



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

August 14, 2007

Randy Duplechain
Davis, Bowen & Friedel
23 N. Walnut Street
Milford, DE 19963

RE: PLUS review – PLUS 2007-07-03; Reserve at Warner Meadows

Dear Mr. Duplechain:

Thank you for meeting with State agency planners on July 25, 2007 to discuss the proposed plans for the Reserve at Warner Meadows project to be located on the north side of Warner Road, Approximately 1,725 feet east of Bowman Road.

According to the information received, you are seeking site plan approval for 124 residential units on 69.55 acres.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as 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.

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 located in Investment Levels 2 and 3 according to the Strategies for State Policies and Spending. The majority of the parcel is in Level 3. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments will support growth in these areas, but please be advised that the State may have other priorities in the near term future.

Street Design and Transportation

- Warner Road is classified as a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads.
- DelDOT will require the developer to provide a 15-foot wide permanent easement along the property frontage on Warner Road.
- The subject land is located on the outside of a substandard curve in Warner Road. Ultimately, it may be preferable to realign the road away from the subject land to improve this curve, or to build a roundabout, with the fourth leg serving the Warner Enterprises, Inc. parcel (Tax Parcel MD-00-174.00-01-03.00-000). As an interim measure, however, DelDOT anticipates requiring the developer to convert the curve to a stop-controlled T intersection with the proposed Woodrest Drive being one side of the top of the T. Mr. Herb, will determine the specific improvements as part of the subdivision plan review.
- While the proposed development does not meet DelDOT warrants for a traffic impact study (TIS), they believe it meets Kent County's warrants for one and recommend that the developers contact the Kent County Department of Planning to determine whether it will require a TIS.
- Without prejudging the results of the TIS, if one is required, DelDOT anticipates requiring the developer to contribute to the cost of improving Warner Road from Bowman Road (Kent Road 401) to US Route 113 to meet DelDOT's local road standards. The developer's site engineer should contact Mr. Herb regarding

specific requirements for streets, access and off-site improvements, but if a TIS is required the off-site improvements will be based on a review of that TIS.

Natural and Cultural Resources

- The application states that 100-foot stream buffers will be provided, but only 25-foot wetland buffers are planned. All of the lots and infrastructure appear to be outside of the 100-foot stream buffer as depicted in the site plan, so we are unsure where only 25ft wetland buffers occur. The State recommends that you omit or relocate any lots and infrastructure that are within 100 ft. of wetlands. If the site plan is correct, and you are planning a 100 ft. buffer, we commend you.
- The Water Supply Section recommends moving the stormwater management ponds to an area outside the excellent ground-water recharge potential area or use an advanced management system that pre-treats the stormwater before infiltration.
- The proposed development would change the impervious from 1% to approximately 60%. Ideally, relocating any open space areas to the part of the parcel within the excellent ground-water recharge area would decrease the total impervious area.
- Increase the side yard setback to 15 feet on all properties with a drainage easement on the side.
- 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 placed next to the catch basin.
- Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction.
- Preserve existing riparian buffers on this site to aid in the reduction of nutrients, sediment, and other pollutants entering the watershed.

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

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

This project is located in Investment Levels 2 and 3 according to the Strategies for State Policies and Spending. The majority of the parcel is in Level 3. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments will support growth in these areas, but please be advised that the State may have other priorities in the near term future.

We encourage you to design the site with respect for the environmental features which are present, particularly the stream, woods and wetlands around the perimeter of the site. It appears that the site design has provided a 100' buffer from the stream, which ensures that much of the forest and wetland areas on the site are also protected from disturbance. Please see DNREC's comments below as they relate to recommended upland buffers and other design measures that will further protect environmental resources on this site.

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

According to the historic resources and documents at the State Historic Preservation Office in reference to this property, there are dwellings along with agricultural complexes (farm buildings) in the area of this property.

One of them is near this property, and the other is on this property. The one that is near this property is located off Rd.406 and east of Rd.401 a 20th century (1900s) dwelling-agricultural complex, also known as the Dead Horse Farm, which was probably built sometime during the 1930s (refer to CRS site K-4927).

On the property is a 20th century (1900s) dwelling-agricultural complex, which was probably built between the years of 1929 – 1930 (refer to CRS site K-4928). Farms of this period are less likely to have family cemeteries associated with them, but 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.

In addition the developer should be aware that it is possible that archaeological sites, which may not have been found or discovered at this time could still be remaining somewhere on this property (parcel) or project area. These archaeological sites can be prehistoric or historic.

If this development is approved or proceeds, the State Historic Preservation Office of the Division of Historical & Cultural Affairs 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 property or project area and to learn something about their location, nature, and extent. If you would like to discuss this information or other issues further, contact the State Historic Preservation Office Division of Historical & Cultural Affairs at (302) 744-7400 ext.25, and we will be glad to assist you.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) Warner Road is classified as a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads. Therefore they will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- 2) DelDOT will require the developer to provide a 15-foot wide permanent easement along the property frontage on Warner Road. Ordinarily they would also require the developer to provide a 10-foot wide shared use path within that easement, but due to the limited amount of site frontage, they may only require the easement in this case. The DelDOT project manager for Kent County, Mr. Brad Herb, will determine the specific improvements as part of the subdivision plan review. He may be reached at (302) 266-9600.
- 3) DelDOT commends the developer for providing the proposed stub streets to the Lester W. Warner and Warner Enterprises, Inc. parcels, respectively Tax Parcels MD-00-174.00-01-01.00-000 and MD-00-174.00-01-03.00-000, and placing Woodrest Drive against the property line shared with Warner Enterprises. These features will provide ample opportunities for connection to future developments on those lands.
- 4) The subject land is located on the outside of a substandard curve in Warner Road. Ultimately, it may be preferable to realign the road away from the subject land to improve this curve, or to build a roundabout, with the fourth leg serving the Warner Enterprises, Inc. parcel (Tax Parcel MD-00-174.00-01-03.00-000). As an interim measure, however, DelDOT anticipates requiring the developer to convert the curve to a stop-controlled T intersection with the proposed Woodrest Drive being one side of the top of the T. Again, Mr. Herb, will determine the specific improvements as part of the subdivision plan review.

- 5) While the proposed development does not meet DelDOT warrants for a traffic impact study (TIS), they believe it meets Kent County's warrants for one and recommend that the developers contact the Kent County Department of Planning to determine whether it does. If the County requires a TIS, DelDOT would like to be actively involved in the scoping and review of that study. Because such studies typically take as long as a year to complete, if one is required DelDOT recommends that developers have their traffic engineer meet with them and the County as soon as possible to set a scope of work for the study. Mr. Troy Brestel, a project engineer in the Development Coordination Section, will serve as the DelDOT contact in this regard. He may be reached at (302) 760-2167.
- 6) Without prejudging the results of the TIS, if one is required, DelDOT anticipates requiring the developer to contribute to the cost of improving Warner Road from Bowman Road (Kent Road 401) to US Route 113 to meet DelDOT's local road standards. Those standards include 11-foot lanes and 5-foot shoulders. Because the subject land is only one of several large parcels along Warner Road and because the existing road can accommodate the subject development, by itself, DelDOT anticipates requiring the improvements, except for the interim improvements mentioned in Comment 3 above, and this developer's contribution toward them, only when other parcels along Warner Road are developed.
- 7) The developer's site engineer should contact Mr. Herb regarding specific requirements for streets, access and off-site improvements, but if a TIS is required the off-site improvements will be based on a review of that TIS.

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

Soils

According to the Sussex County soil survey update, Sassafras, Downer, Fort-Mott and Longmarsh were mapped in the immediate vicinity of the proposed construction. Sassafras, Downer, and Fort Mott are well-drained upland soils that, generally, have few limitations for development. Longmarsh is a very poorly-drained wetland associated (hydric) floodplain soil that has severe limitations for development.

Wetlands

According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested headwater riparian headwater wetlands bound the entire western and eastern portions of subject project area. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife.

As noted previously, the palustrine headwater water riparian wetlands bound the entire eastern and western boundaries of the development area. 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 water bodies further downstream. Since headwater riparian wetlands serve as natural buffers that protect the water and habitat quality of streams from sediment and nutrient-laden runoff, their protection deserves the highest priority. Therefore, the Watershed Assessment Section recommends that the applicant maintain a minimum 100-foot upland buffer from the landward edges of all riparian wetlands and water bodies. Buffer widths less than 100-foot have been found to be insufficient to mitigate impacts to water quality. A literature review of existing buffer research by Castelle et al. (1994) has documented consensus among researchers that a 100-foot upland buffer is the minimum buffer width necessary, under most circumstances, to protect water quality.

Wetland Permitting Information

Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers (USACE, or “the Corps”) through Section 404 of the Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Corps 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. The wetland delineation should be verified by the Corps through the Jurisdictional Determination process.

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting. The developer should note that both DNREC and the Corps discourage allowing buildings and associated infrastructure to contain wetlands to minimize potential cumulative impacts.

Impervious Cover

Based on information provided by the applicant in the PLUS application, post-development surface imperviousness on this parcel was estimated to reach 60 percent. However, it was unclear from the PLUS application whether all forms of constructed surface imperviousness were comprehensively considered.

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

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Mispillion River watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the greater Mispillion River watershed, "target-rate-nutrient reductions" of 57 percent will be required for nitrogen and phosphorus. Additionally, "target-rate-reductions" of 87 percent will be required for bacteria.

TMDL Compliance through the PCS

As indicated above, Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been proposed for the Mispillion watershed. The TMDL calls for a 57 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for an 87 percent reduction in bacteria. A pollution control strategy (PCS) will be used as a regulatory framework to ensure that these nutrient reduction targets are attained. The

Department has developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional nutrient reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, increasing passive, wooded open space, and the use of green-technology stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Supply

The information provided indicates that Artesian Water Company or the City of Milford will provide well water to the proposed projects through a central public water system. DNREC files reflect that neither Artesian Water Company nor City of Milford currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at 302-739-4247. Should an on-site public well be needed, it must be located at least 150 feet from the outermost boundaries of the project. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

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

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

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

Water Resource Protection Areas

The Water Supply Section has determined that a significant portion of the site falls within an excellent ground water recharge area for the Kent County (see following map and

attached map). The site plans shows a stormwater management pond in the area of excellent ground-water recharge potential.

Excellent ground-water recharge potential areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. These soils are able to transmit water very quickly from the land surface to the water table. This map category is an “indicator of how fast contaminants will move and how much water may become contaminated” (Andres, 2004, pg 1). Land use activities or impervious cover on areas of excellent ground-water recharge potential may adversely affect the quantity and quality of ground water beneath these areas.

The construction phase of stormwater management ponds requires excavation, hauling, and grading. The heavy equipment used in this phase has the capacity to compact and degrade the structure of the strata that defines the area as an excellent ground-water recharge potential area. Changes to the structural soil properties may cause significant reduction in recharge capacity. Installing stormwater management ponds in excellent ground water recharge areas has the potential to contaminate the ground water beneath it and infiltrate into the aquifer.

- The Water Supply Section recommends moving the stormwater management ponds to an area outside the excellent ground-water recharge potential area.

(OR)

- Use an advanced management system that pre-treats the stormwater before infiltration.

The Water Supply Section recommends that the portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover (DNREC, 2005). 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.

Some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area provided the applicant submit an environmental assessment recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment recharge when computed on an annual basis (Kauffman, 2005).

The proposed development would change the impervious from 1% to approximately 60%. Ideally, relocating any open space areas to the part of the parcel within the excellent ground-water recharge area would decrease the total impervious area. Augmenting the groundwater recharge with clean rooftop run-off systems are another alternative to maintaining the quality and quantity of water recharging the aquifer (Kauffman, 2005).

- The proposed development exceeds DNREC guidelines for impervious surface. Water Supply recommends reducing impervious cover to at least less than 50%.
- Water Supply recommends augmenting the groundwater recharge with clean rooftop run-off systems.
- DNREC Water Supply recommends a climate balance study to assure predevelopment recharge

In addition, because the excellent ground water recharge area can so quickly affect the underlying aquifer if contaminants are spilled or discharged across the area, 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.

References

Andres, A. Scott, 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware: Delaware Geological Survey Report of Investigations No. 66, p. 14.

<http://www.udel.edu/dgs/Publications/pubform.html#nvestigations>

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

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

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

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

Map of Reserves at Warner Meadows (PLUS 2007- 07- 03)

Excellent ground-water recharge potential area shown in green. The parcel under review is outlined in black.



Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through Kent Conservation District. Contact

Jared Adkins, Program Manager, at (302) 741-2600, ext. 3, for details regarding submittal requirements and fees.

Drainage

1. The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.
2. The Drainage Program encourages the elevation of rear yards to direct water towards the streets where storm drains are accessible for maintenance. However, the Drainage Program recognizes the need for catch basins in yards in certain cases. Therefore, catch basins placed in rear and side yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, pools, and kennels can hinder drainage patterns as well as future maintenance to the storm drain or catch basin. Deed restrictions, along with drainage easements recorded on deeds, should ensure adequate future maintenance access.
3. Increase the side yard setback to 15 feet on all properties with a drainage easement on the side. The increase will allow room for equipment to utilize the entire easement and maneuver free of obstructions if the drainage conveyance requires periodic maintenance or future re-construction. The side yard setback would only increase on the side with the drainage easement.
4. 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 placed next to the catch basin.
5. Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage 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.

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

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

Open Space

The developer is strongly urged to consider alternatives to mowed grass within community open space areas, especially along wetland buffers/stormwater management facilities. Mowing and other maintenance costs from lawn areas can become a substantial burden for community maintenance associations. There may be areas within the development that are appropriate for warm or cool season grasses. The maintenance costs associated with meadow type grasses are much lower than those of lawn grasses, and provide food and habitat for birds and other wildlife and can help reduce non-point source pollution. The developer is encouraged to review "Community Spaces, Natural Places: A guide to restoration, management, and maintenance of community open space". This document provides a reference of practical and successful open space management techniques that emphasize natural landscape alternatives other than turf grass management. The guidebook is available online at: <http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/dcmp/>.

Rare Species and the State-owned Tubmill Pond

DNREC has not surveyed this parcel; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at this project site. They do, however, have records of rare fish and aquatic plant species associated with Tubmill Branch and Pond. Run-off generated by this development could impact these species as well as this State-owned pond if adequate wetland buffers are not left intact and if stormwater is not prevented (or at the very least highly filtered) from entering the stream. Tubmill Pond is a publicly owned pond managed by the DNREC Division of Fish and Wildlife, and should be protected from degradation by a private development.

State Natural Heritage Site

Because of the presence of rare species, Tubmill Branch (associated wetlands and riparian buffer) lies within a State Natural Heritage Site. This is one of the criteria used to determine the presence of Critical Resource Waters. The final decision regarding Critical Resource Waters, if this is an issue, may be made by the U.S. Army Corps of Engineers

(USACE, or “the Corps”). The information above will aid the Corps in this determination.

Wildlife Habitat

The Division of fish and Wildlife is charged with conserving and managing the states wildlife (see www.fw.delaware.gov and the Delaware State Code, Title 7) and protection of wetland and forested habitat is of utmost concern. We appreciate that almost all of the forest on this property is being left intact (99% according to site plan), especially since the majority of the forest forms the riparian buffer to Tubmill Branch.

The application states that 100-foot stream buffers will be provided, but only 25-foot wetland buffers are planned. All of the lots and infrastructure appear to be outside of the 100-foot stream buffer as depicted in the site plan, so we are unsure where only 25ft wetland buffers occur. Therefore, the recommendation below is made based on this uncertainty:

- 1) Omit or relocate lots and infrastructure that are within 100 feet of wetlands.

Wetlands (tidal and non-tidal) and the upland buffers that surround these wetlands provide habitat for a variety of plant and animal species. Despite county requirements, scientific research indicates buffers less than 100 feet are not adequate for protecting water quality. Some aquatic species are especially sensitive to water quality changes and adequate filtration of sediments and run-off from pavement and lawns is very important. In addition, wetland buffers serve as critical habitat for wetland dependent species which utilize upland buffers during a portion of their life cycle (some species require even more than 100 feet). Buffers along water courses are also used as a travel corridor by numerous wildlife species.

Nuisance Species

The applicant indicated that nuisance species would be considered, however, specific methods were not listed. To deter a large concentration of nuisance geese, we recommend native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (at least 50 feet) around stormwater management ponds. Geese do not feel as safe from predators when their view of the area is blocked and will be less likely to take up residence in the pond. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs,

securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with 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 9.5 tons (19,032.7 pounds) per year of VOC (volatile organic compounds), 7.9 tons (15,757.8 pounds) per year of NOx (nitrogen oxides), 5.8 tons (11,626.4 pounds) per year of SO₂ (sulfur dioxide), 0.5 ton (1,034.9 pounds) per year of fine particulates and 796.0 tons (1,592,061.6 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 3.8 tons (7,676.8 pounds) per year of VOC (volatile organic compounds), 0.4 ton (844.7 pounds) per year of NOx (nitrogen oxides), 0.4 ton (701.0 pounds) per year of SO₂ (sulfur dioxide), 0.5 ton (904.6 pounds) per year of fine particulates and 15.6 tons (31,119.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.5 tons (3,042.5 pounds) per year of NOx (nitrogen oxides), 5.3 tons (10,582.7 pounds) per year of SO₂ (sulfur dioxide) and 780.5 tons (1,560,941.8 pounds) per year of CO₂ (carbon dioxide).

	VOC	NOx	SO ₂	PM _{2.5}	CO ₂
Mobile	9.5	7.9	5.8	0.5	796.0
Residential	3.8	0.4	0.4	0.5	15.6
Electrical Power		1.5	5.3		780.5
TOTAL	13.3	9.8	11.5	1.0	1592.1

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.5 tons of nitrogen oxides per year and 5.3 tons of sulfur dioxide per year.

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

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

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

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

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

State Fire Marshal’s Office – Contact: John Rudd 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.
- Where a water distribution system is proposed for townhouse type dwellings it shall be capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 800 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 the main thoroughfares must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

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
- Townhouse 2-hr separation wall details shall be shown on site plans
- 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 Delaware Department of Agriculture has no objections to the proposed project. The project is within Kent County's designated growth zone, and the *Strategies for State Policies and Spending* encourages environmentally responsible development in Investment Level 2 and 3 areas.

The proposed development is adjacent to a property preserved through the State's Agricultural Lands Preservation Program (Kimbowrosa District, Tax Map Parcel No. 5-00-16200-01-6800). Therefore, the 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.

This site contains 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.

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

This proposal is for a site plan review for 124 residential units on 69 acres located on the north side of Warner Road, approximately 1,725 feet east of Bowman in Milford. According to the *State Strategies Map*, the proposal is located in an Investment Level 2 and Level 3 area and inside the growth zone. As a general planning practice, DSHA encourages residential development inside growth zones, where residents will have proximity to services, markets, and employment opportunities. Furthermore, DSHA encourages residential development in Level 2 areas that are affordable to first time homebuyers. DSHA supports the fact that this proposal targets the full range of incomes including first time homebuyers. According to the most recent real estate data collected by DSHA, the average home price in Kent County is \$195,000. However, families earning respectively 100% of Kent County's median income only qualify for mortgages of \$176,817, thus creating an affordability gap of \$18,183. The provision of units within reach of families earning at least 100% of Kent County's median income will ensure housing that is affordable to first time homebuyers.

Department of Education – Contact: John Marinucci 735-4055

This proposed development is within the Milford School District. DOE offers the following comments on behalf of the Milford School District.

1. Using the DOE standard formula, this development will generate an estimated 62 students.
2. DOE records indicate that the Milford School Districts' *elementary schools are at or beyond 100% of current capacity* based on September 30, 2006 elementary enrollment.
3. DOE records indicate that the Milford School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2006 secondary enrollment.
4. The Milford School District has communicated to the DOE the district's lack of capacity at all grade levels given the number of planned and recorded residential sub divisions within district boundaries.

5. This development will create significant additional elementary and secondary student population growth which will further compound the existing shortage of space experienced by the Milford School District. The developer is strongly encouraged to contact the Milford School District Administration to address the issue of school over-crowding that this development will exacerbate.
6. DOE requests developer work with both the Milford 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 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,

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

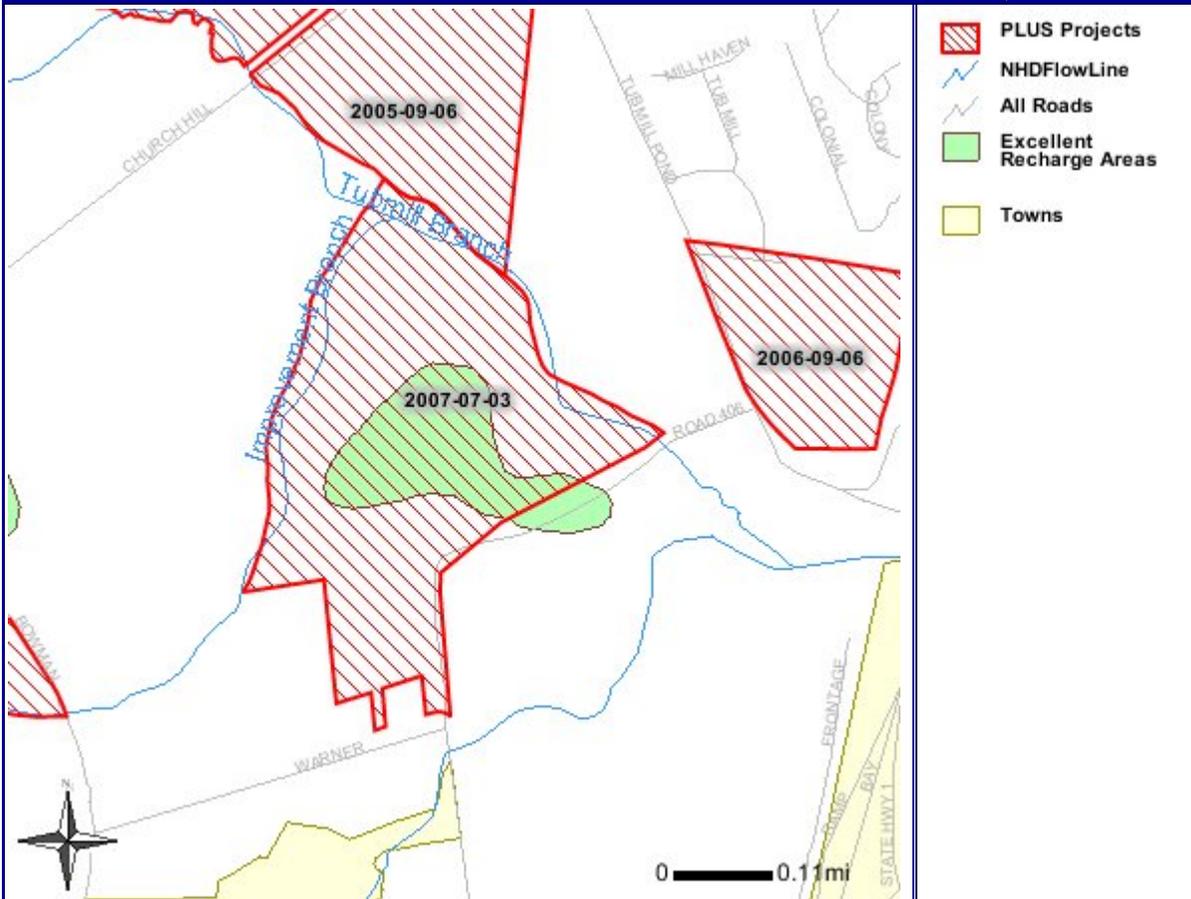
Constance C. Holland, AICP
Director

CC: Kent County



Reserve at Warner Meadows

2007-07-03



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

