions. Building in such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding, especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or "nor'easters." This is in addition to increased flooding likely from surface water runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks).

Wetlands

Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested riparian and palustrine farmed wetlands were mapped on subject parcel. The SWMP-mapped palustrine forested riparian wetlands are associated with a headwater tributary to the Fork Branch. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. The developer should maintain a 100-

foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.

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.

As noted previously, this parcel contains SWMP-mapped headwater riparian wetlands. Headwater riparian wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of a stream, including the floodplain system and/or water bodies further downstream. Since streams are a major avenue for nutrient-laden stormwater and sediment runoff their protection deserves the highest priority. In recognition of this concern, the Watershed Assessment Section strongly recommends the applicant preserve the existing riparian buffer(s) in their entirety.

Impervious Cover

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 28 percent. However, given the scope and density of this project, this estimate is likely to be a significant **underestimate** of the actual amount of created post-development surface imperviousness. The applicant should recognize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the calculation. The applicant should verify whether their calculation includes all said forms of constructed surface imperviousness.

Studies have 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 aggregate 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 Pollution Control Strategy (PCS)

As indicated above, Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been proposed for the St. Jones Watershed. The TMDL calls for a 40% reduction for nitrogen and phosphorus from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses/wetlands, increasing passive, wooded open space, and the use of stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Supply

The project information sheets state water will be provided to the project by Tidewater Utilities via a central water system. DNREC 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.

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

Sediment and Erosion Control/Stormwater Management

Requirements:

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.

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. Portions or all of the lands associated with this proposal are within the Livable Delaware Green Infrastructure area established under the Governor's Executive Order #61 that represents a network of ecologically important natural resource lands of special state conservation interest. Great care must be used when designing and developing this site if approved.

2. 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.

3. 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.

4. 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.

5. A letter of no objection to re-recordation will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.

6. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.

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

Drainage

Lots 20, 64, and 123 have existing ditches that are proposed to be filled within the building area. Such practice may lead to future drainage problems with basements, crawlspaces, and yards. The Drainage Program recommends the reconfiguration of these lots into open space with buffers. If the above-mentioned lots are developed as proposed, the Drainage Program requests a statement placed on the deed of the lots warning the future buyers of potential drainage problems.

Lots 88, 89, 90, 218, and 219 have existing wetlands that are proposed to be filled within the building area. Such practice may lead to future drainage problems with basements, crawlspaces, and yards. The Drainage Program recommends the reconfiguration of these lots into open space with buffers. If the above-mentioned lots are developed as proposed, the Drainage Program requests a statement placed on the deed of the lots warning the future buyers of potential drainage problems.

The Drainage Program requests 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 the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.

The Drainage Program does not have a clear understanding how stormwater is to be conveyed to the stormwater management areas. The Drainage Program requests the routing of major stormwater pipes through yards be prohibited.

The Drainage Program encourages the elevation of rear yards to direct water towards the streets where storm drains are accessible for maintenance. However, the Drainage Program recognizes the need for catch basins in rear yards in certain cases. Therefore, catch basins placed in rear yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, kennels, and other structures placed along the storm drains, or within 10 feet of the catch basins, can hinder drainage patterns as well as future maintenance to the storm drains or catch basins. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.

The Drainage Program requests a 15-foot side yard setback on all lots with a drainage easement on the side. A 15-foot side yard setback will allow room for equipment to utilize the entire drainage easement and maneuver free of obstructions if the drainage conveyance requires periodic maintenance or future re-construction.

The Drainage Program requests a 10-foot drainage easement around all catch basins located on private property to ensure adequate room for maintenance. The Drainage Program recommends restrictions on fences, sheds, and other structures within the easement to prevent obstructions from being placed within 10 feet of the catch basin.

Record all drainage easements on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction.

Preserve existing riparian buffers and wetlands to aid in the reduction of nutrients, sediment, and other pollutants entering Fork Branch. For the further enhancement of water quality in the Silver Lake watershed, please explore the use of additional water quality measures to filter excess nutrients in stormwater runoff from this site before releasing stormwater into Fork Branch.

For questions or clarifications, please contact Jim Sullivan at (302) 739-9921.

Site Visit Request

In order to provide more informed comments and to make recommendations, the DNREC program botanist and zoologist request the opportunity to survey the forest and wetland areas that could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and unique habitats and to ensure that the project is environmentally sensitive. In addition, a survey of the project site will give staff an opportunity to document the biodiversity of the property before project activities begin. Please contact Bill McAvoy or Kitt Heckscher at (302) 653-2880 to set up a site visit.

Rare Species

DNREC has never surveyed the project site, but *Ardea herodias* (Great Blue Heron) and other colonial nesting species may exist within the project site along the tributary of Fork Branch. This colony did occur upstream of your project site along Fork Branch, however, the colony was forced to move due to development related disturbance and now occur downstream from your proposed project. It is important to maintain a forested riparian corridor along Fork Branch and its tributaries because of use by this colony as well as

other wildlife species. We also have records of *Accipiter cooperii* (Cooper's Hawk), a state-Endangered hawk that inhabits forested areas for breeding and hunting.

Recommendation #1: To protect rare species mentioned above and other species that utilize forested riparian areas, we recommend that at least a 300-foot buffer remain intact along the Fork Branch tributary. Adequate riparian buffers will not only protect critical breeding areas, but will also serve to protect water quality within the Fork Branch system which receives cumulative inputs from developments along its length.

Forest Preservation

This project will not only result in direct forest loss, but will also serve to fragment the forest in an area where cumulative forest loss is a real concern. This site contains forested wetlands and DNREC strongly recommends the applicant downsize the project and preserve more of the existing forest. Larger, connected areas of forest are more beneficial to wildlife species than small, fragmented sections of open space. When forested areas are converted into a 'residential woods', wildlife species must coexist with residents or disperse into surrounding areas. This often results in human/animal conflicts, including interactions on the roadways. Forest clearing also puts additional pressure on nearby wildlife areas, Nature Preserves and other public owned land.

Recommendation #2: To preserve more of the existing forest, we recommend that this plan be downscaled to include larger, connected areas of forested open space. This would entail omitting lots and associated infrastructure.

Recommendation #3: Stormwater management ponds should not be located within the forested area. Trees function in flood control and it does not make sense to clear trees to create a pond with the same purpose. An alternate method of stormwater management should be considered or ponds relocated to non-forested areas of the parcel.

Recommendation #4: The two spaces designated "active recreation areas #1 and #2" should remain forested and not be cleared and planted with lawn type grass. This is important as both of these areas are too close to adjacent wetlands and serve as an upland buffer.

Recommendation #5: If tree clearing occurs despite the recommendations above, clearing should not occur April 1st to August 30th to reduce impacts to birds and other wildlife species that utilize trees for breeding. This recommendation would only protect those species during one breeding season, as once trees are cleared the result is an overall loss of habitat.

Wetland Buffers

There are both lots and infrastructure either directly within or adjacent to wetlands without adequate upland buffers. Buffers around wetlands protect the function and integrity of those wetlands. This site plan will result in at least 28% impervious surface, and adequate buffers will be needed to protect water quality of adjacent wetlands and water bodies. In addition, there are numerous wildlife species that utilize wetlands and require upland buffers during a portion of their life cycle. It is also unclear why an area of non-jurisdictional wetland in the southwestern portion of the plan is going to be filled. This wetland area appears to be associated with the Fork Branch System and should not be filled.

Recommendation #6: The proposed wetland buffers are highly inadequate as there should be at least a 100-foot buffer between lots and infrastructure. Lots and associated infrastructure should be moved out of this buffer zone. It is obvious that the following lots and site plan features are too close to wetlands (there may be additional lots within 100 feet of wetlands that should also be omitted): lot #'s 45-54, 80-86, 120-126, 144-153, 197-205, 214-219, roads associated with these lots, and at least two stormwater management ponds.

Plant Rescue

Since forested wetlands are to be destroyed, filled, or disturbed, 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, (lynn_redding@ml.com) or William A. McAvoy at (302) 653-2880, (william.mcavoy@state.de.us).

Nuisance Geese

The applicant indicated that nuisance geese would be considered in the planning of this project but methods of control were not indicated. Wet ponds planned for the subdivision 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 a reduction in the number and/or size of the ponds, 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 16.8 tons (33,614.2 pounds) per year of VOC (volatile organic compounds), 13.9 tons (27,830.3 pounds) per year of NOx (nitrogen oxides), 10.3 tons (20,533.7 pounds) per year of SO2 (sulfur dioxide), 0.9 ton (1,827.9 pounds) per year of fine particulates and 1,405.9 tons (2,811,786.2 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 6.8 tons (13,558.1 pounds) per year of VOC (volatile organic compounds), 0.7 ton (1,491.8 pounds) per year of NOx (nitrogen oxides), 0.6 ton (1,238.0 pounds) per year of SO2 (sulfur dioxide), 0.8 ton (1,597.6 pounds) per year of fine particulates and 27.5 tons (54,961.7 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 2.7 tons (5,373.5 pounds) per year of NOx (nitrogen oxides), 9.3 tons (18,690.3 pounds) per year of SO2 (sulfur dioxide) and 1,378.4 tons (2,756,824.6 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	16.8	13.9	10.3	0.9	1405.9
Residential	6.8	0.7	0.6	0.8	27.5

Electrical Power		2.7	9.3		1378.4
TOTAL	23.6	17.3	20.2	1.7	2811.8

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 2.7 tons of nitrogen oxides per year and 9.3 tons of sulfur dioxide per year.

A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, http://www.energystar.gov/:

"ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

building envelope upgrades,
high performance windows,
controlled air infiltration,
upgraded heating and air conditioning systems,
tight duct systems and
upgraded water-heating equipment."

The 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.
- Where a water distribution system is proposed for townhouse type dwellings it shall be capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 800 feet spacing on centers are required.
- The infrastructure for fire protection water shall be provided, including the size of water mains.

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

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

d. **Required Notes**:

- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Duplex and Townhouse 2-hr separation wall details shall be shown on site plans
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

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

Department of Agriculture - Contact: Scott Blaier 698-4500

The Delaware Department of Agriculture has no objections to the proposed application. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas within Investment Level 2, and within Kent County's designated growth zone.

This project is particularly well suited to take advantage of Kent County's "transfer of development rights" (TDR) program. The Department realizes the developer already considered this option, as discussed at the October 25 PLUS meeting, and that there were some obstacles that ultimately dissuaded the developer from using the program. However, the Department would be glad to work with the developer, the Office of State Planning and Coordination, Kent County, and whomever else, to take another look at the project, and see if there is some way to use the TDR program.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the "Right Tree for the Right Place" for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

Tree Mitigation

The Delaware Forest Service encourages the developer to implement a tree mitigation program to replace trees at a 1:1 ratio within the site and throughout the community. This will help to meet the community's forestry goals and objectives and reduce the environmental impacts to the surrounding natural resources. To learn more, please contact our offices at (302) 349-5754.

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 Karen Horton 739-4263

The proposal is a site plan review for 219 residential units on 72 acres located on the Southeast intersection of Central Church Road and Kenton Road near Dover. According to the State Strategies Map, the proposal is located in an Investment Level 2 area. As a general planning practice, DSHA encourages 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. Furthermore, DSHA encourages residential development in Level 1 and 2 areas that is affordable to first time homebuyers. DSHA supports the fact that this proposal targets the full range of incomes including first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA shows the median income price in Kent County to be $235,000. However, families earning respectively 80%-100% of Kent County's median income only qualify for mortgages of $138,205-$176,741, thus creating an affordability gap of $96,795-$58,259. The provision of units within reach of families earning at least 80%-100% of Kent County's median income would help increase housing opportunities for first time homebuyers.

Department of Education – Contact: John Marinucci 739-4658

1. This proposed development is within the Capital School District boundaries.
2. DOE offers the following comments on behalf of the Capital School District.
3. Using the DOE standard formula, this development will generate an estimated 110 students.
4. DOE records indicate that the Capital School Districts' *elementary schools **are** at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
5. DOE records indicate that the Capital School Districts' *secondary schools **are** at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.
6. This development will create additional elementary and secondary student population growth which will further compound the existing shortage of space.
7. The developer is strongly encouraged to contact the Capital School District Administration to address the issue of school over-crowding that this development will exacerbate.
8. DOE requests developer work with the Capital 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 that 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,

Constance C. Holland

Constance C. Holland, AICP
Director

CC: Kent County