December 13, 2006
Comments Addressed December 21, 2006

Mr. Kevin Smith
Kercher Engineering, Inc.
413 East Market Street
Georgetown, DE 19947

RE: PLUS review – PLUS 2006-11-02; Evergreen

Dear Mr. Smith:

Thank you for meeting with State agency planners on November 21, 2006 to discuss the proposed plans for the Evergreen project to be located on the west side of Sussex County Road 361, south of Sussex County Road 368.

According to the information received, you are seeking site plan approval for 49 residential units on 16 acres located in an Investment Level 3.

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.

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

- The Office of State Planning and Coordination acknowledges that the proposed development is located within an Investment Level 3 area. These areas are where we anticipate growth to occur or where growth is occurring. In addition, this site falls within the Environmentally Sensitive Developing Area within Sussex County comprehensive plan. This office has no objections to the development of this property in accordance with County codes and ordinances. With that said, the developer should keep in mind that it is located in an Environmentally Sensitive Developing Area and should design a site plan that recognizes the environmental or cultural resources valuable to this region of Sussex County. The design/construction will keep in mind the environmental and cultural resources in this region.

Street Design and Transportation

- Parker House Road is a collector road. 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. The plan presented satisfies this requirement. No response required, shown on plans.

- DelDOT will also require the construction of a 10-foot wide shared use path in a 15-foot wide permanent easement across the frontage of the site. The plan presented satisfies this requirement. No response required, shown on plans.

- DelDOT understands that none of the three storm water management areas proposed along Parker House Road would connect into the drainage system in the right-of-way. If that changes, the developer will need to contact the Subdivision Manager for Sussex County, Mr. John Fiori, to discuss the conditions under which a connection might be acceptable. DELDOT will be notified if stormwater management discharges into their right-of-way.

- The subdivision entrance is proposed for the outside of a curve. While sight distance appears to be acceptable from the material presented, it will need to be checked. Sight distance will be shown on the entrance plans, if the project

receives preliminary approval.

- DelDOT recommends that sidewalks be provided within the development to promote walking for short trips, and to provide better pedestrian safety within the development, for children and the elderly in particular. If required by Planning & Zoning a sidewalk will be provided, if not required by Planning & Zoning, a sidewalk will not be provided.

Natural and Cultural Resources

- This project is within the Environmentally Sensitive Developing Area, will result in forest loss, has inadequate wetland buffers, and has the potential to negatively affect a State Wildlife Area which is publicly owned land. The applicant claims no environmental impacts (question #27), yet an important woodlot is going to be converted into a 'residential woods', there is disturbance within 100 feet of wetlands, and there is no open space other than that which is designated for stormwater management or waste water disposal. For all of the reasons stated above, DNREC encourages the landowner to consider preservation rather than development and many new incentive-based programs are available to private landowners through our agency. We have suggested that the developer place covenants and restrictions of forest removal.

- Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners. No lots contain any wetlands. The developer has not provided a buffer from the wetlands.

- DNREC Water Supply Section recommends that that portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover. If restrictions are in place for forest removal, the development should not exceed 20% impervious cover within the excellent groundwater recharge area.

- The engineer is encouraged to meet with downstream landowners to obtain their concerns of current drainage as well as the additional drainage impact this project will have on the area. Please notify downstream landowners if there will be a change in the volume of water released on them. If Planning & Zoning approves

the preliminary subdivision plan, we will notify the downstream landowners if there is any increase in runoff.

- The Drainage Program does not support the removal of trees for the creation of stormwater management areas. However, the Drainage Program recognizes that tree removal is unavoidable in some cases. Where practical, plant native trees and shrubs to compensate for the loss of nutrient uptake and stormwater absorption the removed trees provided. Noted.

- The Drainage Program requests a 15-foot side yard setback on all lots with a drainage easement on the side unless otherwise specified. 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. A 15-foot drainage easement will be established where necessary.

- 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 basins. If catch basins are required on private property, a 10 foot easement will be established.

- DNEC has never surveyed this site; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at this project site. In order to provide more informed comments and to make recommendations, the program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and unique habitats and to ensure that the project is environmentally sensitive. The client has no objection to DNREC surveying this property as necessary.

- The proposed project is across Parker House Road from Assawoman Wildlife Area, a State Wildlife Area managed by the Division of Fish and Wildlife, DNREC. The developer will need to contact the Regional Wildlife Biologist, Rob Gano at (302-539-3160) to discuss this project. The State is concerned that the quantity and quality of wildlife habitat in the State Wildlife Area, particularly near the border, might be negatively affected by this development. Specifically:

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

Office of State Planning Coordination – Contact: Bryan Hall 739-3090

The Office of State Planning and Coordination acknowledges that the proposed development is located within an Investment Level 3 area. These areas are where we anticipate growth to occur or where growth is occurring. In addition, this site falls within the Environmentally Sensitive Developing Area within Sussex County comprehensive plan. This office has no objections to the development of this property in accordance with County codes and ordinances. With that said, the developer should keep in mind that it is located in an Environmentally Sensitive Developing Area and should design a site plan that recognizes the environmental or cultural resources valuable to this region of Sussex County. The design/construction will keep in mind the environmental and cultural resources in this region.

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

Nothing is known within this parcel. There is only a low potential for prehistoric-period archaeological sites here, due to the wet nature of the soils. Beers Atlas of 1868 does show the Mrs. Wharton House in the southern triangle of the parcel. This house appears on the 1938 USDA photograph. However, by the 1991 aerial photograph, the house has been demolished and some kind of industrial buildings appear on the parcel. These have also been demolished and reconfigured by the 2002 aerial photograph. There is not much potential for discovering any undisturbed historic-period archaeological resources here, and the area immediately adjacent to the Mrs. Wharton House has been developed already. I do not think there is much potential for an unmarked family cemetery within the project area. However, the developers should be aware of Delaware's Unmarked Human Remains Act of 1987 and understand their responsibility should any human remains be found during development of the property. Faye Stocum is the contact person for this program, and can be reached at 302-736-7400, should the developers have any questions. The developer has no objection to any research conducted on the property.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

1) Parker House Road is a collector road. 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. The plan presented satisfies this requirement. No response required, shown on plans.

2) DelDOT will also require the construction of a 10-foot wide shared use path

in a 15-foot wide permanent easement across the frontage of the site. The plan presented satisfies this requirement. No response required, shown on plans.

3) DelDOT understands that none of the three storm water management areas proposed along Parker House Road would connect into the drainage system in the right-of-way. If that changes, the developer will need to contact the Subdivision Manager for Sussex County, Mr. John Fiori, to discuss the conditions under which a connection might be acceptable. DELDOT will be notified if stormwater management discharges into their right-of-way.

4) The subdivision entrance is proposed for the outside of a curve. While sight distance appears to be acceptable from the material presented, it will need to be checked. Sight distance will be shown on the entrance plans, if the project receives preliminary approval.

5) DelDOT recommends that sidewalks be provided within the development to promote walking for short trips, and to provide better pedestrian safety within the development, for children and the elderly in particular. . If required by Planning & Zoning a sidewalk will be provided, if not required by Planning & Zoning, a sidewalk will not be provided.

6) The developer's site engineer should contact Mr. Fiori regarding specific requirements for entrance improvements. Mr. Fiori may be reached at (302) 760-2157. If preliminary approval is granted, we will contact John Fiori.

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

General Statement

This project is within the Environmentally Sensitive Developing Area, will result in forest loss, has inadequate wetland buffers, and has the potential to negatively affect a State Wildlife Area which is publicly owned land. The applicant claims no environmental impacts (question #27), yet an important woodlot is going to be converted into a 'residential woods', there is disturbance within 100 feet of wetlands, and there is no open space other than that which is designated for stormwater management or waste water disposal. For all of the reasons stated above, DNREC encourages the landowner to consider preservation rather than development and many new incentive-based programs are available to private landowners through our agency. Please contact Shelly Tovell,

Division of Fish and Wildlife, at (302) 653-2880 if the landowner(s) is interested in more information. We have suggested that the developer place covenants and restrictions of forest removal

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.

We have suggested that the developer place covenants and restrictions of forest removal.

Soils

According to the Sussex County soil survey mapping update, Hammonton and Mullica were mapped on the subject parcel. Hammonton is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Mullica is a very poorly-drained wetland associated (hydric) soil that has severe limitations for development. Most of the soils (estimated 80%) are mapped as Mullica.
As mentioned previously, since a significant portion of the mapped soils on subject parcel(s) are mapped as hydric (estimated 80%). Hydric soils typically have a seasonal high water table at or near the soil surface (within one-foot of soil surface or less). 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 probabilities from surface water runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks). Stormwater management will be addressed, if we receive preliminary approval. If granted, we will have to address this issue prior to receiving approval from SCD/DNREC.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine forested wetlands on this parcel. While PLUS materials indicate that there will not be direct impacts to these wetlands, it is important to note that these wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners. We have suggested that the developer place covenants and restrictions of forest removal. No lots contain any wetlands. The developer has not provided a buffer from the wetlands.

Impacts to Palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. 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. There will be impacts to the wetlands that will require any permits for the Army Corps.

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. If necessary, we will schedule a meeting.

Impervious Cover

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 36 percent. However, given the scope and density of this project this estimate is likely to be **low**. The applicant's apparent use of natural areas (forests,

wetlands or buffers) or functional amenity areas (stormwater management) for meeting the County's open space requirements artificially lowers the amount of this project's post-development projection of surface imperviousness, ultimately underestimating its environmental impacts. Furthermore, the applicant should also realize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks, and roads) and their extent should be accounted for when calculating surface imperviousness. It was not clear from the information submitted whether all of these factors were comprehensively considered in the applicant's calculation. It is strongly recommended that the finalized impervious surface calculation reflect all of these concerns. Failure to do so will result in an underestimate of this project's actual environmental impacts. If restrictions are in place for forest removal, the development should not exceed 20% impervious cover within the excellent groundwater recharge area.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its 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 some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness. If BMP's can be used, they will be utilized. Most projects do not allow for there use, due to the quanity of water. BMP's do not address quanity of water but only address quality.

ERES Waters

This project is located adjacent to receiving waters of Little Assawoman Bay 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 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Moreover, provisions defined in subsection 5.6.3.5 of same section, specially authorize the Department to mandate BMPs to meet standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants. If BMP's can be used, they will be utilized. Most projects do not allow for there use, due to the quanity of water. BMP's do not address quanity of water but only address quality.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Little Assawoman Bay 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. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the Little Assawoman watershed, the watershed in which this project is located, nutrient reductions" of 40 percent will be required for nitrogen and phosphorus. TMDL's should be adequately addressed, if granted preliminary approval.

Compliance with TMDLs through the PCS

As stated above Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Little Assawoman Watershed. The TMDL calls for a 40% reduction in nitrogen and phosphorus from baseline conditions. A Pollution Control Strategy (PCS) will provide the regulatory framework for achieving them. 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, increasing passive, wooded open space, reducing forest cover removal and the use of innovative stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool. TMDL's should be adequately addressed, if granted preliminary approval.

Water Resource Protection Areas

The DNREC Water Supply Section has determined that a significant portion of the proposed development falls within an excellent ground-water recharge area (see following map and attached map). The review did not find any wellhead protection areas.

Excellent recharge areas are near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. The Delaware Geological Survey Report of Investigations No. 66 was published in 2004. This report, along with the accompanying maps were part of the "Shaping Delaware's

Future" (7 Del. Code, Chapter 60, Subchapter VI, § 6082, 2001). The intent of the project was to identify areas of excellent recharge to protect them as critical areas. Excellent recharge areas are near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. The Report states that the recharge potential "map categories are indicators of how fast contaminants will move and how much water may become contaminated" (Andres, 2004, pg 1).

The proposed development would change the total impervious cover from 0% to approximately 35.7%. These numbers are based on the total area and are not specific to the excellent recharge area. The developer on the PLUS application provided the numbers.

DNREC Water Supply Section recommends that that portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover (Kauffman, 2005). The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies.

Further, some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within these areas, provided the applicant submits an environmental assessment recommending a climatic water budget and facilities to augment recharge (Thornthwaite, 1957). The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis. Commonly, the applicant offsets the loss of recharge due to impervious cover by constructing recharge basins that convey relatively pure rooftop runoff for infiltration to ground water. If restrictions are in place for forest removal, the development should not exceed 20% impervious cover within the excellent groundwater recharge area.

Map of Evergreen (PLUS 2006-11-02). Excellent ground-water recharge potential areas are highlighted in green.

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

Delaware Department of Natural Resources and Environmental Control, 2005, Source Water Protection Guidance Manual for the Local Governments of Delaware, p. 144.
http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_final.pdf

Delaware Code Annotated (2001). Title 7 Chapter 60 Subchapter VI, § 6083 (2006). Adoption of source water assessment, wellhead protection and excellent ground-water recharge potential areas by the Governor's Cabinet Committee on State Planning Issues. [Electronic version]. Retrieved November 8, 2006, from
http://www.delcode.state.de.us/title7/c060/sc06/index.htm#TopOfPage

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.
Listed as: "Supplement 1 – Groundwater Recharge Design Methodology"
http://www.wr.udel.edu/swaphome/Publications/SWPguidancemanual.html

Climatic Water Budget
Thornthwaite, C. W. and Mather, J. R., 1957, Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance: Drexel Institute of Technology, Laboratory of Climatology, Volume x, Number 3

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 Public Water Supply (a.k.a. Tidewater Utilities) under Certificate of Public Convenience and Necessity 83-W-6. Noted.

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.

If necessary, a permit would be obtained.

Sediment and Erosion Control/Stormwater Management

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 the Sussex Conservation District. Contact the Sussex Conservation District at (302) 856-7219 for details regarding submittal requirements and fees. If granted preliminary approval, SCD will be given construction plans.

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

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 and forested areas, should be considered in the overall design of the project as a stormwater management technique. Consider deed restrictions to protect forested areas on lots from being completely cleared in an effort to mitigate the increase in runoff from developed areas. Green Technology BMPs must be given first consideration for stormwater quality management. BMP's if applicable would be used, we have recommended deed restrictions to protect the forested areas.

Each stormwater management facility should have an adequate outlet for release of stormwater. The capacity of the existing ditch on the west side of the site should be verified prior to discharging additional volume. A downstream analysis may be necessary. Offsite improvements may be necessary to provide an adequate outlet for release of stormwater from the site. Stormwater facility would be design will a proper outfall source and if any off site improvements are necessary, all proper agencies would be notified.

It is strongly recommended that you contact the reviewing agency to schedule a preliminary 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. If granted preliminary approval, a preliminary meeting would be scheduled.

Drainage

The Drainage Program requests that the engineer take precautions to ensure that the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to construction. The engineer is encouraged to meet with downstream landowners to obtain their concerns of current drainage as well as the additional drainage impact this project will have on the area. Please notify downstream landowners if there will be a change in the volume of water released on them. If necessary, all landowner's that may be affected by increased quantities of runoff would be notified.

The Drainage Program does not support the removal of trees for the creation of stormwater management areas. However, the Drainage Program recognizes that tree removal is unavoidable in some cases. Where practical, plant native trees and shrubs to compensate for the loss of nutrient uptake and stormwater absorption the removed trees provided. Noted.

The Drainage Program does not have a clear understanding how stormwater will convey to the stormwater management areas. The Drainage Program requests that the routing of major stormwater pipes through yards be prohibited. A detailed stormwater plan has not been developed. If granted preliminary approval, we will refrain from routing major stormwater pipes through yards.

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 unless otherwise specified. 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. A 15-foot drainage easement will be established where necessary.

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. If catch basins are required on private property, a 10 foot easement will be established.

Record all drainage easements on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. All easements will be record, if granted approval.

Open Space

In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Doing so will provide wildlife habitat and it will create recreational opportunities for residents. 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. Natural habitat implementation efforts should be targeted to open space areas adjacent to forests and wetlands. Natural habitat could consist of reforesting portions of open space or establishing meadow 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. The developer is encouraged to review "Community Spaces, Natural Places: A guide to restoration, management, and maintenance of community open space". This document provides a reference of practical and successful open space management techniques that emphasize natural landscape alternatives other than turf grass management. The guidebook is available online at: http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/dcmp/.

In addition, a detailed open space management plan should be recorded on the record plan. This plan should outline how to manage each open space area, as well as invasive species. 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. This should be outlined in the deed restrictions, we will recommend this to the developer.

Site Visit Request

DNEC has never surveyed this site; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at this project site. In order to provide more informed comments and to make recommendations, the program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and 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 and add to the State database. Please contact Bill McAvoy or Kitt Heckscher at (302) 653-2880 to set up a site visit. The developer will allow a site visit.

Assawoman State Wildlife Area

The proposed project is across Parker House Road from Assawoman Wildlife Area, a State Wildlife Area managed by the Division of Fish and Wildlife, DNREC. The developer will need to contact the Regional Wildlife Biologist, Rob Gano at (302-539-3160) to discuss this project. The State is concerned that the quantity and quality of wildlife habitat in the State Wildlife Area, particularly near the border, might be negatively affected by this development. Specifically:

1. The project area contains the last remaining undisturbed block of woodlands west of the McCabe Tract at Assawoman. Wildlife has been documented frequently crossing the road west to east traveling into the wildlife area from this property. Although lands west of the project area have already been disturbed (developed), this property still provides an important wildlife corridor. Noted.

2. The entrance road for this development is directly across the road from the Wildlife area and we strongly request that they keep the entrance as far north on the property as possible. In addition to introducing human disturbance to the wildlife area, it is anticipated that there will be pressure to alter established management methods used at the wildlife area. Habitat management is extremely important to the health and use of the wildlife area. Herbicide control of invasive

plant species and controlled burning of grass stands are important tools used to maintain wildlife habitat. If granted approval, we will attempt to move the entrance to the north.

3. Hunting is a legal activity that takes place on the wildlife area and the developer should be aware of it and make this information available to potential home owners. The parking lot for deer stands is across the road from the proposed development and is often used by hunters in the early morning hours. In addition, residents will be subject to the noise of fire arms and noise while pursing game. Hunting is an established recreational opportunity offered on this publicly owned land and we are concerned that there will be pressure to alter activities because of this new development. This will be need to addressed in the deed restrictions.

4. The developer and potential residents should be aware that the use of ATV's is illegal on the wildlife area and has been a problem at other wildlife areas near residential developments. Not only do ATV's destroy habitat, but their use could become an ongoing enforcement issue. Noted.

5. During construction, measures should be taken so that on-site construction trash does not blow onto the Wildlife Area. In addition, planting a wind break would be useful in preventing residential trash from blowing onto the wildlife area. Residents should be aware that dumping trash on wildlife areas is illegal. Noted.

6. To buffer the State Wildlife Area from this private development, a 100-foot wooded buffer should be planted between the lot lines (rear of lot) and Parker House Road. The houses should also be constructed to face away from Parker House Road and the McCabe Tract. This buffer can not be established.

7. The McCabe Tract is enrolled in CREP under the CP-23 wetlands restoration option. Two major wetland complexes have been created on 22 acres, plus grassland (2.5 acres of warm season grass plantings) and hardwood tree (1600 trees in tree shelters) plantings as a buffer. The wetlands are starting to establish and support a variety of wildlife species. Noted.

Mosquito Control

This development is within an area that contains large tracts of forested freshwater wetlands which harbor mosquitoes. When developments are placed in these areas, it can often lead to increased demands for mosquito control services, going beyond what DNREC's Mosquito Control Section currently has the budget or resources to provide. Adverse impacts upon the State's allocation of public funds for mosquito control services

must be realistically recognized as the frequent consequence of approving these types of development projects; and State and local governments should then be prepared to deal with the increased budget demands for mosquito control services. Additionally, even though the EPA has scientifically determined that EPA-registered mosquito control insecticides can be applied "without posing any unreasonable risks to human health, wildlife or the environment" (when used in accordance with all product label instructions), avoiding or reducing the use of such pesticides should be employed whenever possible. Limiting development that is too close to wetlands will aide in achieving a reduction in pesticide use. Noted.

Plant Rescue

Since forested and/or wetland areas 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). I will notify the developer.

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. Noted.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 3.8 tons (7,521.0 pounds) per year of VOC (volatile organic compounds), 3.1 tons (6,226.9 pounds) per year of NOx (nitrogen oxides), 2.3 tons (4,594.3 pounds) per year of SO2 (sulfur dioxide), 0.2 ton (409.0 pounds) per year of fine particulates and 314.6 tons (629,121.1 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 1.5 tons

(3,033.6 pounds) per year of VOC (volatile organic compounds), 0.2 ton (333.8 pounds) per year of NOx (nitrogen oxides), 0.1 ton (277.0 pounds) per year of SO2 (sulfur dioxide), 0.2 ton (357.4 pounds) per year of fine particulates and 6.1 tons (12,297.4 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 0.6 tons (1,202.3 pounds) per year of NOx (nitrogen oxides), 2.1 tons (4,181.9 pounds) per year of SO2 (sulfur dioxide) and 308.4 tons (616,823.8 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	3.8	3.1	2.3	0.2	314.6
Residential	1.5	0.2	0.1	0.2	6.1
Electrical Power		0.6	2.1		308.4
TOTAL	5.3	3.9	4.5	0.4	629.1

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 0.6 tons of nitrogen oxides per year and 2.1 tons of sulfur dioxide per year.

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

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

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

The Energy office in DNREC is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes. I will recommend that the developer use Energy Star equipment and to try to make the homes energy efficient.

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. I will recommend to the developer.

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 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 Parker House Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved

radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.

- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

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

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

d. **Required Notes**:

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

If granted approval, we will submit all the necessary site plans with the information as necessary.

Department of Agriculture - Contact: Scott Blaier 698-4500

The Delaware Department of Agriculture has no objections to the proposed application for rezoning. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas in Investment Levels 3. Noted.

A large portion of the site has been designated as having "excellent" ground-water recharge potential. DNREC has mapped all ground-water recharge-potential recharge areas for the state, and an "excellent" rating designates an area as having important groundwater recharge qualities. Noted.

Senate Bill 119, enacted by the 141st General Assembly in June of 2001, requires the counties and municipalities with over 2,000 people to adopt as part of the update and implementation of their 2007 comprehensive land use plans, areas delineating excellent ground-water recharge potential areas. Furthermore, the counties and municipalities are

required to adopt regulations by December 31, 2007 governing land uses within those areas to preserve ground-water quality and quantity. Noted.

Maintaining pervious cover in excellent and good recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware. The developer should make every effort to protect and maintain valuable ground-water recharge potential areas. Noted.

This site also overlaps with the State's Green Infrastructure Investment Strategy Plan. The Forest and Natural Areas layers are present on the entire site. These designations have valuable environmental characteristics and functions which are discussed in Governor Minner's Executive Order Number 61. They should be preserved as such, and not developed for residential use. Noted.

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.

We have asked to developer to put forest preservation in the deed restrictions.

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. At this point, natural gas has not been investigated for this site.

Delaware State Housing Authority – Contact Vicki Walsh 739-4263

The proposal is for a site plan review of 49 residential units on 16 acres located on the west side of Parker House Road, south of Beaver Dam Road near Ocean View. According to the *State Strategies Map*, the proposal is located in an Investment Level 3 area and an Environmentally Sensitive Developing area. As a general planning practice, DSHA encourages residential development inside growth zones and where residents will have proximity to services, markets, and employment opportunities. Furthermore, the proposal targets units for first time homebuyers. According to the most recent real estate data collected by DSHA, the average home price in Sussex County is $236,000. However, families earning respectively 100% of Sussex County's median income only qualify for mortgages of $171,216, thus creating an affordability gap of $64,784. The provision of units within reach of families earning at least 100% of Sussex County's median income will ensure housing that is affordable for first time homebuyers. Furthermore, the proposal targets units for first time homebuyers.

To facilitate the units targeted for first time homebuyers, we encourage the developer to apply for Sussex County's Moderately Price Housing Unit Program which provides the following incentives to developers who provide a percentage of units affordable to Sussex County residents of modest income:

- An expedited review;
- Waivers of some or all County fees associated with the County approval process;
- Density bonus.

NOTE: Proposals must be located in Town Centers, Developing Areas, and Environmentally Sensitive Areas according to the County's most recent certified Comprehensive Plan.

A Request for Proposal (RFP) process has been established to select initial program participants. The developer is encouraged to call William C. Lecates, Director of Sussex County's Community Development and Housing Division at (302) 855-7777 to learn more about the RFP application process. At this point, no price points have been set, but I don not believe the developer plans to place this project under the affordable housing guidelines.

Department of Education – Contact: John Marinucci 739-4658

DOE offers the following comments on behalf of the Indian River School District.

1. Using the DOE standard formula, this development will generate an estimated 25 students.
2. DOE records indicate that the Indian River School Districts' *elementary schools* ***are at or beyond*** *100% of current capacity* based on September 30, 2005 elementary enrollment.
3. DOE records indicate that the Indian River School Districts' *secondary schools* ***are not at or beyond*** *100% of current capacity* based on September 30, 2005 secondary enrollment. In multiple correspondences from the Indian River School District administration, the district asserts that while the Indian River High School has capacity, the Indian River Middle Schools' student population exceeds student capacity.
4. This development will create additional elementary school and middle school student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Indian River School District Administration to address the issue of elementary school over-crowding that this development will exacerbate.
5. DOE requests developer work with the Indian River School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district. If granted approval, we will work with the DOE to attempt to alleviate any concerns with the project.

Sussex County – Contact: Richard Kautz 855-7878

Per page 15 of the Comprehensive Plan, "any increased density by rezoning should only be permitted with proper environmental safeguards." Because this project is situated in an Environmentally Sensitive Development Area, the required report should include how this requirement and the PLUS comments have been addressed and how the plan has been revised accordingly. This report should be prepared and given to the commission prior to the meeting.

With the small lot size the Planning and Zoning Commission may require sidewalks. Noted.

The State Wetlands map indicates the possibility of wetlands impacting the location of proposed subdivision lots and roads. Therefore a jurisdictional determination letter should be provided to support the proposed design for that area and that the lot layout does not contain any wetlands. This letter should be obtained prior to the request for approval of any final plan. The developer will need to have a JD done, if granted approval by Planning & Zoning.

The Sussex County Engineer Comments:

The project is within the boundaries of the Miller Creek Sanitary Sewer District. There is currently no sewer service to the parcel. The Sussex County Engineering Department requires a connection to the County operated wastewater system. Sussex County has awarded contracts for the construction of the Miller Creek Sanitary Sewer District and construction of the county system is scheduled for the fall of 2007.The proposed development will require a developer installed collection system in accordance with Sussex County's standard requirements and procedures. Surveyors have located a sanitary sewer manhole in the front of the site. We will need to reinvestigate, if granted approval.

There is no gravity collection line adjacent to the parcels. Extension of sewer lines to serve the parcels will be at the developer's expense. The Sussex County Engineer must approve the connection point. A sewer concept plan must be submitted to the Sussex County Engineering Department for review and approval prior to plan submittal. A checklist for preparing Sewer concept plans is attached. Noted.

One-time System Connection charges will apply. Please contact Ms. Denise Burns at 302 855-7719 for additional information on charges.

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