



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

October 23, 2006

Matthew Metz  
Charles Murphy Associates, Inc.  
14 South Maple Avenue  
Milford, DE 19963

RE: PLUS review – PLUS 2006-09-05; Tuscany Creek

Dear Mr. Metz:

Thank you for meeting with State agency planners on September 27, 2006 to discuss the proposed plans for the Tuscany Creek project to be located on both sides of Sharptown Road and contiguous with Branch School Road and Tussocky Branch.

According to the information received, you are seeking site plan approval through Sussex County for 184 residential units on 155 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.

This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is in the Low Density area according to the Sussex County 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 184 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located within the Low Density area according to the Sussex County 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 450 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: Alice Guerrant 739-5685**

We are not in favor of this development in Level 4, because it will damage the historic agricultural landscape of the area and lead to the loss of historic buildings and archaeological sites. It will introduce increased noise from traffic, adversely affecting other historic properties in the area. This parcel contains the Brittingham dwelling

complex (S-6805), a late 19<sup>th</sup>-century house on the south side of Sharptown Rd. The half of the parcel to the north contains a known prehistoric-period archaeological site (S-7735). There are other areas of high potential for prehistoric-period archaeological sites within the development. Another Brittingham dwelling (S-6806) is on the north side of Sharptown Rd. but is cut out of this parcel. Beers Atlas of 1868 shows nothing here on the east side of the creek. The two Brittingham houses first show up on the USGS 15' topographic 1915 Seaford map, but architecturally date to about the 1880s.

The 2002 aerial photograph shows a clump of trees in the middle of the field in the south parcel. A forested portion extended into this area in the 1937 aerial, but it does show clearly in the 1954 aerial. This may mark the location of a family cemetery. Since the meeting on September 27, I have met with the owner and the engineer for this project. They are aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. They have questioned people who once lived on this property, and none of them remembers any sign of graves here. However, it is not uncommon for grave markers to disappear over time. The late 19<sup>th</sup>-century houses might both have had small cemeteries associated with them. The owner is strongly urged to hire an archaeologist to determine if there are in fact any burials here. If there are, the area should be delineated and preserved to avoid the considerable expense and delay in removing any human remains and reburying them elsewhere. This office will need a copy of any archaeological report for this work, whether or not anything is found. Faye Stocum is the staff contact for this program (302-736-7400).

**If this development does move forward, the DHCA requests the opportunity to document any remaining buildings prior to any demolition work. They would also like the opportunity to examine the known site and to look for any other archaeological sites, to learn something about their location, nature, and extent prior to any ground-disturbing activities. The development should have adequate landscaping to lessen the visual and noise effects on neighboring historic properties.**

**Department of Transportation – Contact: Bill Brockenbrough 760-2109**

Wolfe Properties, Inc. seeks to develop 184 single-family detached houses on a 155-acre assemblage of parcels (Tax Parcels 2-32-11.00-45.00 and 48.00). The land is located on both sides of Sharptown Road (Delaware Route 24) and primarily east of Branch School Road (Sussex Road 514), although it includes a small area on the southwest corner of the intersection of those two roads. The land is zoned AR-1 and would be developed by right.

Because the 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 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 potential impacts to two out of three layers of green infrastructure (forest and cropland), loss fragmentation of forest (7 out of 34 acres, or 21%), increase in impervious cover, and the project's location in an excellent recharge area. 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**

According to the Sussex County soil survey, Eversboro and Osier were mapped on subject parcel. Eversboro is an excessively well-drained upland soil that has moderate limitations on account of its rapid permeability. Osier is a poorly-drained wetland associated (hydric) soil that has severe limitations for development.

### **Wetlands**

Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested and palustrine scrub-shrub riparian wetlands associated with the headwater reaches of two stream tributaries (i.e., Mill and Tussocky Branches), immediately bound the entire southern and western boundaries of subject parcel. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. The developer should maintain a 100-foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.

PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763.

In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

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

### **Wetland Buffers**

**The proposed 25-foot wetland buffers are completely inadequate for protecting water quality and rare community types. In addition, there are many wetland dependent species that utilize upland buffers around wetlands during a portion of their life cycle. DNREC strongly recommends that the buffer be increased to 100 feet (preferably 300 feet) in an effort to protect wetland dependent species and water quality. There are lots whose rear boundaries are within wetlands and there is no buffer at all. These lots should either be omitted from the site plan or pulled back at least 100 feet from the wetlands.**

### **Impervious Cover**

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 25 percent. However, given the scope and density of this project, said estimate may be an underestimate. The applicant should recognize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be accounted for when calculating surface imperviousness, otherwise an inaccurate assessment of this project's environmental impacts is inevitable. It is strongly advised that this figure be recalculated to accurately reflect these concerns.

Since studies link increases in impervious cover to decreases in water quality, the applicant is strongly encouraged to pursue best management practices (BMPs) that can mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials (“pervious pavers”) in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

### **ERES Waters**

This project is located adjacent to receiving waters of Broad Creek of the greater Nanticoke River, designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware’s “Surface Water Quality Standards” (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a “pollution control strategy” to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Moreover, provisions defined in subsection 5.6.3.5 of same section, specially authorize the Department to mandate BMPs to meet standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

### **TMDLs**

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Broad 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 greater Nanticoke watershed, in which this project is located, nutrient reductions” of 30 and 50 percent will be required for nitrogen and phosphorus, respectively.

### **TMDL Compliance through the Pollution Control Strategy (PCS)**

As indicated above, Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been proposed for the Broad Creek watershed. The TMDL calls for a 30 and 50% reduction in nitrogen and phosphorus from baseline conditions. A pollution control strategy 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, using enhanced nutrient removal wastewater technologies, and the use of stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

### **Water Resource Protection Areas**

The DNREC Water Supply Section has determined that a southwestern portion of the proposed development falls within an excellent ground-water recharge area (see following map and attached map). The review found no wellhead protection areas.

Excellent recharge areas are near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. This proposed development shows storm-water management ponds within the excellent ground-water recharge area.

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. Installing stormwater management ponds in excellent ground-water recharge areas has the potential to contaminate the ground water beneath it and infiltrate into the aquifer.

The proposed development would change the total impervious cover from 0% to approximately 25%. These numbers are based on the total area and are not specific to the excellent recharge area. The developer provided the numbers on the PLUS application.

The 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.

Further, some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within these areas, provided the applicant submits an environmental assessment recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis. Commonly, the applicant offsets the loss of recharge due to impervious cover by constructing recharge basins that convey relatively pure rooftop runoff for infiltration to ground water.

For more information:

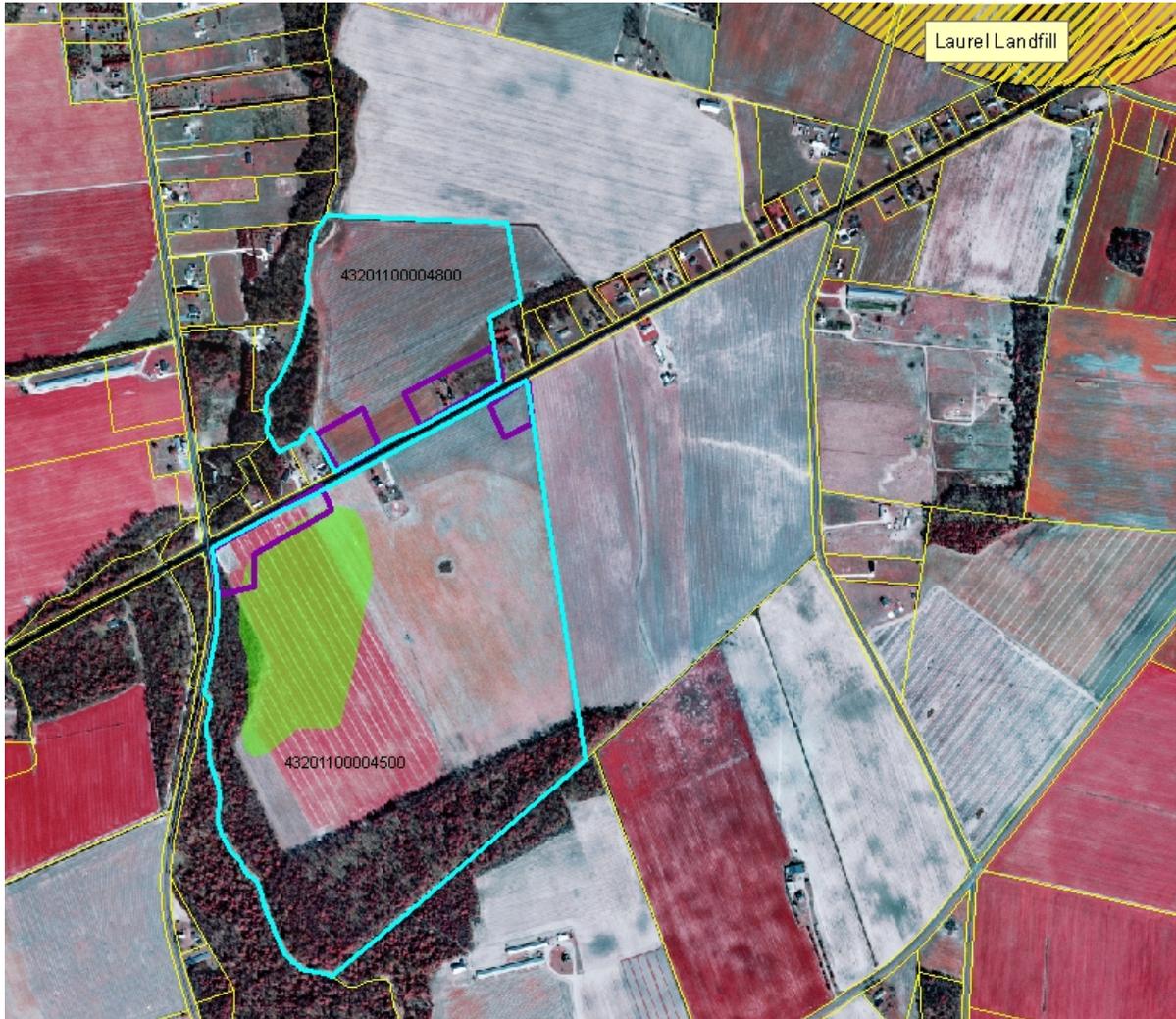
Source Water Protection Guidance Manual for the Local Governments of Delaware  
[http://www.wr.udel.edu/publications/SWAPP/swapp\\_manual\\_final/swapp\\_guidance\\_manual\\_final.pdf](http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_final.pdf)

Ground-Water Recharge Design Methodology  
[http://www.wr.udel.edu/publications/SWAPP/swapp\\_manual\\_final/swapp\\_guidance\\_manual\\_supp\\_1\\_final.pdf](http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_supp_1_final.pdf)

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 of Tuscany Creek (PLUS 2006-09-05)** Excellent ground-water recharge potential areas are highlighted in green. The purple polygons indicate areas not within the proposed project but shown in the parcel found. Groundwater management areas are labeled.



## **Water Supply**

Please note that the Parcel Identification Number (2-32-11.00-45.00 & 48.00) does not correlate to the proposed project. According to the aerial map given to us to review, the Parcel Identification Number should be 4-32-11.00-45.00 & 48.00.

The project information sheets state that water will be provided to the project by an individual on-site public utility system. Our records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 06-CPCN-28. Any public water utility providing water to the site must obtain a certificate of public convenience and necessity (CPCN) from the Public Service Commission. Information on CPCNs and the application process 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 Solid Waste Landfill, called Mt. Pleasant Dump, within 1000 feet of the proposed project on Parcel Identification Number 4-32-11.00-48.00.

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

## **Sediment and Erosion Control/Stormwater Management**

### Standard Comments:

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.

It is strongly recommended that you contact the 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.

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

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.

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.

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.

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 management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.

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.

All ponds are required to be constructed per Pond Code 378.

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:

- A Certified Construction Reviewer (CCR) is required for this project.
- 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.
- Please contact Brooks Cahall, DNREC Drainage Section, for approval to discharge to a tax ditch watershed. The District must received Drainage Section approval before issuing Sediment and Stormwater approval.
- Please demonstrate to the District that this project has an adequate outfall. You will be required to analyze the outfall ditch as ½ full for the quality and 2-year storm and full for the 10 and 100 year storm events or provide a down stream analysis.
- 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.
- Consideration should be made for any adjacent properties during the design of this project, including drainage and erosion/sediment control.
- Please provide a soil survey report for each SWM basin.
- Please incorporate “Green Technology BMPs” in the stormwater management design as stated in the section10.3.5.1 of the regulations. The District recommends green technology practices such as bioswales between the rear lots to provide drainage and water quality.

- Please provide SCD with a copy of the AutoCAD drawings and HydroCAD files to expedite the review process.

### **Drainage**

This project is within the Tussocky Tax Ditch. The design engineer should contact Brooks Cahall (see contact info below) pertaining to the use of the tax ditch for stormwater purposes.

**Sheets 7 and 9 of the PLUS application documents show the tax ditch right-of-way in woods and field as 40 feet when it is actually 80 feet for woods and 250 feet for field conditions and should be noted and displayed as such.**

This will have an impact on the useable space for the lots on the Northern and Southern borders of the development. Any reduction of rights-of-way will require a letter requesting a review to Brooks Cahall, Division of Soil & Water Conservation, Drainage Section, brooks.cahall@state.de.us. The review would require a field visit to look at the maintenance needs of the tax ditch before a change in the court order can occur to reduce the right-of-way limits.

### **Plant Rescue**

Because this project will result in forest and wetland loss or disturbance, we recommend that the developer/landowner contact the Delaware Native Plant Society to initiate a plant rescue. Selected plants from the site of disturbance will be collected by Society members and transplanted to the Society's nursery. Plants will then be used in restoration projects and/or sold at the Society's annual native plant sale. This can be done at no expense or liability to the developer/landowner". Please contact Lynn Redding at (302) 736-7726, (lynn\_redding@ml.com) or William A. McAvoy at (302) 653-2880, (william.mcavoy@state.de.us).

### **Forest Preservation**

**The applicant is strongly encouraged to re-calculate forest loss as they claim 7 acres out of 34 will be cleared, when in reality there are at least 49 lots, part of a stormwater management pond, and roadways within the forested area. There is also nothing to prevent further clearing by homeowners for sheds, pools, play areas, etc.**

DNREC recommends that the stormwater management pond be reshaped/resized to avoid clearing of trees or be omitted from the site plan. It does not make sense to destroy trees, which function to reduce flooding, to create a pond with the same purpose.

A larger area of forested open space could be created by omitting lots and associated infrastructure within the forested area (Lot #4, 5, 12-41, 89, 114-123). Larger connected areas of open space are more beneficial to wildlife and can be beneficial to residents for recreational purposes. When forested areas are cleared or converted into a 'residential woods', wildlife must either coexist with the new residents or disperse into the surrounding area. Either scenario can result in human/animal conflicts, including interactions on the roadway.

### **Nuisance Geese**

The applicant indicated that nuisance species would be considered regarding stormwater management ponds; however, specific methods were not listed. It is doubtful that the size and shape of these ponds are necessary for stormwater management purposes. The applicant is encouraged to reduce the number or size/shape of ponds being proposed. We further recommend native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (at least 50 feet) around any remaining ponds. Geese do not feel as safe from predators when their view of the area is blocked and will be less likely to take up residence in the pond. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

### **Solid Waste**

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

### **Underground Storage Tanks**

There are no LUST site(s) located near the proposed project. However, should any underground storage tank or petroleum contaminated soil be discovered during

construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

### **Air Quality**

Once complete, vehicle emissions associated with this project are estimated to be 14.1 tons (28,242.1 pounds) per year of VOC (volatile organic compounds), 11.7 tons (23,382.5 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 8.6 tons (17,252.1 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.8 ton (1,535.7 pounds) per year of fine particulates and 1,181.2 tons (2,362,414.0 pounds) per year of CO<sub>2</sub> (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 NO<sub>x</sub>; 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 NO<sub>x</sub> 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 5.7 tons (11,391.3 pounds) per year of VOC (volatile organic compounds), 0.6 ton (1,253.4 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 0.5 ton (1,040.1 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.7 ton (1,342.2 pounds) per year of fine particulates and 23.1 tons (46,177.8 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 2.3 tons (4,514.7 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 7.9 tons (15,703.3 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 1,158.1 tons (2,316,236.2 pounds) per year of CO<sub>2</sub> (carbon dioxide).

|                  | VOC  | NO <sub>x</sub> | SO <sub>2</sub> | PM <sub>2.5</sub> | CO <sub>2</sub> |
|------------------|------|-----------------|-----------------|-------------------|-----------------|
| Mobile           | 14.1 | 11.7            | 8.6             | 0.8               | 1181.2          |
| Residential      | 5.7  | 0.6             | 0.5             | 0.7               | 23.1            |
| Electrical Power |      | 2.3             | 7.9             |                   | 1158.1          |
| TOTAL            | 19.8 | 14.6            | 17.0            | 1.5               | 2362.4          |

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 2.3 tons of nitrogen oxides per year and 7.9 tons of sulfur dioxide per year.

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

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

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

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

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

**State Fire Marshal’s Office – Contact: 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, 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 Sharptown 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](http://www.delawarestatefiremarshal.com), technical services link, plan review, applications or brochures.

**Department of Agriculture - Contact: Scott Blaier 698-4500**

The proposed development is in an area designated as Investment Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* do not support this type of isolated development in this area. 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.

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

Senate Bill 119, enacted by the 141<sup>st</sup> 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.

This site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Crop Land layer is present on the entire site. This designation identifies areas of the state that have viable and valuable agricultural cropland, as discussed in Governor Minner's Executive Order Number 61. Areas such as these should be preserved as such, and not developed for residential use.

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 (TDRs), 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.

#### *Tree Mitigation*

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

#### **Public Service Commission - Contact: Andrea Maucher 739-4247**

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

**Delaware State Housing Authority – Contact Vicky Walsh 739-4263**

The proposal is a site plan review for 184 residential units on 155 acres located on both sides of Sharptown Road near Branch School Road near Laurel. According to the *State Strategies Map*, the proposal is located in an Investment Level 4 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.

**Department of Education – Contact: John Marinucci 739-4658**

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.

- This proposed development is within the Laurel School District
- DOE offers the following comments on behalf of the Laurel School District.
- Using the DOE standard formula, this development will generate an estimated 92 students.
- DOE records indicate that the Laurel School Districts' *elementary schools are not at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.
- DOE records indicate that the Laurel School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2005 secondary enrollment.
- While the Laurel School District secondary and elementary schools are not currently beyond capacity, ***the district does NOT have adequate student capacity to accommodate the additional students likely to be generated from this development*** given the number of planned and recorded residential sub divisions within district boundaries. This development, in conjunction with other planned developments will cause significant burden to the Laurel School District if the developments are built and residential units are occupied, without additional educational infrastructure resources.

- The DOE requests that the developer contact the Laurel School District Administration to address the issue of school over-crowding that this development will cause.
- DOE requests developer work with the Laurel 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**

The developer should relocate the aesthetic ponds located along the property entrances to an interior, less visible location.

Due to the probable existence of excellent recharge on the site, the developer should prohibit the discharge of roof drains to impervious surfaces; require the segregation and treatment of roof run-off from mechanical system prior to discharge to the recharge area, and use best management practices to ensure that land uses and activities are conducted in such a way as to minimize the impact on, and reduce the risk of contamination to, excellent recharge areas.

The "out lots" and other undefined space should be eliminated or incorporated within the common area to be maintained by the HOA. They serve no useful purpose and will end up be a maintenance issue.

The sewage treatment plant should be located so that there will be no sound, odor, or noise impact on adjacent property.

The Sussex County Engineer Comments:

The project proposes to develop using a private central community wastewater system. We recommend that the wastewater system be operated under a long-term contract with a capable wastewater utility. The proposed project is located within the boundaries of the Western Sussex Planning Area 4. The Sussex County Engineering Department expects the planning study to be complete by August 2007. There is currently no schedule to provide service to this 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.

If Sussex County ever 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 owners expense.

For questions regarding these comments, contact Chris Calio, Sussex County Eng

**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".

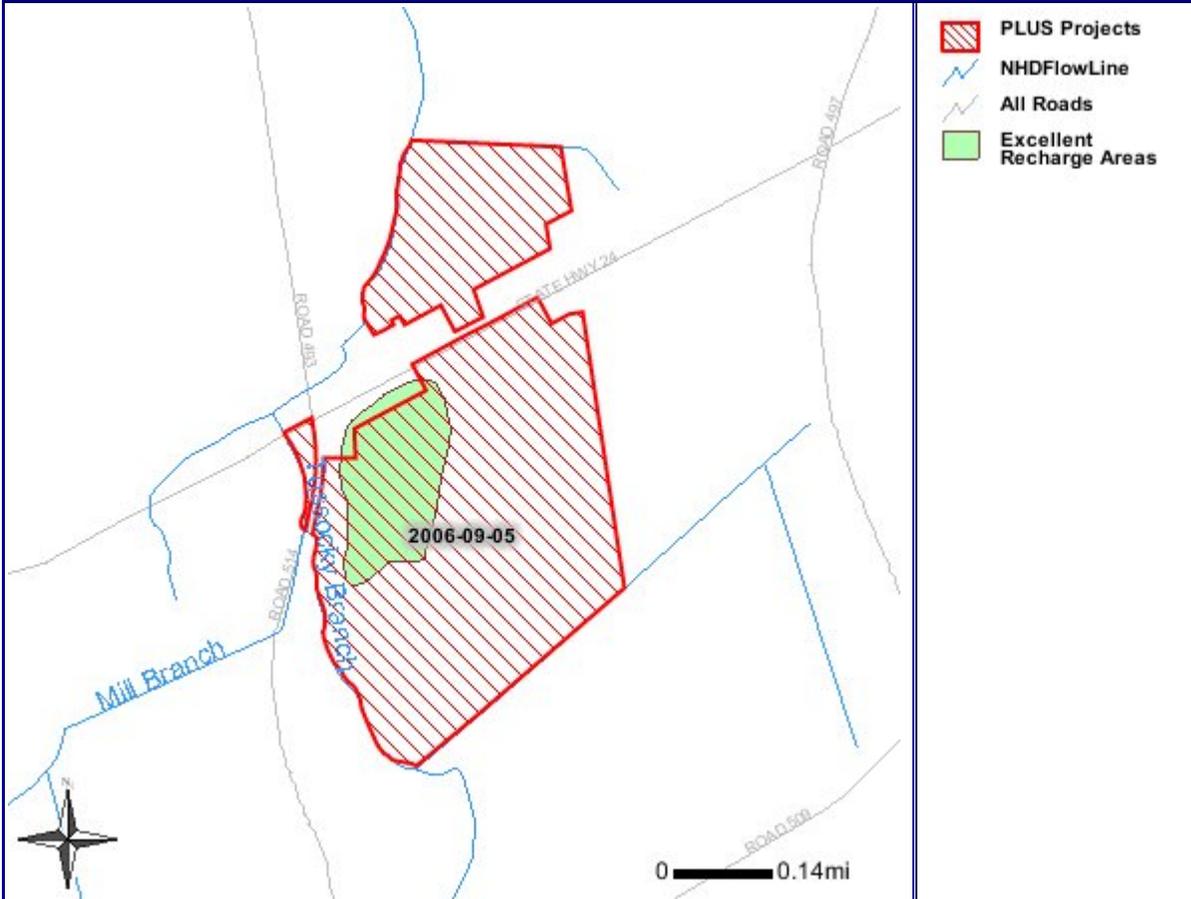
Constance C. Holland, AICP  
Director

CC: Kent County



# Tuscany Creek

2006-09-05



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

