



STATE OF DELAWARE  
EXECUTIVE DEPARTMENT  
OFFICE OF  
STATE PLANNING COORDINATION

July 20, 2005

Mr. Rodney Wyatt  
Meridian Consulting Engineers  
26412 Broadkill Road  
Milton, DE 19968

RE: PLUS 2005-06-04, Meadowlands Estate

Dear Mr. Wyatt,

Thank you for meeting with State agency planners on July 6, 2005 to discuss the proposed plans for the Meadowlands Estate project to be located at the corner of CR 116 and 439 in Kent County. According to the information received, you are seeking to construct 104 residential units in the Level 4 area.

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 the relevant certified county and municipal comprehensive plans. **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.**

**Executive Summary**

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. *Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.*

### **State Strategies/Project Location**

- This project is proposed for an Investment Level 4 area according to the 2004 *Strategies for State Policies and Spending*. This project is also located outside of the Kent County growth zone. 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. Because the development is inconsistent with the *Strategies for State Policies and Spending*, the State is opposed to this proposed subdivision.

### **Natural and Cultural Resources**

- Approximately half of the site falls into an excellent recharge area. Imperviousness should be limited and best management practices should be employed to protect this recharge area.
- The site is impacted by the Beaverdam and Nanticoke River tax ditches. There are numerous legal, buffering, maintenance, and regulatory issues regarding these tax ditches.
- This project impacts layers of the Livable Delaware Green Infrastructure area established under Governor Minner's Executive Order #61.

### **Office of State Planning Coordination – Contact David Edgell 739-3090**

This project represents a major land development that will result in 104 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 relevant municipal and 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 270 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. Because the development is inconsistent

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

**State Historic Preservation Office (SHPO) – Contact Alice Guerrant 739-5685**

SHPO opposes this development the Level 4 area. Development will have an adverse effect on the historic agricultural landscape through destruction, and on neighboring historic farmsteads through the change in setting and the introduction of noise and visual changes. Beers Atlas of 1868 shows the J.P. Cordray House in the north central area of this parcel, and there may be archaeological remains associated with this tenant farmstead. In addition, there are areas of high and medium potential for prehistoric-period archaeological remains. If these sites in fact exist, the development will have an adverse effect on them through their destruction.

If this development proceeds, SHPO requests the opportunity to check for archaeological sites and learn something about their character before any construction takes place. SHPO recommends appropriate landscaping around the development to block the view from any remaining historic houses in the area.

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

Edward Mihm seeks to develop 104 single-family detached houses on an approximately 104-acre assemblage of parcels (MN-00-194.00-01-37.00 and 38.00). The subject land is located southeast of Farmington and more specifically on the east side of Woodyard Road (Kent Road 117) and extends from Staytonville Road (Kent Road 117) to Beebe Road (Kent Road 439). The land is zoned AR in Kent County and it would be developed by right.

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies for State Policies and Spending* and the Kent County Comprehensive Plan have deemed the type of development being proposed inappropriate for this area. As part of its commitment to support the *Strategies* and the Plan, 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. The use of transfer of development rights where this growth management tool is available is encouraged. 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 a 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 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 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. The use of transfer of development rights where this growth management tool is available is encouraged.

This particular development certainly compromises the integrity of the *Strategies* and the preservation goals inherent in many of DNREC's programs. Of particular concern are: the project impacts all three layers of the Green Infrastructure map (cropland, forest, and natural resources), significant drainage/tax ditch issues, and the project's proximity to 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 the *Strategies for State Policies and Spending*.

**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.

### **Wetlands and Soils**

According to the Kent County soil survey, wetland associated hydric soils (Fallsington & Pocomoke) cover a majority of subject parcel.

Statewide Wetland Mapping Project (SWMP) maps indicate that approximately 40 – 50% of the site is impacted by palustrine wetlands. The parcel is bisected by one blue line stream. PLUS materials indicate that impacts are anticipated for wetlands. PLUS materials do not comment on how the blue line stream will be affected; however, site plans show a road crossing.

Vegetated buffers comprised of native trees, shrubs or no-mow grasses, of no less than 100 feet should be employed from the edge of the wetland complex. Increasing the buffer beyond the recommended minimum is strongly encouraged.

The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

The applicant should 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 provisions under the Federal 404 Clean Water Act governing jurisdictional wetlands. Therefore, it is highly recommended that an Army Corps of Engineers approved field wetlands delineation be conducted before commencing any site development or construction on subject site.

The applicant should also be cautioned that an isolated wetlands jurisdictional assessment must be made by the ACOE, not a privately-paid wetlands consultant. The applicant or applicant's consultant should contact the ACOE for a final jurisdictional decision on such wetlands.

It is also recommended that the Farm Services Agency of the USDA be contacted to assess whether the farmed wetlands on subject parcel meet the recognized criteria for classification as “prior converted wetlands.” Prior converted wetlands are farmed wetlands that have drained or altered before December 23, 1985, and no longer meet the wetland criteria established under the 404 program. Such wetlands are considered exempt from regulatory protection provided that there is no proof of a continuous “fallow period” of five years or greater in that parcel’s cropping history. Parcels converted after said date regardless of cropping history are considered jurisdictional by the Army Corps of Engineers (ACOE). The contact person for assessing a parcel’s cropping history is Sally Griffin at the USDA – she can be reached at (302) 678-4182.

### **Wetland Permitting Information**

The developer and County should note that impacts to these wetlands and drainage ditches are regulated by both the DNREC Wetlands and Subaqueous Lands Section and the Army Corps of Engineers through the Delaware Subaqueous Lands Act and Section 404 of the Federal Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process.

Because there is strong evidence that federally regulated wetlands exist on site, a wetland delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified by the Corps of Engineers through the Jurisdictional Determination process.

PLUS materials indicate that road crossings will run through the stream on site. Impacts to streams and associated riparian wetlands, including road crossings, are regulated by the Subaqueous Land Section from DNREC Division of Water Resources and the Army Corps of Engineers. To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-4691 to schedule a meeting.

### **TMDLs**

The Watershed Assessment Section considers development in Level 4 areas or areas outside of designated growth zones, as scattered poorly-planned uncontrolled growth that threaten Delaware’s quality of life and its environment. Of particular concern is how this uncontrolled growth is likely to increase nutrient runoff and hamper the State’s ability to meet the nutrient reductions prescribed under the federally mandated Total Maximum Daily Load (TMDL) load program. Given these concerns and objections for building in level-four areas, the following comments are not intended to be construed as tacit approval for this project but rather demonstrate what the Section believes are

minimally acceptable regulatory guidelines and/or recommendations to mitigate some of the expected environmental impacts.

- Stormwater management areas, community wastewater disposal areas, wetlands/floodplains, and forests/buffers should not be used in the calculation of recreational open space. The Watershed Assessment Section feels that these facilities or environmentally-sensitive areas, generally, provide few recreational opportunities – that is, such areas are more valuable for water and habitat quality protection and are likely to be compromised if used for other purposes.
- Based on the conceptual plan, the applicant appears to be removing far more than the indicated 5+- acres of forest than they are reporting. Research has consistently shown that the clearing or subdividing a larger continuous forest into smaller fragments or blocks (fragmentation) – such as proposed in this project – usually results in substantial degradation of water and habitat quality within a given watershed. The Watershed Assessment Section, therefore, strongly recommends that the applicant put forth more effort to preserve more forested acreage than they are currently proposing.
- The Watershed Assessment Section feels that applicant should reduce imperviousness to the greatest degree practicable. Use of pervious paving materials in lieu of asphalt or concrete and planting trees, are examples of practical ways the applicant could help reduce surface imperviousness on this parcel. Research has shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline.
- As of April 11, 2005, stormwater best management practices must also consider water quality as well as quantity in impaired water bodies. This action will help achieve the required TMDL reductions for the Nanticoke River subwatershed.
- Site is located within the environmentally sensitive watershed containing ERES waters. Best Management practices (BMPs) that reduce nutrient loading into said waters are strongly recommended.
- TMDLs will require nutrient load reductions of 30 and 50 percent for nitrogen and phosphorus, respectively. A nutrient budget should be prepared to verify whether these nutrients are reduced to the required level following the changed land use. Contact Lyle Jones at (302)739-4590 for further information on the acceptable protocol.
- The TMDL for the Nanticoke mandates reducing nutrient loading to waters of the Nanticoke and significant nitrogen and phosphorus loading must be realized from all sources, including individual onsite wastewater systems. The Department has developed performance standards for wastewater treatment and disposal systems that are being considered as a part of the Pollution Control Strategy (PCS). If ultimately adopted, wastewater systems will be required to meet the appropriate nitrogen concentrations specified in the PCS.

### **Water Supply**

The information provided indicates that Delmarva Utilities will provide water to the proposed projects through a central public water system. Delmarva Utilities does not

currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on 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 ft. 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. Should you have any questions concerning these comments, please contact Rick Rios at (302)739-9944.

#### **Water Resource Protection Areas**

The DNREC Water Supply Section has determined that more than half of the proposed area does fall within an area of excellent ground-water recharge (see attached map). The northwest part of the proposed construction area is not in an excellent ground-water recharge area. According to the State law that created the Source Water Protection Program, county and municipal governments with more than 2,000 residents will be required to enact ordinances to protect Water Resource Protection Areas. Municipalities with fewer than 2,000 residents are encouraged to enact such ordinances. The following language has been excerpted from the Source Water Protection Guidance Manual for Local Governments, Supplement 1 - Ground-Water Recharge Design Methodology. While the local ordinances may not yet be in place, the developer may find the language useful in modifying the site plan to protect water resources.

Water Resource Protection Areas (WRPAs) are defined as (1) surface water areas such as floodplains, limestone aquifers, and reservoir watersheds, (2) wellhead areas, or (3) excellent recharge areas. The purpose of an impervious cover threshold is to minimize loss of recharge and protect the quality and quantity of ground and surface water supplies in WRPAs. New development in WRPAs may exceed the 20 % impervious cover threshold, but be no more than 50 % impervious, provided the applicant submits an environmental assessment report 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. The location of the well should be carefully considered to limit the impact that the Source Water Protection Area will impact. Centrally locating the well within the development should limit the extent that adjacent property owners could be impacted. There are several locations within the development that achieve this goal.

For more information, refer to:

[Source Water Protection Guidance Manual for the Local Governments of Delaware](http://www.wr.udel.edu/swaphome/phase2/SWPguidancemanual.html) at

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

and

[Ground-Water Recharge Design Methodology](http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf) at

[http://www.wr.udel.edu/swaphome/phase2/Publications/swapp\\_manual\\_final/swapp\\_guidance\\_manual\\_supp\\_1\\_2005\\_05\\_02.pdf](http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf)

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

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through Kent Conservation District. Contact Jared Adkins at (302) 741-2600, ext. 3, for details regarding submittal requirements and fees.

### **Drainage**

This project is located within the Beaverdam Tax Ditch and the Nanticoke River Tax Ditch. The Drainage Section strongly recommends the applicant contact the Tax Ditch organizations and the Kent Conservation District regarding the established tax ditch right-of-ways on the project.

The Drainage Section strongly recommends tax ditch right of ways be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. Designation as open space will aid in the prevention of open decks, stairs, ramps, sheds, fences, and kennels placed along the tax ditch preventing the maintenance of said ditch. The easement should be planted as a vegetated buffer to allow for future drainage maintenance or the reconstruction of the tax ditch.

This project is within the Nanticoke River Watershed, an impaired watershed with a promulgated Total Maximum Daily Load (TMDL). Blue line streams within this watershed are required to have preserved or planted riparian buffers.

The West Prong of the Beaverdam Tax Ditch is on the east side of this property and depicted as a blue line stream on the latest United States Geological Survey Topographic Quadrangle Map. Planted riparian buffers will need to be coordinated with the Beaverdam Tax Ditch to avoid conflict with adequate right of way for tax ditch maintenance.

The West Prong Sub 5 (WPS5) of the Beaverdam Tax Ditch is in the middle of this property and depicted as a blue line stream on the latest United States Geological Survey Topographic Quadrangle Map. Planted riparian buffers will need to be coordinated with the Beaverdam Tax Ditch to avoid conflict with adequate right of way for tax ditch maintenance. The Drainage Section requests the Tax Ditch right-of-way be grass and the remainder of the 100-foot buffer be planted with native trees and shrubs. Where applicable the Drainage Section recommends a tree and shrub planting along WPS5 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. If trees are allowed to be planted within the tax ditch right of way, they should not be planted within 5 feet of the top of the bank to avoid future blockages from roots. The buffer along WPS5 should be planted with herbaceous vegetation to aid in the reduction of sediment and nutrients entering into ditch. 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.

The West Prong Sub 7 (WPS7) of the Beaverdam Tax Ditch is on the north side of this property along Beebe Road. Planted buffers will need to be coordinated with the Beaverdam Tax Ditch to avoid conflict with adequate right of way for tax ditch maintenance. Where applicable the Drainage Section recommends a tree and shrub planting along WPS7 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 bank to avoid future blockages from roots. A 50-foot buffer along the south side of WPS7 should be planted with herbaceous vegetation to aid in the reduction of sediment and nutrients entering into ditch. 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.

A 25-foot buffer along all drainage ditches, excluding tax ditches, should be planted with herbaceous vegetation to aid in the reduction of sediment and nutrients entering into ditch. 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.

The Drainage Section does not have a clear understanding where the stormwater management areas will be located on this project. The Drainage Section requests the location of the stormwater management areas and outlets be clearly marked on preliminary site plans. The Drainage Section does not condone or support the removal of trees for the placement of stormwater management areas.

The Drainage Section does not have a clear understanding how stormwater will be conveyed to the stormwater management area. The Drainage Section requests the location of the stormwater conveyances be clearly marked on preliminary site plans. The Drainage Section requests the majority of the stormwater pipes on this project be located on drainage and utility easements along the streets.

The Drainage Section requests the routing of major stormwater pipes through yards be prohibited. For lack of regular maintenance and access, the Drainage Section discourages the placement of catch basins in the rear and side yards. The Drainage Section promotes the elevation of rear yards to direct stormwater towards the street for accessible maintenance of stormwater pipes.

The Drainage Section strongly recommends that drainage conveyances be located along a street and be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. Designation as open space will aid in the prevention of open decks, stairs, ramps, sheds, fences, and kennels placed along the drainage conveyance preventing the maintenance of said conveyance. The easement should be planted as a vegetated buffer and be of sufficient width to allow for future drainage maintenance or the reconstruction of the drainage conveyance as described below.

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

- Along a stormwater pipe, the Drainage Section recommends a maintenance equipment easement of 15 feet on each side of the pipe as measured from the pipe centerline. These easements should be planted and maintained as vegetated buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these easements should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance easement should be spaced to allow for mechanized drainage maintenance at maturity.

The above-mentioned easement widths are necessitated for the maintenance and/or reconstruction of drainage conveyances. For the further enhancement of water quality of the Nanticoke River watershed the Drainage Section encourages additional widths of

vegetated buffers on this project. This project is within an area designated as Green Infrastructure as decreed by Governor Minner's Executive Order 61.

The Drainage Section requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Section requests all existing ditches on the property be checked for function and cleaned, if needed, prior to the construction of homes. Wetland permits may be required before cleaning ditches.

The Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine wetlands on the property. A major portion of the woodland on this property is mapped as wetland. It should be noted the clearing of wooded wetland to accommodate residential development might not provide adequate residential drainage. The Drainage Section recommends the abolishment of all lots within the wooded wetland on this project.

### **Forests**

According to 2002 aerial photos there is a forested area in parcel. The developer is strongly encouraged to enhance forested resources on site. There are numerous opportunities on this site to improve the extent and function of forested buffers, particularly along the Nanticoke River.

The developer should seriously consider placing the forest into a permanent conservation easement or other binding protection as the forested area is extremely beneficial to the region and to Delaware's Green Infrastructure. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

### **Open Space**

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas. Doing so will preserve and expand the existing buffers on site and its value for birds and wildlife and it will create recreational opportunities for residents.

In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

### **Site Visit Request**

Based on review of topographic maps, aerial photographs, the DNHP botanist requests the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. His observations would allow us to make more informed comments on this project and would allow the applicant the opportunity to reduce potential impacts to rare species. Please contact Bill McAvoy at (302) 653-2880 to set up a site visit.

### **Potential Hunting Issue**

Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100yds of a dwelling is prohibited and the applicant may want to contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100yds of their property for hunting if there is not buffer between lot lines and the adjacent property line.

### **Nuisance Waterfowl**

Stormwater management ponds that remain in the site plan may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. DNREC recommends 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 8.0 tons (15,962.9 pounds) per year of VOC (volatile organic compounds), 6.6 tons (13,216.2 pounds) per year of NOx (nitrogen oxides), 4.9 tons (9,751.2 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.4 ton (868.0 pounds) per year of fine particulates and 667.6 tons (1,335,277.5 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 3.2 tons (6,438.6 pounds) per year of VOC (volatile organic compounds), 0.4 ton (708.4 pounds)

per year of NO<sub>x</sub> (nitrogen oxides), 0.3 ton (587.9 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 0.4 ton (758.7 pounds) per year of fine particulates and 13.1 tons (26,100.5 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.3 tons (2,551.8 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 4.4 tons (8,875.8 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 654.6 tons (1,309,177.0 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	8.0	6.6	4.9	0.4	667.6
Residential	3.2	0.4	0.3	0.4	13.1
Electrical Power		1.3	4.4		654.6
TOTAL	11.2	8.3	9.6	0.8	1335.3

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.3 tons of nitrogen oxides per year and 4.4 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. It is recommended that this project development and other residential proposals increase the energy efficiency of their homes.

**State Fire Marshal’s Office – Contact Duane Fox 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:**

- 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)
- Where a water distribution system is proposed for single family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required. (One & Two- Family Dwelling)
- Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

b. **Fire Protection Features:**

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

c. **Accessibility**

- All premises which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Woodyard Road, Staytonville Road, and Beebe 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 [www.delawarestatefiremarshal.com](http://www.delawarestatefiremarshal.com).

**Department of Agriculture - Contact Milton Melendez 698-4500**

The Delaware Department of Agriculture opposes the Meadowland Estates application due to the project's proximity to properties that have high agricultural value. The Department of Agriculture encourages the use of this property to be consistent with that of the surrounding agricultural parcels. The project is also located in a designated Level 4 area, on which the State of Delaware promotes agricultural and natural resource preservation.

The Delaware Forest Service in cooperation with the Office of State Planning recognizes that this proposed development falls within a Level 4 area. As defined, a Level 4 area is one least likely to receive any state monies to support the needed infrastructure to sustain this proposed community. The Delaware Forest Service reserves the right to comment on this development at this time.

The Delaware Forest Service encourages the developer to seek other use for this site that is supportive of the agriculture resources found in and around this site. The Delaware Forest Service offers its assistance to develop these new uses, to learn more please contact our offices at (302) 349-5754.

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

For both water and wastewater, the project is not within a certificated area. Should the developer seek water service from a public utility, the utility will need to apply to the

Commission for a Certificate of Public Convenience and Necessity (CPCN). Additional requirements apply if the water service provider is a new water utility. Should the developer seek wastewater services from a non-governmental entity, and there would be 50 or more customers served, the provider will need to apply to the Commission for a Certificate of Public Convenience and Necessity (CPCN). Additional requirements may apply if the provider has not previously been awarded a CPCN. Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines.

**Delaware State Housing Authority – Contact Jimmy Adkins 739-4263**

This proposal is to develop 104 units on 104 acres located on the east side of Woodyard Road, between Beebe Road and Staytonville Road, east of Farmington and adjacent to the upper reaches of the Nanticoke River. According to the *Strategies for State Policies and Spending*, the proposal is located in a Level 4 area and outside the growth zone. As a general planning practice, DSHA encourages residential development in areas where residents will have proximity to services, markets, and employment opportunities such as Level 1 and 2 areas outlined in the *Strategies*. 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.

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,



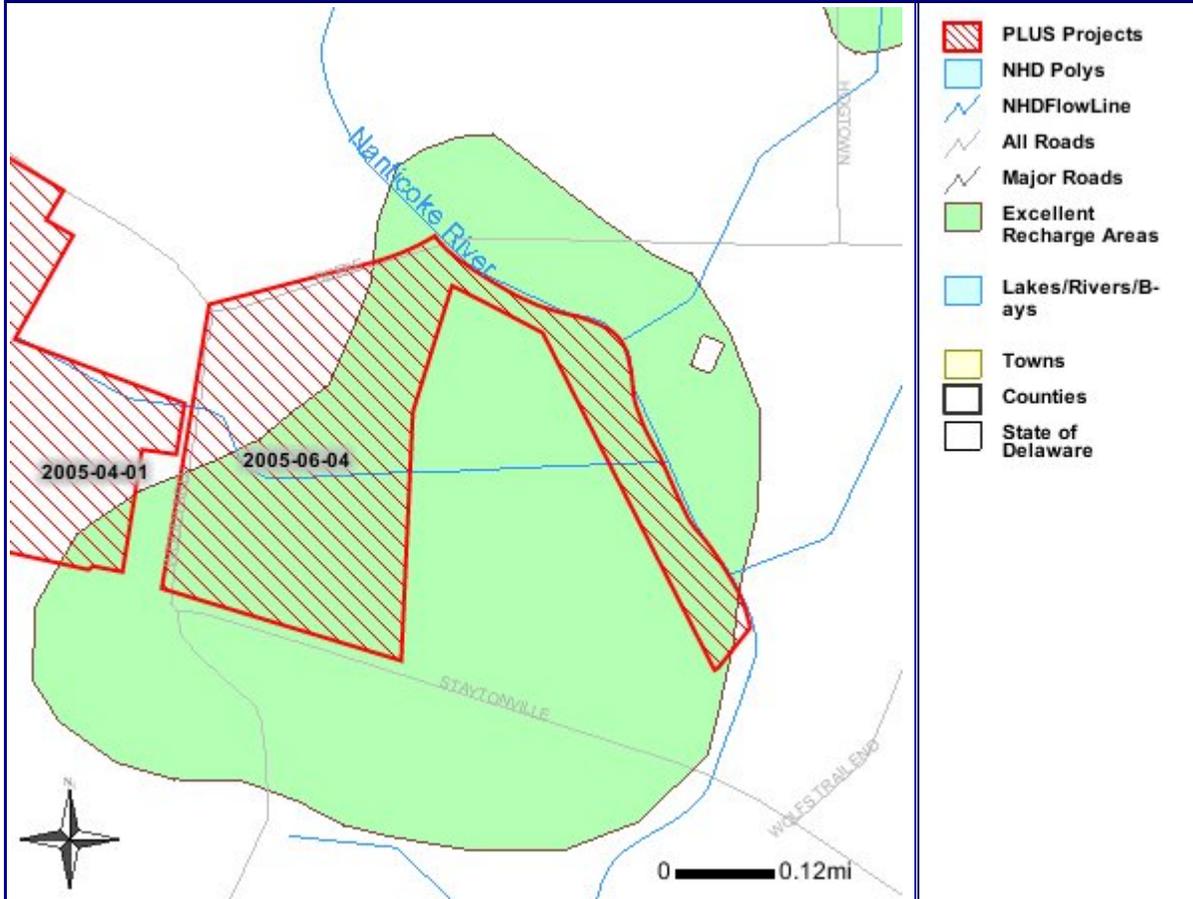
Constance C. Holland, AICP  
Director

CC: Kent County



# Meadowland Estates

2005-06-04



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

