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

February 21, 2007

Mr. Garth Jones
Becker Morgan Group, Inc.
309 S. Governors Avenue
Dover, DE 19904

RE: PLUS review – PLUS 2007-01-03; Harman Brothers, LLC

Dear Mr. Jones:

Thank you for meeting with State agency planners on January 24, 2007 to discuss the proposed plans for the Harman Brothers, LLC project to be located on the northwest corner of White Oak Road and Bayside Drive, east of SR1.

According to the information received, you are seeking site plan approval for 160 residential units on 248 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 Kent County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.

This proposal is located in Investment Level 4 according to the *Strategies for State Policies and Spending*, and is outside of a designated growth area in Kent County's certified 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: David Edgell 739-3090

This project represents a major land development that will result in 160 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in the Kent County certified comprehensive plans. 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. 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 400 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 100% of the cost of police protection in the unincorporated portion of Kent 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.

The project's location East of State Route 1 is of particular concern. It is the State's policy to discourage new growth East of State Route 1. Starting with the historic Coastal Zone Act, State actions have encouraged natural resource and agricultural preservation rather than growth and development in this area of Kent County. Tens of millions of dollars have been spent by the State and Federal governments and by private conservation organizations to protect and preserve the natural environment and sustain a vibrant agricultural area that occupies some of the best farmland in the State. State

investments East of Route 1 will be made for these purposes. No investment in infrastructure which supports growth is expected.

In addition, we would like to specifically object to the expansion of public sewer to this site. The expansion of sewer service east of State Route 1 is contrary to the State's policy of limiting infrastructure investment and new growth east of Route 1, and in violation of the Memorandum of Understanding between Kent County, the City of Dover, and the State of Delaware dated April 13, 1999 which indicates that the County will not extend sewer east of Route 1 unless the County, State, and/or City plans are amended. As noted above, the parcel in question is located in Investment Level 4 in the *State Strategies* and is currently outside of Kent County's Growth Overlay Zone. It is our position that no amendments have been made to the plans of the State, City, or County which would alter the agreements expressed in the 1999 Memorandum of Understanding.

For the reasons expressed above and 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

The Division of Historical and Cultural Affaires is not in favor of this development in Level 4. It will destroy part of the historic agricultural landscape in this area and lead to the destruction of archaeological sites. It is immediately adjacent to the National Register-listed Ridgely Tenant House (K-2040) and across White Oak Road from the Little Creek Hundred Rural Historic District (K-5686), also listed in the National Register. This development would have an adverse effect on the setting of these listed properties, introducing adverse visual and noise elements. It is close to the Octagonal School (K-114), which is owned by the Division of Historical and Cultural Affairs, and McComb Farm (K-321), both individually listed in the National Register, and will contribute to a loss of setting and introduce adverse noise from increased traffic. The parcel contains the sites of the J. Allston House (K-2042) and the J. Allston Tenant House, both of which appear on Beers Atlas of 1868. There is only a low potential here for prehistoric-period archaeological sites due to the wet soils.

This parcel is also on the proposed Route 9 Scenic and Historic Highway, and will disrupt the viewshed of this road and greatly increase the traffic along this section.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Allston House, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery

of unmarked human remains during construction can result in significant delays while the process is carried out, and the developer may want to hire an archaeological consultant to check for the possibility of a cemetery here if this development is approved. The DHCA would have to have a copy of any archaeological report done for this purpose. They will be happy to discuss these issues with the developer.

If this development is approved, the DHCA would like the opportunity to examine the area prior to any ground-disturbing activities, to see if there are in fact any archaeological sites on the parcel and to learn something about their location, nature, and extent. They request that there be sufficient landscaping around this development to block any noise or visual intrusions on the nearby historic houses and the historic district, especially along the road frontages of the development. They also request that the development be set back from Route 9.

The developer will probably be required to get an Army Corps of Engineers permit for the wetland crossing. In this case, the developer will be required to consult with the Division of Cultural Affairs office under Section 106 of the National Historic Preservation Act of 1966 and may be required to conduct archaeological testing, depending on the area of the permit. The DHCA will be happy to assist the developer through this process.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

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 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. They 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 the Green Infrastructure map (natural resource and recreation priorities and forest Land), the increase in impervious cover, the loss/fragmentation of forest, potential impacts to wetlands, and potential impacts to State Resource Areas/Natural Areas. 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.

Green Infrastructure

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

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

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

Soils

According to the Kent County soil survey update Unicorn, Leipsic, Crosiodore, Tent, and Kentuck were mapped in the immediate vicinity of the proposed construction. Unicorn is well-drained upland soil that, generally, has few limitations for development. Leipsic is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Crosiadore is a somewhat poorly-drained (potentially hydric) transitional soil between uplands and wetlands that is likely to have both soil components – these soils are likely to have limitations ranging from moderate to severe. Tent and Kentuck are poorly to very poorly-drained wetland associated (hydric) soils that have severe limitations for development. Most of the soils mapped in the vicinity of the proposed construction (est. 90%) are hydric Tent and/or Crossiodore soils.

According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested and palustrine farmed wetlands were mapped over much of subject parcel(s). Additionally, potential unmapped riparian wetlands associated with the heavily ditched

headwater reaches of an unnamed creek (or name unknown) draining into the Leipsic River, bisect the entire central portion of the area proposed for construction.

The applicant should also be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are subject to regulatory jurisdiction under Federal 404 provisions of the Clean Water Act. It is strongly recommended that a wetlands delineation be performed on this parcel before commencing any construction activities. It is further recommended that the USACE be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant's consultant delineates what they believe are nonjurisdictional isolated (SWANCC) wetlands - the USACE must be contacted to evaluate and assess the jurisdictional validity of such a delineation.

As noted previously, this parcel contains potentially unmapped headwater riparian wetlands bisecting much of the area proposed for development. Headwater riparian wetlands serve to protect water quality which helps maintain the ecological integrity and functions throughout the length of the stream, including the floodplain system and/or waterbodies further downstream. Since such streams are a major avenue for nutrient-laden stormwater and sediment runoff, their protection deserves the highest priority. Therefore, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from the landward edge of all riparian wetlands and waterbodies (including all ditches). Research by Castelle et al. (1994) has documented that an adequately-sized buffer that effectively protects the water and/or habitat quality of wetlands and streams from development is - in most circumstances - about 100-foot in width

As noted previously, a significant portion of the land area of subject parcel (est. 90%) contains wetland associated hydric soils. 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 surfacewater 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 surfacewater runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks). It is strongly recommended that the applicant avoid these soils.

Water

The project information sheets indicate that the source of water service to the project is unknown at this time and/or yet to be determined. DNREC records indicate that the

project site is not located in an area where public water service is available. 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 CPCN's and the application process can be obtained by contacting the Public Service Commission at 302-739-4247.

Should an on-site public/miscellaneous public well be needed, a minimum isolation distance of 150 ft. is required between the well and any potential source of contamination, such as a septic tank and sewage disposal area. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be located and constructed 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.

Rare Species

The DNREC has never surveyed this site, therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at or adjacent to this project site.

SRAs

The forested area on the site is State Resource Area lands. State Resource Area (SRA) lands include any open lands characterized by great natural scenic beauty, or whose existing openness, natural condition or present state of use, if retained, would maintain important recreational areas and wildlife habitat, and enhance the present or potential value of abutting or surrounding urban development, or would maintain or enhance the conservation of natural or scenic resources, including environmentally sensitive areas.

That said, the Office of Nature Preserves appreciates the efforts of the developer to mostly remain out of the SRA lands. Further, the Office of Nature Preserves urges the applicant to consider permanently preserving the lands either through the Aglands Preservation program or the Open Space Program.

Forest Loss

According to information provided on the site plan, 88.61 acres of forested land is to be preserved, however, according to question #27 on the application, 88 acres exist on site and 5 acres are to be removed which equals 83 acres preserved. The applicant should consider updating the information so that estimated numbers on the site plan and application coincide. DNREC would like to know how this forest is going to be preserved from future development or clearing. Is this portion of tax parcel LC-00-58.00-02-49.00-001 going to be placed in some mechanism of permanent conservation? Otherwise it is not truly 'preserved' as there is nothing to prevent a 'Phase II' or other future efforts to clear this woodland.

This woodland contains wetlands and is part of a larger, connected forest block. This type of habitat can support an array of plant and animal species and conversion by development will serve to displace forest dependent species. It is estimated that 20,000 acres of forested land has been cleared throughout the State of Delaware just since 2003. It is extremely important that a greater effort to preserve existing woodlands is implemented.

Although the forested acreage slated for removal is a relatively small portion of the parcel's overall land area, its strategic location as part of a much larger contiguously forested block gives it greater significance above and beyond what its small alone suggests. Furthermore, deforestation and its impacts are cumulative at the watershed scale, while forestland protection helps maintain the watershed's environmental integrity. Therefore, DNRE C strongly recommends that the applicant consider preserving this small 5-acre piece of land.

DNREC requests that tree clearing not occur April 1st to July 1st to reduce impacts to nesting birds and other wildlife species that utilize forests for breeding. This clearing recommendation would only protect those species during the breeding season; because once trees are cleared the result is an overall loss of habitat.

Inadequate wetland buffers

There should be at least a 100ft upland buffer around wetlands without lot lines or infrastructure. Upland buffers around wetlands are important so that the wetlands are protected and species that depend on these buffers for a portion of their life cycle can persist.

Plant Rescue

Because woodlands and wetlands are to be destroyed, filled, or disturbed, DNREC recommends 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).

Excellent Recharge Areas

The DNREC Water Supply Section has reviewed the above referenced PLUS application and determined that a small portion of the proposed development falls within excellent ground-water recharge area. The proposed development falls wholly within a wellhead protection area for the City of Dover. These wells withdraw water from an unconfined aquifer.

Excellent ground-water recharge potential areas are near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. Kent County has approximately 14 percent of its total area classified as "excellent" recharge. The proposed development shows the area in the excellent groundwater recharge potential as forested and no development is intended at this time.

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, 1999).

Wellhead protection areas are surface and subsurface areas surrounding a public water supply well where the quantity and quality of ground water moving toward such wells may be adversely affected by land use activities. In addition, because the wellhead

protection area the source of public drinking water, the storage of hazardous substances or wastes should not be allowed within the area unless specific approval is obtained from the relevant state, federal, or local program.
According to the information supplied on the PLUS application, the proposed development would change the impervious over from 0 % to approximately 16 %. These numbers should be calculated only on the area under development. Ideally, relocating any open space areas to the part of the parcel not within the wellhead protection area would decrease the total impervious area in the wellhead protection area. This is not possible because the entire parcel is in the wellhead protection area. Augmenting the ground-water recharge with clean rooftop run-off systems are another alternative to reducing the total impervious cover (Kauffman, 2005).

The proposed plan shows wet infiltrations basins to manage storm water within the wellhead area. Caution should be exercised in the design and management of these ponds because they are in the capture zone of the City of Dover drinking water supply. All the water entering these basins in the form of precipitation and runoff may be drawn into public water supply. The Source Water Assessment Report for the City of Dover shows that these wells draw from the unconfined Columbia aquifer and has a high vulnerability rating (DNREC, 2003). This development as proposed has the potential to cause the system to exceed drinking water standards.

References

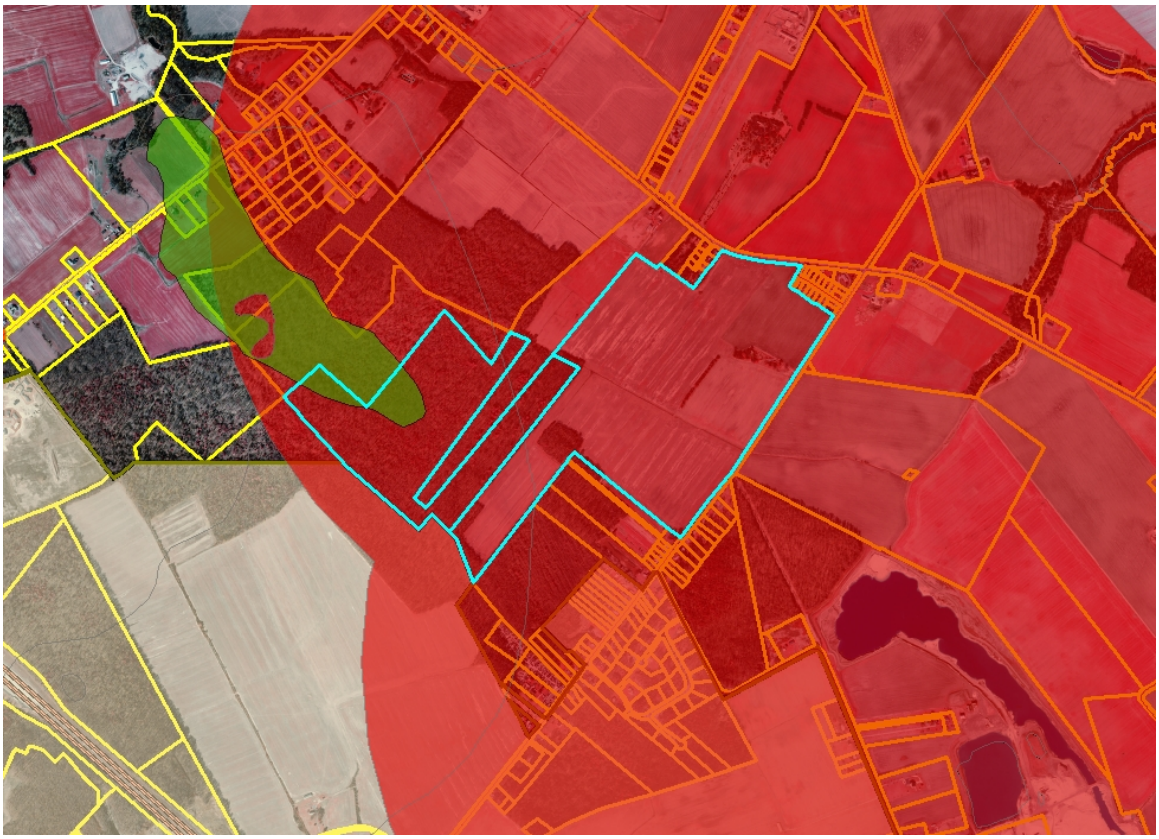
Delaware Department of Natural Resources and Environmental Control. (1999). *The State of Delaware Source Water Assessment Plan*: Dover, DE, p. 301.
http://www.wr.udel.edu/swaphome/publications.html

Kauffman, G.J., Wozniak, S.L., and Vonck, K.J., 2005, Delaware Ground-Water Recharge Design Manual: Newark, DE, Water Resources Agency, University of Delaware, p. 31.

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

Map of Harmon Brothers LLC (PLUS 2007-01-03)

The excellent recharge area is shown in green. Wellhead Protection areas are shown in red. The parcel under review outlined in light blue.



Impervious Surfaces and BMPs

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 16 percent. However, given the scope and density of this project, said estimate is **clearly inaccurate**. The reason for this underestimate is principally through the use of potential nontidal wetlands and stormwater management areas for purposes of meeting the County's open space requirements. Open space was originally intended to provide prospective residents with convenient access to lands amenable to active recreation, not a "catchall" land use to meet the County's open space requirement for purposes of maximizing "buildable" acreage. Use of wetlands or stormwater management areas in such as manner artificially reduces the project's estimated level of

post-development surface imperviousness, ultimately resulting in a significant underestimate of its actual environmental impacts. Therefore, wetlands and stormwater management areas should be excluded from the calculations for open space and surface imperviousness. Moreover, the applicant should also realize that all created forms of constructed surface imperviousness (i.e., rooftops, sidewalks, and roads) should also be comprehensively accounted for and included in the calculation for surface imperviousness. It is strongly recommended that the applicant address all of the above-mentioned concerns in their finalized calculation of surface imperviousness.

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.

As mentioned previously, a significant portion of the land area of subject parcel (est. 90%) contains wetland associated hydric or near hydric soils. 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 surfacewater 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 surfacewater runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks). It is strongly recommended that the applicant avoid these soils.

TMDL reduction requirements

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Leispic and Little Creek watersheds. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited waterbody" 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 Leipsic and Little Creek watersheds, a post-development TMDL reduction level of 40% will be required for nitrogen and phosphorus. Additionally, a TMDL reduction level of 75% will be required for bacteria.

TMDL compliance through the PCS

As stated above Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Leipsic and Little Creek Watersheds. The TMDL calls for a 40% reduction in nitrogen and phosphorus, while a TMDL of 75% will be required for bacteria – both nutrient and bacterial reductions must be from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients and bacteria to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, increasing passive wooded open space, and the use of stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Drainage

This project is located within the South Muddy Branch Tax Ditch and the White Oak Tax Ditch, which have existing tax ditch rights-of-way. The plans indicate a conflict of lots and stormwater management area within the right-of-way of the South Muddy Branch Tax Ditch. The applicant is encouraged to work with the DNREC Drainage Program and the South Muddy Branch Tax Ditch to resolve any issues of tax ditch right-of-way. Contact Robert Enright with the DNREC Drainage Program at (302) 739-9921.

The Drainage Program requests the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. Notify downstream landowners of the change in volume of water released on them. The applicant is requested to contact Robert Enright with the DNREC Drainage Program at (302) 739-9921 regarding the discharge of stormwater into the South Muddy Branch Tax Ditch.

Have all drainage easements, and tax ditch rights-of-way, recorded on deeds. 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 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.

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

Recommendations:

- 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.

- The Drainage Section requests a minimum 25-foot tree and shrub planting on the agricultural ditch buffers with the tallest trees planted on the south and west side of the ditch to maximize shading. Trees and shrubs should be native species, spaced to allow for mechanized drainage maintenance at maturity. Tree and shrub planting in this manner will provide a shading effect promoting water quality while allowing future drainage maintenance. Trees should not be planted within 5 feet of the top of the branch to avoid future blockages from roots. The buffers as well as the branch banks should be planted with herbaceous vegetation to aid in the reduction of sediment and nutrients entering into Herring Branch. Grasses, forbs and sedges planted within this buffer should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities.

Sediment and Stormwater

1. Land disturbing activities in excess of 5,000 square feet are regulated under the Delaware Sediment and Stormwater Regulations. A detailed sediment and stormwater management plan must be reviewed and approved by the Kent Conservation District prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place. The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to the Kent Conservation District. Construction inspection fees based on developed area and stormwater facility maintenance inspection fees based on the number of stormwater facilities are due prior to the start of construction. Please refer to the fee schedule for those amounts.

2. The following notes must appear on the record plan:

    - The Kent Conservation District reserves the right to enter private property for purposes of periodic site inspection.

    - The Kent Conservation District reserves the right to add, modify, or delete any erosion or sediment control measure, as it deems necessary.

- A clear statement of defined maintenance responsibility for stormwater management facilities must be provided on the Record Plan.

3. Ease of maintenance must be considered as a site design component and a maintenance set aside area for disposal of sediments removed from the basins during the course of regular maintenance must be shown on the Record Plan for the subdivision.

4. All drainage ways and stormdrain should be contained within drainage easements and clearly shown on the plan to be recorded by Kent County.

5. A soils investigation supporting the stormwater management facility design is required to determine impacts of the seasonal high groundwater level and soils for any basin design.

Comments:

1. Sections of the South Muddy Branch Tax Ditch and the White Oak Tax Ditch are located on the proposed site, which have existing tax ditch rights-of-way. All conflicts within the right-of-way's must be resolved and all right-a-ways must be shown on the plan.

2. The designer is encouraged to consider the conservation design approach and limit the amount of tree clearing required for the development of the site including the stormwater management facilities shown in the wooded areas.

3. Access to the proposed stormwater facility must be provided for periodic maintenance. This access should be at least 12 feet wide to leading to the facility and around the facility's perimeter.

4. It is recommended that the stormwater management areas be incorporated into the overall landscape plan to enhance water quality and to make the stormwater facility an attractive community amenity.

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

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

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

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

9. Stormwater management requirements are based on the entire area to be developed [Delaware Sediment and Stormwater Regulations, 10.3.3]. Ensure stormwater management will be adequately sized to treat runoff for quality and quantity requirements in the design from impervious cover.

10. This project is relying on wet ponds to manage stormwater from the site with the outlet to be a tributary of Herring Branch. This project is located in an impaired watershed, therefore additional stormwater quality practices may be required by the plan approval agency. DNREC prefers the use of Green Technology BMPs (GTBMPs) for water quality protection. GTBMPs typically rely on natural vegetation and minimal disturbance and minimal reliance on structural components. They may be constructed to promote the natural hydrologic process. Examples include, but are not limited to vegetative infiltration, riparian buffer plantings, bio-retention areas, vegetative flow conveyance, as well as recharge and surface storage in undisturbed areas.

Nuisance Geese

Stormwater management ponds may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50ft) around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 12.3 tons (24,558.3 pounds) per year of VOC (volatile organic compounds), 10.2 tons (20,332.6 pounds) per year of NOx (nitrogen oxides), 7.5 tons (15,001.8 pounds) per year of SO2 (sulfur dioxide), 0.7 ton (1,335.4 pounds) per year of fine particulates and 1,027.1 tons (2,054,273.0 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).

However if 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 5.0 tons (9,905.5 pounds) per year of VOC (volatile organic compounds), 0.5 ton (1,089.9 pounds) per year of NOx (nitrogen oxides), 0.5 ton (904.5 pounds) per year of SO2 (sulfur dioxide), 0.6 ton (1,167.2 pounds) per year of fine particulates and 20.1 tons (40,154.6 pounds) per year of CO2 (carbon dioxide)

Emissions from electrical power generation associated with this project are estimated to be 2.0 tons (3,925.8 pounds) per year of NOx (nitrogen oxides), 6.8 tons (13,655.0 pounds) per year of SO2 (sulfur dioxide) and 1,007.1 tons (2,014,118.4 pounds) per year of CO2 (carbon dioxide).

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

State Fire Marshal's Office – Contact: R. T. Leicht 739-4394

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements**:
   - Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.
   - The infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Accessibility:**

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

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

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

d. **Required Notes**:

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

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 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.

The proposed development is within 300 feet of a property permanently enrolled in the State's Agricultural Lands Preservation Program (Montz Expansion of the Muddy Branch District) (Parcel 4-00-05800-02-4600). Therefore, the farming activities conducted on this preserved property will be protected by the agricultural use protections outlined in Title 3, Del. C., Chapter 9. These protections effect adjoining developing properties. The 300 foot notification requirement affects **all new deeds** in a subdivision located in whole or part within 300 feet of an Agricultural District. Please take note of these restrictions as follows:

§ 910. Agricultural use protections.

(a) Normal agricultural uses and activities conducted in a lawful manner are preferred and priority uses and activities in Agricultural Preservation Districts. 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 use adjacent to Agricultural Preservation Districts shall be subject to the following restrictions:

(1) For any new subdivision development located in whole or in part within 300 feet of the boundary of an Agricultural Preservation District, 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 an established Agricultural Preservation District in 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."

(2) For any new subdivision development located in whole or in part within 50 feet of the boundary of an Agricultural Preservation District, no improvement requiring an occupancy approval shall be constructed within 50 feet of the boundary of the Agricultural Preservation District.

(b) Normal agricultural uses and activities conducted in accordance with good husbandry and best management practices in Agricultural Preservation Districts shall be deemed protected actions and not subject to any claim or complaint of nuisance, including any such claims under any existing or future county or municipal code or ordinance. In the event a formal complaint alleging nuisance related to normal agricultural uses and activities is filed against an owner of lands located in an Agricultural Preservation District, such owner, upon prevailing in any such action, shall be entitled to recover reasonably incurred costs and expenses related to the defense of any such action, including reasonable attorney's fees (68 Del. Laws, c. 118, § 2.).

In addition, if any wells are to be installed, Section 4.01(A) (2) of the Delaware Regulations Governing the Construction and Use of Wells will apply. This regulation states:

> (2) For any parcel, lot, or subdivision created or recorded within fifty (50) feet of, or within the boundaries of, an Agricultural Lands Preservation District (as defined in Title 3, Del. C., Chapter 9); all wells constructed on such parcels shall be located a minimum of fifty (50) feet from any boundary of the Agricultural Lands Preservation District. This requirement does not apply to parcels recorded prior to the implementation date of these Regulations. However, it is recommended that all wells be placed the maximum distance possible from lands which are or have been used for the production of crops which have been subjected to the application of land applied federally regulated chemicals.

A 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.

This site overlaps with the State's Green Infrastructure Investment Strategy Plan. Both the Crops and Forest Areas layers are present on the site. This designation indicates the land has valuable agricultural and environmental characteristics which are discussed in Governor Minner's Executive Order Number 61. They should be preserved as such, and not developed for residential or other incompatible uses.

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.

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 Vicki Walsh 739-4263

The proposal is for a site plan review of 160 single-family residential units on 248 acres located on the northwest corner of White Oak Road and Bayside Drive, East of SR 1.

According to the *State Strategies Map,* the proposal is located in an Investment Level 4 area. We oppose this proposal, as the location of the site appears to be inconsistent with where the State and County would like to see new residential development. Instead, the areas east of State Route 1 have been targeted for preservation. DSHA encourages land use proposals consistent with that use. In addition, 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.

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 Capital School District boundaries. DOE offers the following comments on behalf of the Capital School District.

1. Using the DOE standard formula, this development will generate an estimated 80 students.
2. DOE records indicate that the Capital 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 Capital School Districts' *secondary schools* ***are not*** *at or beyond 100% of current capacity* based on September 30, 2006 secondary enrollment.
4. This development will create additional elementary and secondary student population growth which will further compound the existing shortage of space.
5. The developer is strongly encouraged to contact the Capital School District Administration to address the issue of school over-crowding that this development will exacerbate.
6. DOE requests developer work with the Capital School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the that school district.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

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

Sincerely,

Constance C. Holland, AICP
Director

CC: Kent County