



October 17, 2005

Mr. Jeffrey Franz
Paradise Property
52 Addis Drive
Churchville, PA 18966

RE: PLUS review – PLUS 2005-09-09; Pepper Creek Point

Dear Mr. Franz:

Thank you for meeting with State agency planners on September 28, 2005 to discuss the proposed plans for the Pepper Creek Point project to be located on the south side of Piney Neck Road, east of Dagsboro.

According to the information received, you are seeking site plan approval for 167 new and 2 existing units on 84.5 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 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

- This development is proposed for an Investment Level 4 area according to the *Strategies for State Policies and Spending* and is in the Environmentally Sensitive Developing Area according to the Sussex County Comprehensive Plan. In these areas, we recommend a design that is sensitive to the natural resources on and surrounding the site.

Street Design and Transportation

- Right-of-way dedication will be required along the frontage of Piney Neck Road.
- A paved multi-modal path will be required in a 15-foot-wide permanent easement along the frontage of Piney Neck Road.
- Stub streets should be provided to adjacent properties.
- The developer will be required to improve Piney Neck Road within the limits of the property frontage.

Natural and Cultural Resources

- Vegetated buffers of at least 100 feet should be provided from wetlands and waterbodies, although 300 feet is preferable to protect the habitat along the creek.
- A preliminary evaluation of the project indicates that, as presented, the proposal would likely not meet nitrogen and phosphorous loads required by the TMDL. The project should be redesigned and appropriate BMPs put in place to reduce nutrient loading from the site.
- The northwest corner of the site is within an excellent recharge area. As presented the site plan shows home lots and some open space in this corner. The amount of open space should be increased in this area minimize the impact to the excellent recharge area.
- Clearing of forested areas should be minimized. Clearing trees for a stormwater pond is discouraged because of the function of trees in flood abatement and erosion control.
- The plan, as submitted, shows disconnected open space in the southern portion of the site. The five lots that break up the open space should be moved to provide for a larger contiguous block of open space.

- Because of the project's proximity to the Piney Neck Waste Water Treatment Facility, the Sussex County Engineering Department would prefer to see a connection to the County's wastewater system, rather than a community system operated by a private utility company.

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

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

This development is proposed for an Investment Level 4 area according to the *Strategies for State Policies and Spending* and is in the Environmentally Sensitive Developing Area according to the Sussex County Comprehensive Plan. Based on the extensive data analysis used to develop the *Strategies*, the presence of Investment Level 4 in the Environmentally Sensitive Developing Area is an indication of sensitive natural resources on-site. In this case, forested areas and wetlands on the site influenced the designation as Investment Level 4.

In these areas, we recommend a design that is sensitive to the natural resources on and surrounding the site. Efforts to preserve forested areas and protect the wetlands through vegetated buffers would help in providing a sensitive design. Specific recommendations on efforts that might be undertaken to protect natural resources on and surrounding the site are included in the DNREC comments.

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

The DHCA is not in favor of this project in Investment Level 4, because it will have an adverse effect on the historic agricultural landscape by destruction and on two adjacent historic houses (S-4416 and S-4417) by the introduction of noise and changes to their setting, and will probably result in the destruction of both historic-period and prehistoric-period archaeological sites.

If this project does proceed, they request an opportunity to examine the parcel for archaeological sites before any ground-disturbing work is done. In addition, they recommend that sufficient landscaping be done to screen the view of the development from the historic properties across Piney Neck Rd.

The construction of the boat ramp will probably require a permit from the Army Corps of Engineers, and the developer will then be required, under Sec. 106 of the National Historic Preservation Act of 1966 (as amended), to consult with this office about cultural resources. Depending on the area of effect determined by the Corps, the developer may

be required to hire a consultant to perform an archaeological survey. The DHCA will be happy to assist the developer through the Sec. 106 process.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. With regard to Level 4 areas, the intent of the *Strategies* is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in such areas while avoiding the creation of isolated development areas that cannot be served effectively or efficiently by public transportation, emergency responders, and other public services.

Recognizing that this project is in an Environmentally Sensitive Developing Area, as designated by the *Strategies* and the Sussex County Comprehensive Plan, DelDOT is providing a technical review.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans. They encourage the use of transfer of development rights where this growth management tool is available.

DelDOT technical comments are as follows:

- 1) DelDOT's US 113 North-South Study is presently evaluating alternative alignments for a limited access highway between Milford and the Maryland line at Selbyville. They recommend that the developer contact the manager for that study, Mr. Monroe Hite, for more information regarding the study and the alignments under consideration. He may be reached at (302) 760-2120.
- 2) Piney Neck Road is classified as a local road. Local roads in Delaware typically have right-of-way widths ranging from 33 to 50 feet. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads. Therefore DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- 3) DelDOT will also require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the site.

- 4) It is recommended that stub streets be provided to the adjacent properties to the east and west. In the case of the property to the west, this can be accomplished by a slight shift of the cul-de-sac proposed for the southwest corner of the development. Although we did not mention it at the PLUS meeting, it would be desirable to place the stub street to the east at the north end of the property, where it could also serve the adjoining strip lots along Piney Neck Road.
- 5) The developer will be required to improve Piney Neck Road within the limits of the property frontage. Those improvements consist of an overlay of the existing road and widening to a 10-foot lane and a five-foot shoulder.
- 6) The developer's site engineer should contact our Subdivision Manager for Sussex County, Mr. John Fiori, regarding our specific requirements for the design of the road improvements and site entrance. Mr. Fiori may be reached at (302) 760-2260.

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

Soils

According to the soil survey update, Fort Mott, Henlopen, Evesboro, Downer, Manahawkin muck, and Broadkill mucky silt were mapped on subject parcel. Fort-Mott, Henlopen, and Evesboro, are well to excessively-well drained upland soils that have some limitations associated with rapidly permeable sandy surface and/or sandy subsoils which have little or no nutrient adsorptive capacity. Downer is well-drained upland soil that, generally, has few limitations for development. Manahawkin muck and Broadkill mucky silt loam are very poorly-drained wetland associated (hydric) soils that have severe limitations for development.

Wetlands

According to Statewide Wetland Mapping Project (SWMP) mapping, tidally-influenced estuarine scrub-shrub emergent wetlands were mapped along the southern boundary of subject parcel while nontidal palustrine forested riparian wetlands were mapped directly adjacent and to the north of said tidal wetlands. SWMP mapping of wetlands closely approximates the occurrence of the aforementioned hydric soils. PLUS materials indicate that a wetlands field delineation has been performed. This delineation should be verified by the U.S. Army Corps of Engineers through the Jurisdictional Determination process.

Impacts to wetlands should be avoided and vegetated buffers of no less than 100 feet should be employed from all wetlands and water bodies. Lots should exclude all wetlands and associated buffers. 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.

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.

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) 739-4691 to schedule a meeting.

Wetland Buffers

Due to the number of developments along this area of Pepper Creek, cumulative impacts to water quality and a loss of riparian habitat is a real concern. In addition, there is an active Bald Eagle nest on the shore of Pepper Creek downstream of the proposed project and this area of the creek serves as a foraging and roosting site. Trees should not be removed along the creek and DNREC strongly recommends maintaining the wetland habitat along the creek as well. The forested buffer should be maintained to a width of at least 100 feet, although 300 feet is preferred. This forested buffer zone should be placed in permanent conservation so that future clearing is less likely to occur.

Buffers are an integral component of aquatic and wetland habitats, reducing the amount of sediments, pollutants, and other non-point source material that may affect the function and integrity of habitat and the condition and survivability of aquatic organisms. Forested buffers also serve as habitat for many terrestrial species that are dependent on aquatic and wetlands habitats for a portion of their annual life cycle.

ERES Waters

This project is located adjacent to receiving waters of Chesapeake 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 11.5 of Delaware's "Surface Water Quality Standards" (as amended August 11, 1999), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of nutrient runoff through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 11.5(e) of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree practicable, or where attainable, a standard requiring no discharge of pollutants.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays 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. This project is located in the **high** nutrient reduction area requiring an 85 and 65 percent reduction in nitrogen and phosphorus, respectively. Currently DNREC requests that a full nutrient budget be calculated to ensure compliance. The applicant should be made aware that the inclusion of stormwater management, wastewater treatment, buffers and wetlands as metrics for open space calculations - may understate the actual TMDL nutrient loading and, subsequently, the actual nutrient runoff as calculated from the nutrient budget protocol.

Wastewater and TMDL Compliance through the PCS

Significant nitrogen and phosphorus loading reductions must be realized from all sources, including community onsite wastewater systems. The Department has developed performance standards for on-site wastewater treatment and disposal systems that have been presented as a part of the proposed Pollution Control Strategy (PCS). Upon promulgation of the proposed PCS regulation, new and existing wastewater disposal systems will be required to significantly reduce nitrogen and phosphorus loading in the

Inland Bays watershed. Such reductions – known as “Performance Standards” - will require (where applicable) nitrogen and phosphorus loading not exceed average annual discharge concentration levels of 5 and 2 mg/l for nitrogen and phosphorus, respectively.

The proposed pollution control strategy will also require the completion of a nutrient budget for the proposed project in order to estimate how TMDL nutrient loads will change with the development of this parcel. The protocol for this nutrient budget is a computer-based model that considers a variety of land use scenarios in combination or absence of BMPs. Based on a preliminary evaluation of this project using this model, the development as currently conceived does not appear to meet TMDL reduction requirements. The applicant is encouraged to consider some of the above-suggested BMPs along with other redesign changes that they could use to satisfy these reductions. It is suggested that the applicant verify their project’s compliance with the specified TMDL loading rates by running the model themselves. Please contact Lyle Jones of the Watershed Assessment Section at 739-9939 for the acceptable model protocol.

Impervious Cover

Since residential development significantly increases the amount of impervious cover - leading to large volumes of contaminant-laden runoff which ultimately drain into streams or waterways - the applicant is strongly urged to pursue both natural and constructed Best Management Practices (BMPs) to reduce such impacts. Reducing the amount of impervious surfaces by planting more trees and/or the use of pervious paving surfaces (“pavers”) in lieu of asphalt or concrete, are examples of ways to reduce such impacts. Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline.

Water Resource Protection Areas

The DNREC Water Supply Section has determined that the northwestern corner of the proposed development falls within an area of excellent groundwater recharge (see following map and attached map).

The proposed development would change the total impervious cover from 1% to approximately 25% in proposed development area. The proposed development area impacts the excellent recharge area. The numbers were provided by the developer on the PLUS application.

The northwestern corner of development area is proposed to be single family home lots and some open space in the extreme corner. If possible, the amount of open space in this

area should be increased to decrease the amount of excellent recharge area that is impacted by development.

DNREC Water Supply Section recommends that that portion of the new development within the excellent recharge area not exceed 20% impervious cover. 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 this area.

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

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

and Ground-Water Recharge Design Methodology

http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf.

Pepper Creek Point (PLUS 2005-08-08) with excellent recharge in green and affected parcels outlined in light blue.



Water Supply

The project information sheets indicate that the source of water service to the project is yet to be determined. DNREC records indicate that the project is not located in an area where public water service is available. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

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

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

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

Sediment and Erosion Control/Stormwater Management

Standard Comments:

1. A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.
2. It is strongly recommended that you contact Sussex Conservation District to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and post- development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion.

3. A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to DNREC Division of Soil and Water Conservation along with the \$195 NOI fee prior to plan approval.
4. Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on structural stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique.
5. Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption.
6. Clearly address how Stormwater Quality and Quantity Treatment will be provided. If this project is eligible for a Quantity Waiver, please make the request in the stormwater narrative citing the specific regulation. As of April 11, 2005, stormwater best management practices must also consider, water quality as well as quantity in impaired water bodies. This action will help achieved the required TMDL reductions for the Inland Bays Watershed.
7. Please indicate on the sediment and stormwater management plan who shall be responsible for maintenance of the stormwater management facilities both during construction and after. During the design of the sediment control and stormwater
8. management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.
9. If a stormwater management pond is going to be utilized as a sediment trap/basin during construction it must be designed to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete.
10. All ponds are required to be constructed per Pond Code 378.
11. Please note that if the stormwater facilities will impact wetlands, a permit must be provided to the District prior to receiving approval. Please address.

Site-Specific Comments:

1. Certified Construction Reviewer (CCR) is required for this project.
2. The District will require a phased plan and sequence of construction for this project. DNREC regulations require no more than 20 acres to be disturbed at more time. Please address.
3. Under the DNREC Health and Safety Memo of 2000, all wet ponds are required to have an open space depth of 3 feet or more that comprises 50-75 percent of the area of the pond.
4. Consideration should be made for any adjacent properties during the design of this project, including drainage and erosion/sediment control.
5. Please comply with all new regulations and policies including Stormwater Regulations, Erosion and Sediment Control Handbook, and NRCS Rainfall events for the 2, 10, and 100-year storm events.
6. DNREC is requiring that all projects investigate the use of “Green Technology” such as bioretention and bioswales to treat water quality. District recommends scheduling a preliminary submittal meeting to discuss various options in more detail.

Drainage

The Drainage Section requests all existing ditches on the property be checked for function and cleaned if needed prior to the construction of homes. Wetland permits may be required before cleaning ditches.

The Drainage Section requests that all precautions be taken 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 Section strongly recommends any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. The easement should be of sufficient width to allow for future drainage maintenance as described below.

- Along an open ditch or swale, the Drainage Section recommends a maintenance equipment zone of 25 feet measured from the top of bank on the maintenance side, and a 10-foot setback zone measured from top of bank on the non-maintenance side. These zones should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be native species spaced to allow for drainage maintenance at maturity. Trees should not be planted within 5 feet of the top of ditch to avoid future blockages from roots.
- Along a stormwater pipe, the Drainage Section recommends a maintenance equipment zone of 15 feet on each side of the pipe as measured from the pipe centerline. This zone should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be spaced to allow for drainage maintenance at maturity.

The Drainage Section recommends any drainage/utility easement owned by an individual landowner should not have structures, decks, buildings, sheds, kennels, fences or trees within the drainage easement to allow for future drainage maintenance.

Rare Species

DNREC has not surveyed these parcels, therefore, a review of their database indicates that there are currently no records of state-rare or federally listed plants, animals or natural communities at or adjacent to this project site. As a result, at present this project does not lie within a State Natural Heritage Site, nor does it lie within a Delaware National Estuarine Research Reserve, which are two of the criteria used to determine the presence of Critical Resource Waters. The final decision regarding Critical Resource Waters – if this is an issue – will be made by the U.S. Army Corps of Engineers (ACOE). The information above will aid ACOE in their determination.

Forest Preservation

Research has consistently shown that the clearing or subdividing a larger continuous forest into smaller fragments or blocks (fragmentation) – such as proposed in this project

– usually results in substantial degradation of water and habitat quality within a given watershed. Since deforestation and its impacts are cumulative at the watershed scale, efforts to protect the remaining forest remnants is essential for maintaining the watershed’s environmental integrity. The PLUS materials indicate that 10 acres of forestland will be removed for this project. The Watershed Assessment Section recommends that the applicant redesign the project with greater emphasis on forest cover retention.

First of all, reducing the number of lots and infrastructure should be considered. Lot lines should be removed out of the wooded areas as subsequent landowner activities (clearing for sheds, play sets, swimming pools) would result in additional clearing. This is especially important in the southern portion of the site plan where the woods border wetlands.

Secondly, there are several areas of disconnected ‘open space’ in the southern area of the site plan. If the five lots that separate these two areas are removed, a larger connected area of open space could be created. Larger, continuous areas of forest are more beneficial to wildlife than small, fragmented areas. Forest fragmentation separates wildlife populations, increases road mortality, and increases “edge effects” that leave many forest dwelling species vulnerable to predation and allows the infiltration of invasive species.

Thirdly, there is a stormwater management pond in the plan that will have to be created by removing trees. Due to the function of trees in erosion control and flood abatement it does not make sense to remove trees for stormwater management facilities. If ponds are going to be part of the site plan, then they should be located in areas that are already cleared or a different method of flood control should be utilized.

Lastly, if trees are still going to be removed despite recommendations to the contrary, tree removal should not occur April 1st to July 31st to minimize impacts to wildlife species that utilize this habitat for nesting.

Nuisance Waterfowl

Stormwater management ponds that remain in the site plan may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the

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

Recreation

The Division of Parks and Recreation conducted a telephone survey of Delaware residents to gather information on outdoor recreation patterns and preferences as well as other information on their landscape perception. These findings are the foundation of the 2003-2008 Statewide Comprehensive Outdoor Recreation Plan (SCORP) providing guidance for investments in needed outdoor recreation facilities. The high facility needs in Eastern Sussex County are Walking and Jogging, Bike Paths and Fishing Areas. The moderate facility needs are Picnic Areas, Skate Facilities, Canoe/Kayak Access, Hiking Trails, Swimming Pools, Playgrounds, Soccer Fields, Tennis Courts, Power Boat Access and Baseball/Softball Fields. Consideration should be given to incorporate some of these recreation opportunities into the project. For additional information about the outdoor recreation priorities, contact Bob Ehemann at 739-9235.

DNREC recommends that sidewalks be built fronting at least one side of residential streets and stub streets. A complete system of sidewalks will: 1) fulfill the recreation need for walking and biking facilities, 2) provide opportunities for neighbors to interact in the community, and 3) facilitate safe, convenient off-road access to neighboring communities, parks, public mass transit stops, schools, stores, work, etc.

Open space has varying functions and may include both active recreation and natural resource conservation areas. Examples of conservation space include stream beds, floodplains, forest land, and wildlife habitat. Protecting the area along Pepper Creek will protect natural resources while enhancing community aesthetics. The developer should investigate dedicating the area along Pepper Creek as a Nature Preserve through a conservation easement or donation of land. For more information, please contact Ron Vickers, Office of Nature Preserves, at 739-9235.

Solid Waste

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

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 12.8 tons (25,632.8 pounds) per year of VOC (volatile organic compounds), 10.6 tons (21,222.2 pounds) per year of NO_x (nitrogen oxides), 7.8 tons (15,658.1 pounds) per year of SO₂ (sulfur dioxide), 0.7 ton (1,393.8 pounds) per year of fine particulates and 1,072.1 tons (2,144,147.5 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 5.2 tons (10,338.9 pounds) per year of VOC (volatile organic compounds), 0.6 ton (1,137.6 pounds) per year of NO_x (nitrogen oxides), 0.5 ton (944.0 pounds) per year of SO₂ (sulfur dioxide), 0.6 ton (1,218.2 pounds) per year of fine particulates and 21.0 tons (41,911.4 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 2.0 tons (4,097.6 pounds) per year of NO_x (nitrogen oxides), 7.1 tons (14,252.4 pounds) per year of SO₂ (sulfur dioxide) and 1,051.1 tons (2,102,236.1 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	12.8	10.6	7.8	0.7	1072.1
Residential	5.2	0.6	0.5	0.6	21.0
Electrical Power		2.0	7.1		1051.1
TOTAL	18.0	13.2	15.4	1.3	2144.2

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 2.0 tons of nitrogen oxides per year and 7.1 tons of sulfur dioxide per year.

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

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

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

The DNREC Energy Office 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. We highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They 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 and links to mass transport system, and fund a lawnmower exchange program for their new occupants.

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:**
 - Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Treatment)

- Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly)
- 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. (One & Two- Family Dwelling)
- Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

b. **Fire Protection Features:**

- All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed.
- Buildings greater than 10,000 sq.ft., 3-stories or more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.
- Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
- Show Fire Lanes and Sign Detail as shown in DSFPR

c. **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 Piney Neck 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.
- d. **Gas Piping and System Information:**
- Provide type of fuel proposed, and show locations of bulk containers on plan.
- e. **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”
 - Proposed Use
 - Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
 - Square footage of each structure (Total of all Floors)
 - National Fire Protection Association (NFPA) Construction Type
 - Maximum Height of Buildings (including number of stories)
 - Note indicating if building is to be sprinklered
 - Name of Water Provider
 - Letter from Water Provider approving the system layout
 - Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
 - 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: Milton Melendez 698-4500

Neither the Delaware Department of Agriculture nor the Delaware Forest Service has any objections to the Pepper Creek Point application. The site however, is located in an environmentally sensitive developing area and the *Strategies for State Policies and Spending* supports environmentally sensitive development in these areas. Efforts should be made to achieve a more environmentally sensitive design than what is currently proposed.

In addition, this site is a part of a “good recharge” area. DNREC has mapped all ground water potential recharge areas. A “good” rating is the second highest rating and designates an area as having important groundwater recharge qualities. Maintaining pervious cover in “Excellent” and “Good” recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as “excellent” and “good” recharge areas adversely impacts the future prospects for agriculture in Delaware.

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to maintain as much of the natural environment of the site as possible. Please contact either the Delaware Department of Agriculture or the Delaware Forest Service for assistance with the design of this project.

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.

Public Service Commission - Contact: Andrea Maucher 739-4247

The project is not in a certificated service territory for water or wastewater. The utility selected to serve will need to apply to the Commission for a CPCN.

Delaware State Housing Authority – Contact Jimmy Atkins 739-4263

According to the *State Strategies Map*, the proposal is located in an Investment Level 4 and Environmentally Sensitive Developing Area. As a general planning practice, DSHA encourages residential development only in areas where residents will have proximity to services, markets, and employment opportunities such as Investment Level 1 and 2 areas outlined in the State Strategies Map. Since, the proposal is located in an area targeted for agricultural and natural resource protection, and therefore inconsistent with where the State would like to see new residential development, DSHA does not support this proposal.

Sussex County – Contact: Richard Kautz 855-7878

This project is situated in an Environmentally Sensitive Development Area. The required report should include how the PLUS comments have been addressed and how the plan has been revised accordingly.

The Sussex County Engineer Comments:

The proposed project is in the Dagsboro/Frankford Planning Area. A planning study to determine the capacity needs is currently underway. The study is anticipated to be complete by approximately July 2007. The density proposed is 2.10 EDU/acre. A central community system operated by a private utility company, yet to be determined, is proposed. Sussex County has concerns about locating a Waste Water Treatment Facility in close proximity to Pepper Creek. Due to the close proximity of Pepper Creek the Sussex County Engineering Department prefers a connection to the Sussex County wastewater system. If this cannot be accomplished, then they recommend that the wastewater system be operated under a long-term contract with a capable wastewater utility that meets the TMDL limits for the Inland Bays Waterways. Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A review of the treatment and disposal system is required by the Sussex County Engineering Department. When Sussex County provides sewer service, it is required that the treatment system be abandoned and a direct connection made to the county system at the developers and/or homeowners association expense. A concept plan shall be reviewed and approved prior to the issuance of any building permits. Sussex County requests a vegetative buffer between the Wastewater spray site and the Sussex County Land Trust Lands.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of

State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

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

Sincerely,

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

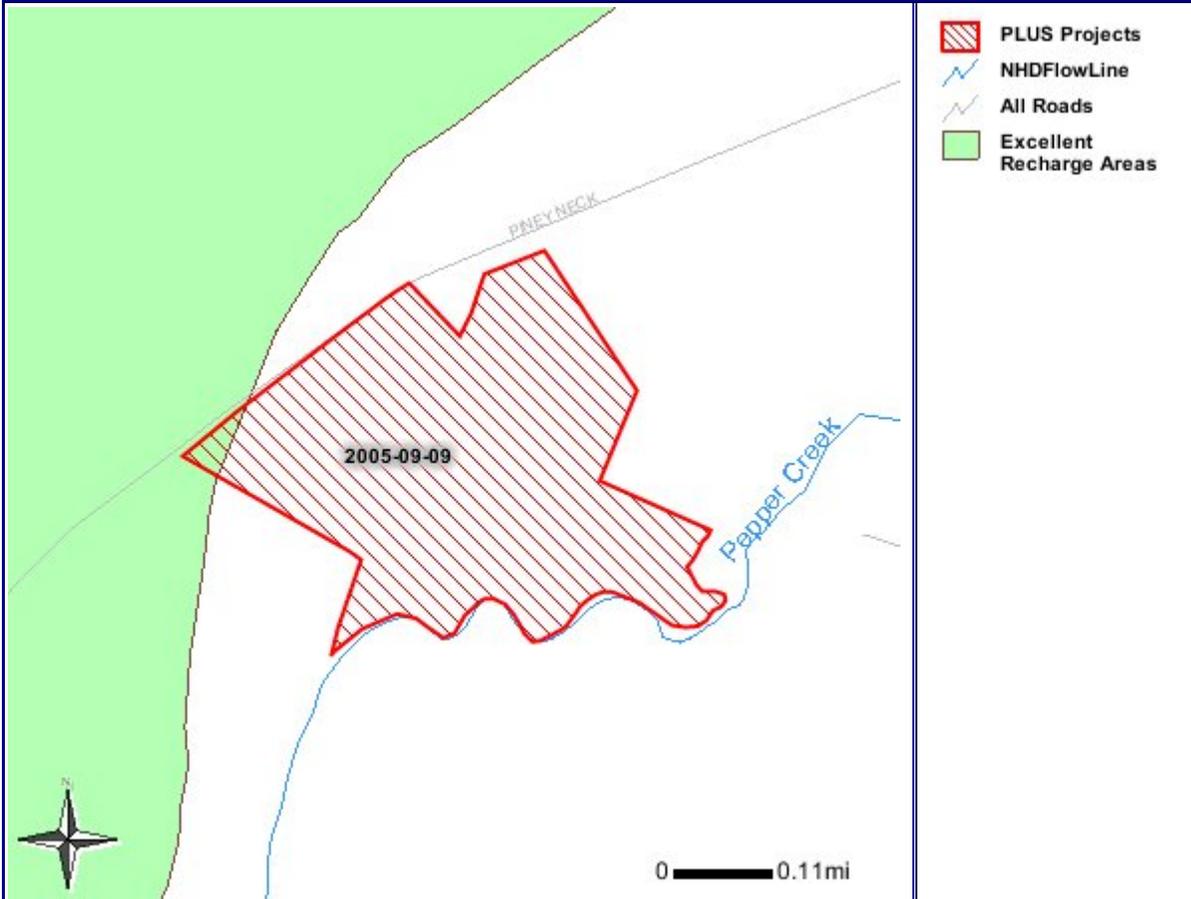
Constance C. Holland, AICP
Director

CC: Sussex County



Pepper Creek Point

2005-09-09



This map was produced by the Delaware Department of Natural Resources and Environmental Control.

