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

September 17, 2007

Mr. Steve Engel
Vista Design, Inc.
11634 Worcester Highway
Showell, MD 21862

RE: PLUS review – PLUS 2007-08-01; Trotter Farm

Dear Mr. Engel:

Thank you for meeting with State agency planners on August 22, 2007 to discuss the proposed plans for the Trotter Farm project to be located on Airport Road in Sussex County.

According to the information received, you are seeking site plan approval through Sussex County for 473 residential units on 120 acres located in Level 4.

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

This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is within the Low Density area according to the Sussex County certified comprehensive plan. **The comments in this letter are technical, and are not intended to suggest that the State supports this development proposal. This letter does not in any way suggest or imply that you may receive or may be entitled**

to permits or other approvals necessary to construct the development you indicate or any subdivision thereof on these lands.

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

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

This project represents a major land development that will result in 473 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is within the Low Density area according to the Sussex County certified comprehensive plan. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring more than 1153 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100% of road maintenance and drainage improvements for the transportation system, 100% of school transportation and paratransit services, up to 80% of school construction costs, and about 90% of the cost of police protection in the unincorporated portion of Sussex County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases.

Because the development is inconsistent with the *Strategies for State Policies and Spending*, the State is opposed to this proposed subdivision.

Division of Historical and Cultural Affairs – Contact: Terrance Burns 739-5685

According to the historical resources and documents at the State Historic Preservation Office, there are no recognized or known archaeological or historical sites on this parcel but there are a few that are near it, but not to close. These archaeological sites are as follows: S-7800 (7S-E-108), S-7799 (7S-E-107), and S-7801 (7S-E-109). In addition,

within the area where this parcel is there is an indication that possibly there could probably still be undiscovered archaeological sites (prehistoric or historic) remaining somewhere on the premisis. As you may know, this parcel is in a Level 4 area. The State Historic Preservation Office is not in favor of or will endorse the construction any development in a Level 4 Area. This type of construction will lead to the further loss of the historic agricultural landscape in the area, and to the loss of possible archaeological sites within the development. If any construction proceeds on this parcel (property or project area), the State Historic Preservation Office of the Division of Historical & Cultural Affairs would like the opportunity to examine the area prior to any demolition or ground-disturbing activities, to see if there are any archaeological sites on it, in order to learn more information about this area in detail. If you would like to discuss this information or other issues further, contact the State Historic Preservation Office Division of Historical & Cultural Affairs at (302) 744-7400 ext.25, and they will be more than happy to assist you.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

Cool Branch Associates, LLC seek to develop 189 single-family detached houses, 212 townhouses and 72 condominiums on an approximately 120.84-acre assemblage of parcels (Tax Parcels 1-32-7.00-92.01 and 1-32-7.00-92.04) located southeast of Seaford and more specifically on the north side of Airport Road (Sussex Road 488) opposite Dillards Road (Sussex Road 489). The land is zoned GR-1 in Sussex County and an RPC overlay zoning would be needed to permit the proposed development.

Because this development is proposed for a Level 4 Area, it is inconsistent with the *Strategies for State Policies and Spending*. As part of our commitment to support the *Strategies*, DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 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.

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

If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide further technical review and comments.

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

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and county certified comprehensive plans. According to the *Strategies* this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional state investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans. We encourage the use of transfer of development rights where this growth management tool is available.

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are the loss/fragmentation of forest (43 out of 87 acres or 49%), the increase in impervious cover, the project's location in an excellent recharge area and Groundwater Management Zone, and tax ditch rights-of-way. While mitigating measures such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

Soils

Based on the Sussex County soil survey update, Rosedale, Woodstown, Hambrook, Pepperbox-Rockawalkin complex, Glassboro, Hurlock, Longmarsh and Mullica were mapped in the immediate vicinity of the proposed construction. Rosedale is a well-drained upland soil that, generally, has few limitations for development. Woodstown, Hambrook, and Pepperbox-Rockawalkin complex are moderately well-drained soils found on low-lying uplands that have moderate limitations for development. Glassboro is a somewhat poorly-drained wetland associated (potentially hydric) soil that has severe limitations for development. Hurlock is a poorly-drained wetland associated (hydric) soil that has severe limitations for development. Longmarsh is very poorly-drained wetland associate (hydric) soil indicative of floodplains. Mullica is a very poorly-drained wetland associated (hydric) soil that has severe limitations for development. An estimated 25-30% of the soils mapped are wetland (hydric) or potential wetland (potentially hydric) soil mapping units containing the following soil mapping units: Hurlock, Longmarsh, Mullica, and Glassboro. These soils are considered unsuitable for development and should be avoided.

As mentioned previously much of the combined parcel land area contains significant acreages of somewhat poorly (potentially hydric) to very poorly-drained (hydric) Glassboro, Hurlock, Mullica, and Longmarsh (estimated 25-30% of the parcel's land area). 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).

Based on the Chapter 99, Section 16A of the Sussex County Code (paraphrased), lands compromised by improper drainage or flooding potential pose significant threats to the safety and general welfare of future residents and, therefore, shall not be developed. Soils mapped as Hurlock, Mullica, Longmarsh, and Glassboro fit the criterion for improper drainage or high flooding potential and should be avoided. The Watershed Assessment Section believes permitting development on such soils would violate the above-stated provision of the Sussex County Code.

Wetlands

According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine headwater riparian wetlands (i.e., headwater streams and wetlands) bisect (i.e., in a north/south direction) are found over much of the eastern and western portions of proposed project's combined parcel land area. Moreover, significant acreages of scattered palustrine forested and palustrine unconsolidated bottom (wetlands associated with excavated ponds) wetlands were mapped in the north-central and central portions of the proposed project's combined parcel land area.

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 Management Program (DCMP) Section. Each of these certifications represents a separate permitting process. Please be advised that nationwide permits have been suspended in Delaware and are pending further coordination with the Corps. Therefore, contrary to past practices, Coastal Zone Management approval can no longer be assumed. Individual certifications must be granted from the DCMP office for each project intending to utilize a Nationwide Permit. For more information on the Federal Consistency process, please contact the DCMP office at 302.739.9283. 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.

Although the developer maintains a 25-foot buffer from the wetland, it is recommended that vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex and other water bodies on site. It is important to note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands and associated buffers, to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

As noted previously, palustrine headwater water riparian wetlands comprise a significant portion of the project's combined parcel land area. Since the protection of headwater riparian wetlands is critically important for maintaining the water quality/ecological integrity of the entire length of a stream, including floodplain system and other water bodies to it drains further downstream, its protection deserves the highest priority. Therefore, the Watershed Assessment Section recommends that the applicant maintain a

minimum 100-foot upland buffer from the landward edges of all riparian wetlands (including ditches). Moreover, a 100-foot buffer is also recommended from all nonriparian wetlands and water bodies. A literature review of existing buffer research by Castelle et al. (1994) has documented consensus among researchers that a 100-foot upland buffer from wetlands and water bodies is the minimum buffer width necessary, under most circumstances, to protect water quality.

Impervious Cover

Based on information provided by the applicant in the PLUS application, post-development surface imperviousness on this parcel was estimated to reach 21 percent. This figure, however, appears to be significantly lower than one would expect given the development intensity proposed for this project.

When calculating surface imperviousness, it is important to include all forms of constructed surface imperviousness (i.e., rooftops, sidewalks, stormwater management structures, and roads) in the calculation for surface imperviousness. This will ensure a realistic assessment of this project's likely post-construction environmental impacts.

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.

ERES Waters

This project is located adjacent to receiving waters Deep Creek watershed, a subwatershed of the greater Nanticoke watershed, and designated as having waters of 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.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Deep Creek 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 Deep Creek watershed, "target-rate-nutrient reductions" of 30 and 50 percent will be required for nitrogen and phosphorus, respectively. Additionally, "target-rate-reductions" of 2 percent will be required for bacteria.

TMDL Compliance through the PCS

As indicated above, Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been proposed for the Deep Creek watershed. The TMDL calls for a 30 and 50 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 2 percent reduction in bacteria. A pollution control strategy (PCS) will be used as a regulatory framework to ensure that these nutrient reduction targets are attained. The Department has developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional nutrient reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, increasing passive, wooded open space, connection to central sewer (if applicable), and the use of green-technology stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Resource Protection Areas

The Water Supply Section, Ground Water Protection Branch, has determined that a significant portion of the proposed development falls within an excellent ground-water recharge area; the review found no wellhead protection areas. The review also showed that a significant portion of the project falls in the Ground Water Management Zone (GMZ) for Cool Branch MHP (Map 1). The application states that wastewater management and water will be provided by a public utility: Tidewater Utilities, Inc. GWPB applauds the projects site plan showing contiguous open space and efforts to minimize impervious cover in the excellent ground-water recharge potential area.

Excellent Ground-Water Recharge Areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. These soils are able to transmit water very quickly from the land surface to the water table. This map category (excellent) is an indicator of how fast contaminants will move and how much water may become contaminated (Andres, 2004). Land use activities or impervious cover on areas of excellent ground-water recharge potential may adversely affect the quality and quantity of ground water in these areas.

This proposed development shows storm-water management ponds within the excellent ground-water recharge area (Map 2). The construction phase of this type of pond requires excavation, hauling, and grading. The heavy equipment used in this phase has the capacity to compact and degrade the structure of the strata that defines the area as an excellent ground water recharge area. Changes to the structural soil properties may cause significant reduction in recharge capacity. The operation of storm-water management ponds in excellent ground-water recharge areas has the potential to infiltrate contaminated water into the aquifer.

GWPB recommends:

- Moving the stormwater management ponds to areas outside the excellent ground-water recharge potential areas
- If reasonable and earnest efforts result in not relocating the ponds, the water entering these ponds should be pretreated to remove potential contaminants.

The site plans do not show where the wastewater management area is. DNREC GWPB does not consider wastewater management areas or stormwater management ponds as open space used to offset impervious surface calculations. In addition, there is no location for a public well and no CPCN in place.

GWPB requests:

- What is the location and type of wastewater management facility?
- Where will the well that is to provide water to the development located?

Some of the storm-water management ponds on this site may come under the influence of the spray irrigation system at Cool Branch MHP (Maps 2 & 3). Spray irrigation facilities are required to adhere to a protocol that is designed to protect the environment. The facility at Cool Branch was installed prior to the passage of Delaware's Source Water Protection Law of 2001. If it is the intent of the developer to expand, the Cool Branch

spray irrigation facility to accommodate wastewater from Trotter Farm this expansion may conflict with the spirit of the Law.

GWPB recommends:

- Maintain a forested buffer between the existing spray fields and ponds.
- Not permit the expansion of the spray irrigation facility citing that it is an area of excellent ground-water recharge potential.

The proposed development would change the total impervious cover from 3.9% to approximately 21%. 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. 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 (DNREC, 2005).

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 including 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 clean rooftop runoff for infiltration to ground water. Clean rooftop runoff differs from stormwater because it is not associated with runoff from roadways, sidewalks, and lawns that potentially carries contaminants (Kauffman, 2005).

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

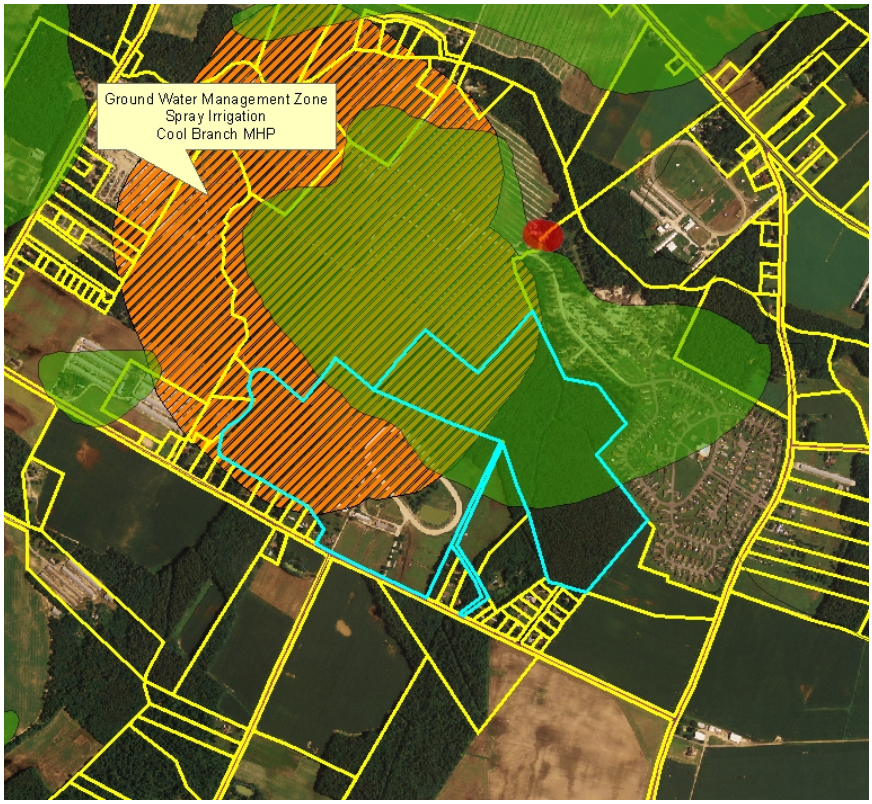
Delaware Department of Natural Resources and Environmental Control (2005): *Source Water Protection Guidance Manual for the Local Governments of Delaware*: Dover, DE. 144 p.

http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_final.pdf

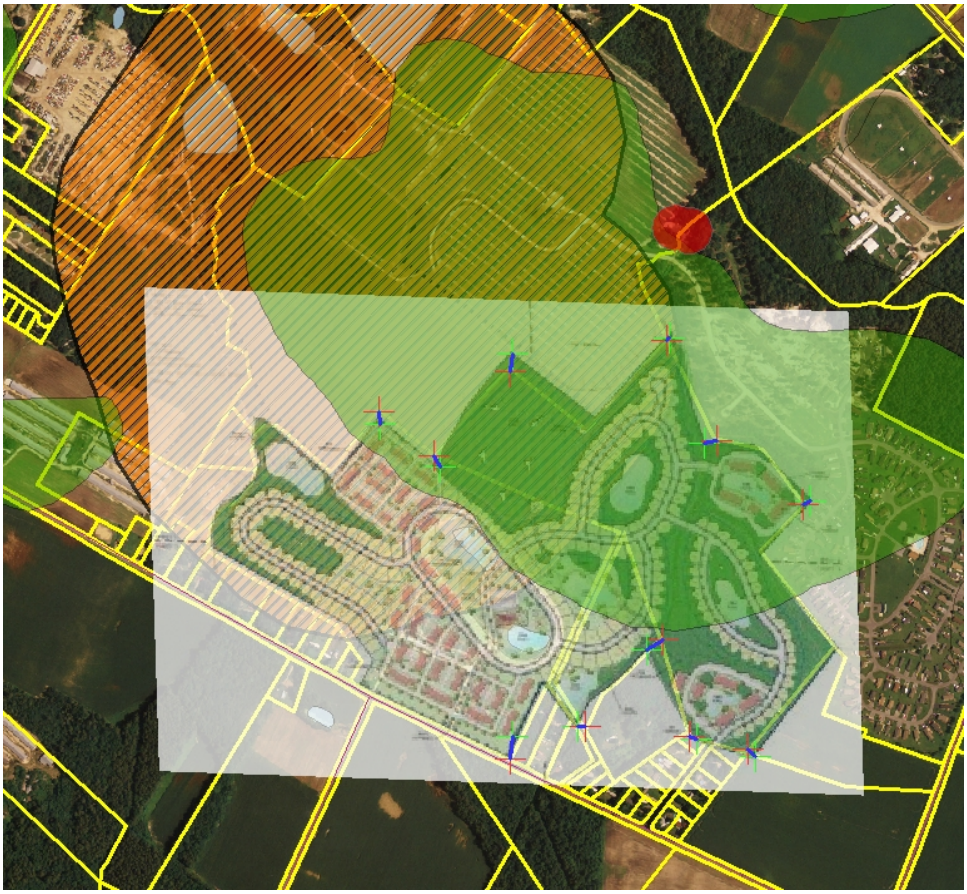
Kauffman, G.J., Wozniak, S.L., and Vonck, K.J., 2005, *Delaware Ground-Water Recharge Design Manual*: Newark, DE, Water Resources Agency, University of Delaware, p. 31.
http://www.wr.udel.edu/swaphome/Publications/SWPguidancemanual.html

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

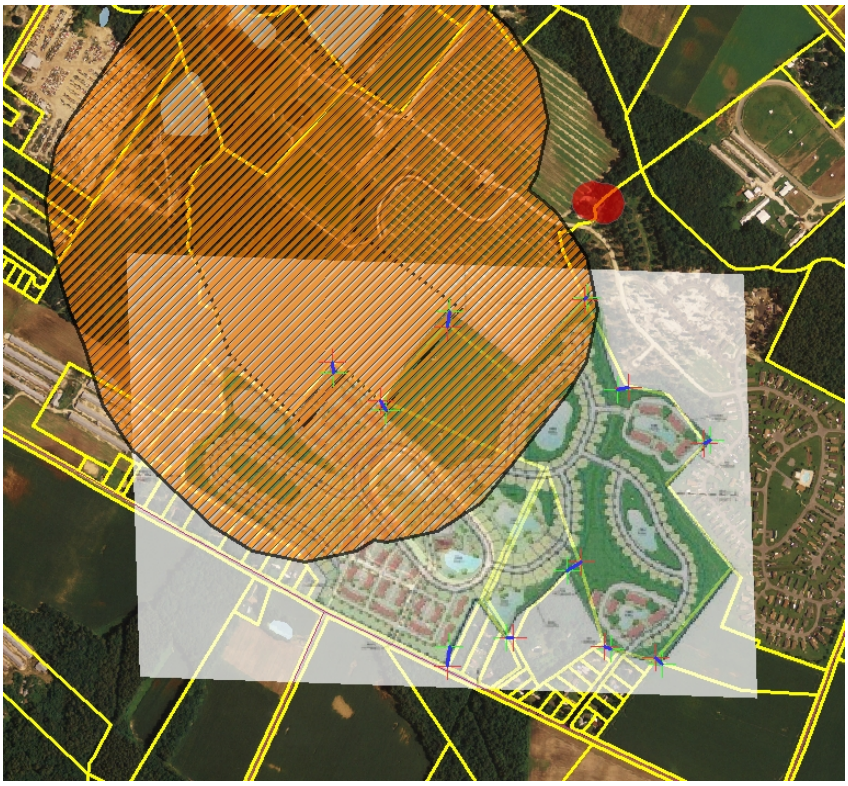
Map 1 of Trotter Farm (PLUS 2007-08-01) The impacted parcels are outlined in blue. Excellent ground-water recharge potential area is highlighted in green. The groundwater management area is shown in orange.



Map 2 of Trotter Farm (PLUS 2007-08-01) The site plan provided by the developer is projected onto the parcels. Excellent ground-water recharge potential area is highlighted in green. The groundwater management area is shown in orange.



Map of Trotter Farm (PLUS 2007-08-01) The site plan provided by the developer is projected onto the parcels. The groundwater management area is shown in orange.



Water Supply

The information provided indicates that Tidewater Utilities will provide well water to the proposed projects through a central community water system. Our files reflect that Tidewater Utilities does not currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at 302-739-4247. Should an on-site public well be needed, it must be located at least 150 feet from the outermost boundaries of the project. 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.

Potential Contamination Sources exist in the area, and any well permit applications will undergo a detailed review that may increase turnaround time and may require site specific conditions/recommendations. In this case there is a Groundwater Management Zone A and B named Cool Branch Mobile Home Park located within 1000 feet of the proposed project.

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

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. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson at the Sussex Conservation District at (302) 856-7219 for details regarding submittal requirements and fees.

Because of the parcel's location in an impaired watershed and the amount of impervious surface, consider incorporating more green technology BMPs and low impact development practices to reduce stormwater flow and to meet water quality goals.

The Sediment and Stormwater Management Program ensures sediment and erosion control plans and stormwater plans comply with local land use ordinances and policies,

including the siting of stormwater management facilities. However, we do not support placement in resource protection areas or removal of trees for the sole purpose of placement of a stormwater management facility/practice.

Drainage

1. This project is located within the Cool Branch Tax Ditch, which has existing tax ditch rights-of-way. Several of the proposed residential lots and parking lots are within existing tax ditch rights-of-way. Any modification of the tax ditch, including piping or relocation, will require approval of the Tax Ditch Association and a court order change to the tax ditch. Please contact the Drainage Program in Georgetown at (302) 855-1930 as soon as possible to request a review of the tax ditch rights-of-way and to discuss the releasing of stormwater into the tax ditch.

2. Existing tax ditch rights-of-way should be free from subdivision lots to allow for routine maintenance and periodic reconstruction. Routine maintenance primarily consists of mowing ditch bank vegetation and the removal of small blockages. Periodic tax ditch reconstruction involves the removal of sediment from the ditch bottom to reestablish the original design grade. The removed sediment, referred to as spoil, is typically disposed of by spreading within the tax ditch right-of-way.

3. The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.

4. 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 yards in certain cases. Therefore, catch basins placed in rear and side yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, pools, and kennels can hinder drainage patterns as well as future maintenance to the storm drain or catch basin. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.

5. An increase of the side yard setback to 15 feet may be needed on all properties with a drainage easement on the side. The increase will allow room for equipment to utilize the entire easement and maneuver free of obstructions if the drainage

conveyance requires periodic maintenance or future re-construction. The side yard setback would only increase on the side with the drainage easement.

6. All catch basins in rear or side yards should have a 10-foot drainage easement around them on all sides. Place restrictions on fences, sheds, and other structures within the easement to prevent obstructions from being place next to the catch basin. Record the easement on the deed.

7. Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage
8. easement on the deed, the second owner, and any subsequent owner of the property, will be fully aware of the drainage easement on their property.

9. Preserve existing riparian buffers on this site to aid in the reduction of nutrients, sediment, and other pollutants entering the watershed. Please explore methods to filter excess nutrients in stormwater runoff from this site before releasing the stormwater into the watershed.

10. The Drainage Program does not support the removal of trees for the creation of stormwater management areas. However, the Drainage Program does recognize 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.

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

Open Space

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas. Doing so will accomplish two things: it will preserve the buffers and will satisfy DNREC's request for 100-foot riparian/wetland buffers, and it will create recreational opportunities for residents by allowing them access to and views of the forest and stream.

The developer is strongly urged to consider alternatives to mowed grass within community open space areas, especially along wetland buffers/stormwater management

facilities. Mowing and other maintenance costs from lawn areas can become a substantial burden for community maintenance associations. There may be areas within the development that are appropriate for warm or cool season grasses. The maintenance costs associated with meadow type grasses are much lower than those of lawn grasses, and provide food and habitat for birds and other wildlife and can help reduce non-point source pollution. 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/.

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.

Site Visit Request

We have not surveyed the project area; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities that would be impacted by this project. In order to provide more informed comments and to make recommendations, our program botanist and zoologist request the opportunity to survey the project area. Please note that our scientists have decades of experience in comprehensive rare species survey methods. They have extensive knowledge of the flora and fauna of the state and are the most qualified in making rare species identifications. Our program determines what is listed as rare or common in the state based on our database. Surveys are conducted at no cost or liability to the landowner/developer. Recommendations resulting from the survey would allow the applicant the opportunity to reduce potential impacts to rare species and unique habitats and to ensure that the project is environmentally sensitive. Please contact Bill McAvoy, Robert Coxe or Kitt Heckscher at (302) 653-2880 to set up a site visit.

Wetland Habitat

Question 29# on the PLUS application states that the only ground disturbance within 100 feet of wetlands will be for road crossings. However, question #36 states that there are only ’25-foot wetland buffers proposed for all wetlands’. These two statements seem contradictory. If you look at the site plan, there are lot lines, structures and parking areas within 100 feet of wetland boundaries.

Recommendation:

- Recommend that 100-foot upland buffers be maintained around wetlands to provide critical habitat for wetland dependent species which utilize upland buffers during a portion of their life cycle, to provide adequate wildlife travel corridors and to protect water quality. This recommendation, although not currently required by the county, is based on peer reviewed scientific research. This would require redesigning the current site plan and/or omitting some lots and infrastructure.

Forest Preservation

This project will result in forest fragmentation and an estimated loss of at least 43.07 acres of forest, some of which are forested wetlands. Forested wetlands can support an array of plant and animal species. The amount of forest actually cleared may be higher once this site is built out and then homeowners subsequently clear for sheds, pools, play areas, dog kennels, etc. While DNREC appreciates the permanent protection of 48 acres, much of it is fragmented by lots, roadways and stormwater management ponds. Many species, often rare, depend on larger connected areas of forest. Forest fragmentation separates wildlife populations, increases road mortality, and increases “edge effects” that leave many forest dwelling species, particularly songbirds, vulnerable to predation.

Cumulative forest loss has led to a corresponding loss of forest-dependent species (Environmental Law Institute. 1999. Protecting Delaware's Natural Heritage: Tools for Biodiversity Conservation. ISBN#1-58576-000-5). Forest loss throughout the state is of utmost concern to our Division (which is responsible for conserving and managing the states wildlife; see www.fw.delaware.gov and the Delaware State Code, Title 7). Because of an overall lack of forest protection, DNREC has to rely on applicants and/or the entity that approves the project (i.e. counties and municipalities) to consider implementing recommendations that will aide in reducing forest loss.

Recommendations

1. DNREC encourages the applicant to consider additional preservation of the forested area that is going to be cleared by the current site plan. This would entail omitting some lots and infrastructure that are within the forested area. Many incentive-based programs for wildlife management are available to private landowners through our agency. Please contact Shelley Tovell at (302) 653-2880 if the landowner(s) is interested in more information.

2. There are 9 stormwater management ponds being proposed. Trees will have to be cleared for many of these ponds and the applicant should consider omitting ponds that are not necessary for stormwater control or those being constructed only to market 'water front' lots. The water quality in these ponds overtime may not be the 'water front' that many homebuyers anticipate. They are designed to hold run-off from lawns and paved areas and often have aquatic weed and algae problems. The applicant should also consider alternative methods that do not require tree clearing.

3. Recommend that trees not be cleared from April 1st to July 31st to minimize impacts to birds and other wildlife that utilize forests for breeding. This recommendation would only protect those species for one breeding season; once trees are cleared the result is an overall loss of habitat.

Plant Rescue

Because there is forest loss and inadequate wetland buffers associated with this project, 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 or lynn_redding@ml.com

Potential Hunting Issue

Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited and the applicant should contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not a buffer between lot lines and the adjacent property line. There is also noise associated with hunting, such as the discharge of firearms or dogs barking when pursuing game.

Nuisance Waterfowl

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

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 36.3 tons (72,600.6 pounds) per year of VOC (volatile organic compounds), 30.1 tons (60,108.4 pounds) per year of NOx (nitrogen oxides), 22.2 tons (44,349.1 pounds) per year of SO2 (sulfur dioxide), 2.0 ton (3,947.8 pounds) per year of fine particulates and 3,036.5 tons (6,072,944.7 pounds) per year of CO2 (carbon dioxide).

However, because this project is in a level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NOx; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NOx emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1,2 or 3).

Emissions from area sources associated with this project are estimated to be 14.6 tons (29,283.1 pounds) per year of VOC (volatile organic compounds), 1.6 ton (3,222.0 pounds) per year of NOx (nitrogen oxides), 1.3 ton (2,673.8 pounds) per year of SO2 (sulfur dioxide), 1.7 ton (3,450.4 pounds) per year of fine particulates and 59.4 tons (118,707.2 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 5.8 tons (11,605.7 pounds) per year of NOx (nitrogen oxides), 20.2 tons (40,367.7 pounds) per year of SO2 (sulfur dioxide) and 2,977.1 tons (5,954,237.5 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	36.3	30.1	22.2	2.0	3036.5
Residential	14.6	1.6	1.3	1.7	59.4

Electrical Power		5.8	20.2		2977.1
TOTAL	50.9	37.5	43.7	3.7	6073.0

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 5.8 tons of nitrogen oxides per year and 20.2 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 in is in the process of training builders in making their structures more energy efficient. The Energy Star Program is excellent way to save on energy costs and reduce air pollution. They highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

They also recommend that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths, links to mass transit, and fund a lawnmower exchange program for their new occupants.

State Fire Marshal's Office – Contact: 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 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers.
   - Where a water distribution system is proposed for multi-family residential sites, 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, over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements
   - For townhouse buildings, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan
   - Show Fire Department Connection location (to 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 the main thoroughfares 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: Scott Blaier 698-4500

The Department is opposed to development in areas designated as Investment Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support isolated development of these areas. The intent of this plan is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture opposes development which conflicts with the preferred land

uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

Section 1. Chapter 99, Code of Sussex Section 99-6 may apply to this subdivision. The applicant should verify the applicability of this provision with Sussex County. This Section of the Code states:

G. Agricultural Use Protections.

(1) Normal agricultural uses and activities conducted in a lawful manner are preferred. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land uses adjacent to land used primarily for agricultural purposes shall be subject to the following restrictions:

(a) For any new subdivision development located in whole or in part within three hundred (300) feet of the boundary of land used primarily for agricultural purposes, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

"This property is located in the vicinity of land used primarily for agricultural purposes on which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of

agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance of any annoyance or inconvenience which may result from such normal agricultural uses and activities."

(b) For any new subdivision development located in whole or in part within fifty (50) feet of the boundary of land used primarily for agricultural purposes no improvement requiring and occupancy approval for a residential type use shall be constructed within fifty (50) feet of the boundary of land used primarily for agricultural purposes.

A large portion of this site is located within an area 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.

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.

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.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights, and other land use measures, we will support these efforts and work with developers to implement these measures. If this project is approved we will work with the developers to minimize impacts to the agricultural and forestry industries.

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

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

Delaware State Housing Authority – Contact Vicki Walsh 739-4263

This proposal is for a site plan review for 473 residential units consisting of single family units, townhomes, and condominiums on 120 acres, located on Airport Road near the intersection with Fire Tower Road, east of Seaford in Sussex County. According to the State Strategies Map, the proposal is located in an Investment Level 4 area and outside the growth zone. 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.

Department of Education – Contact: John Marinucci 735-4055

This proposed development is in the Seaford School District. DOE recognizes that this development project is in level 4 of the State Strategies for Policies and Spending and as such, DOE does not support the approval of this project. DOE offers the following comments on behalf of the Seaford School District.

1. Using the DOE standard formula, this development will generate an estimated 237 students.
2. DOE records indicate that the Seaford School Districts' *elementary schools* ***are not*** *at or beyond 100% of current capacity* based on September 30, 2006 elementary enrollment.
3. DOE records indicate that the Seaford School Districts' *secondary schools* ***are not*** *at or beyond 100% of current capacity* based on September 30, 2006 secondary enrollment.
4. DOE requests the developer work with the Seaford 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.

Sussex County – Contact: Richard Kautz 855-7878

This year Sussex County will be considering implementation of a Source Water Protection Program required by the State. Depending on the requirements adopted by the County Council this project might be affected due to about 50% of the property being within an Excellent Recharge Area. Any well location should insure that the wellhead protection area is entirely on site.

A jurisdictional determination letter should be provided to support the proposed design for the wetlands area and the design should insure that no lots contain any wetlands. This letter should be obtained prior to the request for approval of any final plan.

The Sussex County Engineer Comments:

The project proposes to develop using a private central community wastewater system. It is recommended that the wastewater system be operated under a long-term contract with a capable wastewater utility. In addition, we recommend they have a wastewater utility provider prior to approving the project. Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A review and approval of the treatment and disposal system by the Sussex County Engineering Department is also required and plan review fees may apply.

Disposal fields should not be counted as open space. Wastewater disposal fields should be clearly identified on recorded plots.

The proposed project is out of the Blades Planning Area for sewer service, but if the developer is interested, we could adjust the boundaries. The Sussex County Engineering Department is currently conducting a planning study of the area. The study is scheduled to be complete in the fall of 2007. If Sussex County ever provides sewer service and the project has a CPCN, it is recommended that the treatment system be abandoned and a direct connection made to the County system at the developers and/or owners expense. If Sussex County ever provides sewer service and the project does not have a CPCN, it is required that the treatment system be abandoned and a direct connection made to the County system at the developers and/or owners expense.

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.

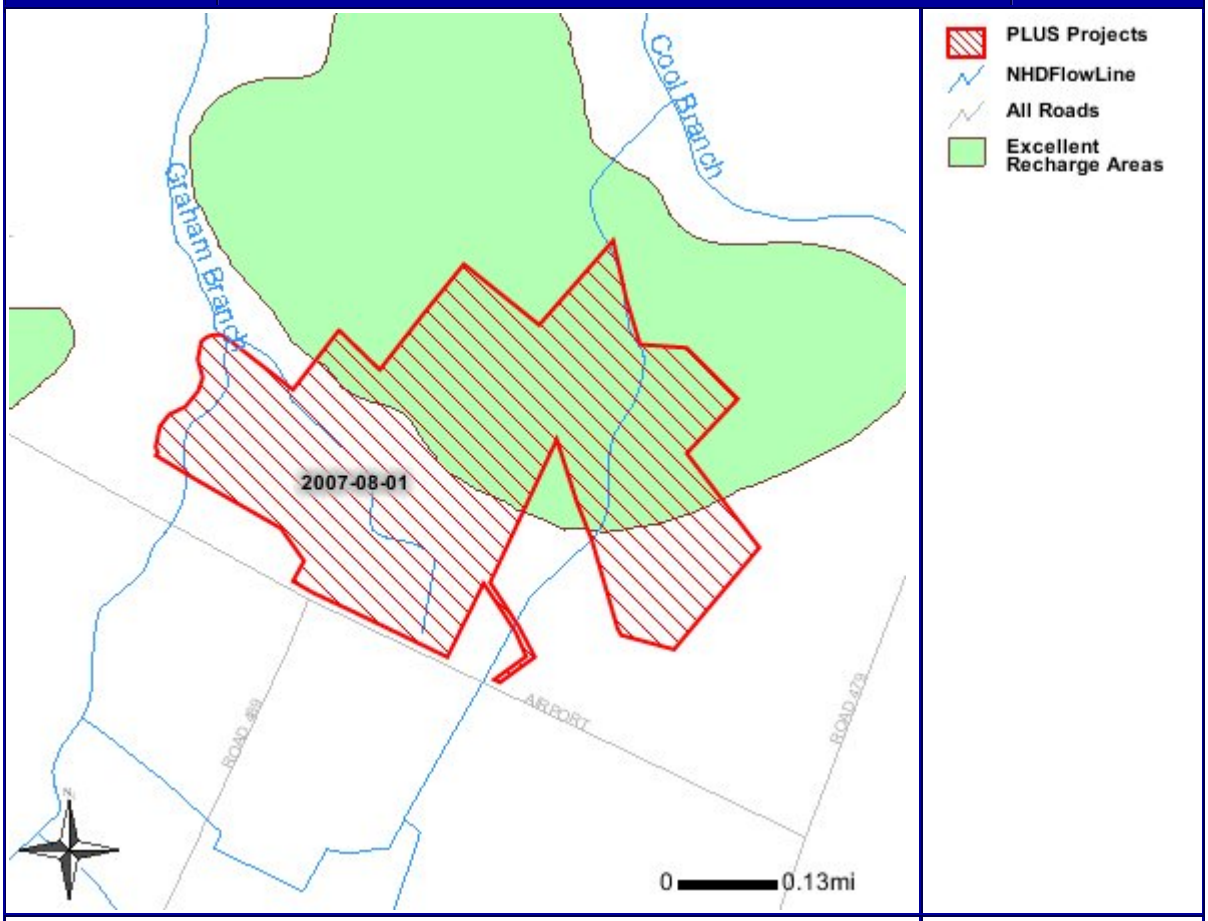
Sincerely,

Constance C. Holland, AICP
Director

CC: Sussex County

Trotter Farm

2007-08-01



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