

# McCCRONE

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October 3, 2006

Ms. Constance C. Holland, AICP  
Director  
Delaware Office of State Planning Coordination  
540 S. DuPont Hwy.  
Dover, DE 19901  
Phone: (302) 739-3090  
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Re: PLUS review – PLUS 2005-08-01; Bridlewood at Baywood

Dear Constance,

This letter is in response to comments received from the Delaware Office of State Planning Coordination following PLUS review of the Bridlewood at Baywood in Sussex County, Delaware. The PLUS Comments are included herein with [our responses are in blue.]

## 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 proposal is located within an area designated as Investment Levels 3 and 4 according to the Strategies for State Policies and Spending and in the Environmentally Sensitive Developing Area according to the Sussex County Comprehensive Plan. In the Environmentally Sensitive Developing Area, the presence of Investment Level 4 indicates the presence of sensitive natural resources on the site. Generally, the State would recommend a site design that is more sensitive to the natural environment and preserves more of the existing forest on-site. [It is noted that Bridlewood at Baywood is located with the Environmentally Sensitive Developing Area.]

## **Street Design and Transportation**

- Right-of-way dedication will be required along the frontage of Banks Road and Green Road. [Right-of-way dedication along the frontage of Banks Road and Green Road will be provided.]
- A 15-foot multi-modal paved path will be required along the frontage of Banks Road and Green Road. [A 10-foot wide paved multi-modal path will be provided within a 15-foot wide permanent easement across the frontage of Banks Road and Green Road.]
- DelDOT anticipates requiring the developer to realign the substandard curve on Green Road between the two entrances as part of the entrance construction and to dedicate right-of-way to allow the future realignment of the other substandard curve at the east edge of the property. [The developer will realign the substandard curve on Green Road and provide a dedicated right-of-way to allow for future realignment at the east edge of the property.]
- The proposed pedestrian tunnel under Green Road is not acceptable. [The Developer may wish to discuss alternatives.]
- The plan shows a stub street ending at Hopkins Prong. This should be shown as a cul-de-sac or other turnaround. [A cul-de-sac has been provided at the end of the street by Hopkins Prong.]
- The proposed development should connect with the existing Winding Creek Village, which includes 3 unbuilt stub streets. [Winding Creek Village has a privately owned right-of-way and the owner would like to maintain a private community. Furthermore, it appears that some of the Winding Creek proposed connection points have been abandoned (acquired by the adjacent lot owners). Therefore, no interconnections have been proposed.]

## **Natural and Cultural Resources**

- Portions of the property are located within the 100-year floodplain. Development should be kept out of the 100-year floodplain. [All residential lots and roadways within the proposed development are anticipated to remain outside of the 100-year Floodplain.]
- PLUS materials indicate that 184 acres of the existing 237 acres of forest will be removed. This area is also designated as high value forestland on the Green Infrastructure Investment Strategy. The project should be redesigned to incorporate more forest protection. [It is noted that the area is designated as high value forestland on the Green Infrastructure Investment Strategy. Preservation of the existing forest on-site was considered during the design phase and the minimal amounts of trees are being cleared. On the single family lots, the Developer intends to clear only what is required for the house and driveway. The remainder of the lots will be selectively cleared. It is anticipated that 33% of the trees on-site will be saved.]

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

**Office of State Planning Coordination – Contact: Ann Marie Townshend 739-3090**

This proposal is located within an area designated as Investment Levels 3 and 4 according to the Strategies for State Policies and Spending and in the Environmentally Sensitive Developing Area according to the Sussex County Comprehensive Plan. In the Environmentally Sensitive Developing Area, the presence of Investment Level 4 indicates the presence of sensitive natural resources on the site. Incidentally, the Investment Level 4 portion of the site includes the forested area, and the Investment Level 3 portion of the site is comprised of the cleared area. [It is noted that the area is designated as Investment Levels 3 and 4 according to the Strategies for State Policies and Spending and in the Environmentally Sensitive Developing Area according to the Sussex County Comprehensive Plan. Preservation of existing forest on-site was considered during the design phase and the minimal amount of trees is being cleared.]

Generally, the State would recommend a site design that is more sensitive to the natural environment and preserves more of the existing forest on-site. As presented, the plan would remove 184 out of 237 acres (more than 77 percent) of forest on the site. We recommend that the site be redesigned to incorporate additional protections of natural resources. Comments submitted by DNREC and the Department of Agriculture give more detail about the environmental considerations that should be addressed in the site's design.

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

The State Historic Preservation Office (SHPO) does not support the Bridlewood at Baywood proposed development because it is in State Investment Level 4. Delaware has a strong rural heritage and many historic resources, architectural and archaeological, exist in these areas. SHPO discourages development in Investment Level 4 because development could affect the historic context of Delaware's rural heritage by intruding on agricultural lands and open space; development could affect historic architectural resources that are historically associated with Delaware's agricultural areas and open space; development could affect prehistoric and historic archaeological sites, many of which have not been recorded or studied for the important information they can provide about Delaware's history and prehistory; and SHPO encourages preservation and redevelopment in existing communities, Investments Levels 1 and 2.

Based on the review of historic maps and other data in this office, the potential for both historic and pre-historic archeological sites to survive is significant. Burials, both marked and unmarked, are protected by Delaware law. Please refer to the following sections of the Delaware State Code: (1) Title 11 Sub-Chapter 1340, titled "Desecration of Burial Places"; and (2) Title 7 Chapter 54, known as the "Delaware Unmarked Human Remains Act". For more information about these laws and the implications for the project, contact Craig Lukesic of this office at 302-736-7400. Should the developer wish to contract to do cultural resource work, the SHPO provides a list of qualified consultants at <http://www.state.de.us/shpo/PDF/Consultants.pdf>.

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

This development is proposed for an area designated as Levels 3 and 4 under the *Strategies for State Policies and Spending*. Level 3 areas are locations that are not presently designated as appropriate for development but that could be so designated in the future. With regard to Level 4 areas, however, the intent of the *Strategies* is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in such 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.

Recognizing that this project is in an Environmentally Sensitive Developing Area, as designated by the *Strategies* and the Sussex County Comprehensive Plan, DelDOT is providing a technical review.

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

The DelDOT technical comments are as follows:

- 1) A traffic impact study (TIS) was scoped for this project on April 26, 2005. Traffic counts were submitted by the developer's engineer and reviewed by DelDOT this summer. Therefore, assuming reasonable progress by the developer's engineer, DelDOT expects to receive the completed TIS by the end of 2005 and to comment to the County on the results early in 2006. [The owner is waiting to hear the results from DelDOT regarding the traffic impact study (TIS).]
- 2) Banks Road and Green Road are classified as local roads. Local roads in Delaware typically have right-of-way widths ranging from 33 to 50 feet. 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 we will require right-of-way dedication along the frontage to provide any additional width needed from this project. [Right-of-way dedication along the frontage of Banks Road and Green Road will be provided.]
- 3) DelDOT will also require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the site. Preliminarily, paths should be provided on Banks Road and both sides of Green Road. [A 10' wide paved multi-modal path will be provided within a 15' wide permanent easement across the frontage of Banks Road and Green Road.]
- 4) There is one obviously substandard curve on Green Road between the two proposed entrances and a second such curve at the east edge of the property.

DelDOT anticipates requiring the developer to realign the first curve as part of their entrance construction and to dedicate right-of-way to allow for the future realignment of the second curve by others. [The developer will realign the substandard curve on Green Road and provide a dedicated right-of-way to allow for future realignment at the east edge of the property.]

- 5) DelDOT appreciates the developer's inclusion of pedestrian trails in the site plan. However, the proposed pedestrian tunnel under Green Road is unacceptable. They have two concerns. First, they have a general objection to any new pedestrian tunnels on State rights-of-way in that they pose a security risk both for road users and for tunnel users. Second, because it is situated in a relatively low and flat area between two proposed storm water management ponds, DelDOT is concerned that it could flood. [The Developer may wish to discuss alternatives.]
- 6) There is a stub street shown on the plan terminating at Hopkins Prong. A cul-de-sac or other turnaround should be provided there. [A cul-de-sac has been provided at the street by Hopkins Prong.]
- 7) The existing subdivision of Winding Creek Village has three unbuilt stub streets that could be used to connect it to this project. Further, the right-of-way for Quail Road in Winding Creek Village runs along the edge of this project. Accordingly, it should be possible to connect the two developments, and we recommend that that be done. Because Green Road has no outlet, the proposed development would be completely dependent on the intersection of that road with Banks Road for access if a connection to Winding Creek Village is not provided. The stub street extending Quail Road seems most appropriate for a street connection. The other two stub streets seem more appropriate for bicycle and pedestrian connections.

From our mapping, it does appear that the rights-of-way could be privately owned, as well as maintained, and that could be an obstacle. Nonetheless, DelDOT recommends that the developer pursue these connections for the benefit of the residents of both communities. [Winding Creek Village has a privately owned right-of-way and the owner would like to maintain a private community. Furthermore, it appears that some of the Winding Creek proposed connection points have been abandoned. Therefore, no interconnections have been proposed.]

8) The developer's site engineer should contact the DelDOT Subdivision Manager for Sussex County, Mr. John Fiori, regarding their requirements for access. Mr. Fiori may be reached at (302) 760-2260. [A meeting will be schedule with John Fiori at a later date prior to the design stages.]

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

### **Soils**

According to the soil survey update, Fort Mott-Henlopen complex, Downer, and

Pepperbox were mapped on subject parcel. Fort-Mott complex and Downer are well drained soils with limitations associated with rapidly permeable sandy subsoils which have little or no nutrient adsorptive capacity. Pepperbox is a moderately well-drained soil that has moderate limitations for development. [The soil types and properties have been noted and will be considered during the design phase.]

## **Wetlands**

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of estuarine and palustrine tidal wetlands. PLUS application materials indicate that wetlands have been delineated. This delineation should be verified Corps of Engineers through the Jurisdictional Determination process. [The wetlands have been delineated and are shown on the drawings.]

PLUS materials indicate that wetlands will not be directly impacted by construction activities. If impacts are anticipated please note that these wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process. Impacts to wetlands should be avoided and vegetated buffers of no less than 100 feet should be employed from all wetlands and water bodies. [It is noted that the impact to the palustrine wetlands are regulated by the Army Corp. or Engineers through Section 404 of the Clean Water Act. If any permits are required the owner will obtain them prior to construction.]

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. [It is noted if any permits are required it is recommended the applicant should attend a joint permit process meeting.]

## **ERES Waters**

This project is located adjacent to receiving waters of Inland Bays designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 11.5 of Delaware's "Surface Water Quality Standards" (as amended August 11, 1999), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of nutrient runoff through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 11.5(e) of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree practicable, or where attainable, a standard requiring no discharge of pollutants. [It is noted that this development is adjacent to waters designated to have Exceptional Recreational or Ecological Significance ERES waters. In efforts to protect these waters, a pollution control strategy will be implemented during the design phase to reduce non-

point sources of nutrient run-off. BMP's will be provided per State of Delaware and Sussex County regulations.]

Presently the Inland Bays do not meet ERES water quality standards.

### **TMDLs**

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited

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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. In the Inland Bays Watershed, "target-rate-reductions" of 40 percent will be required for nitrogen and phosphorus.

The Watershed Assessment Section considers development in Investment Level 4 areas or areas outside of designated growth zones, as scattered poorly-planned uncontrolled growth that threatens 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 Section's concerns and objections for building in level-four areas, the following comments should not 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.

The proposed pollution control strategy would also require the completion of a nutrient budget for the proposed project in order to estimate how TMDL nutrient loads will change with the development of this parcel. Currently, we request that in order to verify your project's compliance with specified TMDL loading rates, a full nutrient budget be calculated. Please contact Lyle Jones of Watershed Section at 739-4590 for the acceptable protocol.

The applicant should also be made aware that the inclusion of stormwater management, wastewater treatment, buffers and wetlands as metrics for open space calculations - may understate the actual TMDL nutrient loading and, subsequently, the actual nutrient runoff as calculated from the nutrient budget protocol.

Watershed Assessment expects that the project, as proposed, would significantly further degrade the quality of adjacent waterways. It is recommended that the nutrient protocol be applied to this project in order to inform the local government as to the estimated magnitude of the additional degradation. Pursuant to Section 303(d) of the Clean Water Act, adjacent waterways have been determined to be impaired; a Total Maximum Daily Load has been developed to establish the nitrogen and phosphorous load reductions

necessary to achieve water quality standards. Not only does the project design ignore the need to reduce pollutant loadings, it promotes additional degradation. [A nutrient budget has been calculated and is in compliance with the TMDL mandate.]

### **Impervious Cover**

Since residential development significantly increases the amount of impervious cover - leading to large volumes of contaminant-laden runoff which ultimately drain into streams or waterways - the applicant is strongly urged to pursue both natural and constructed Best Management Practices (BMPs) to reduce such impacts. Reducing the amount of impervious surfaces by planting more trees and/or the use of pervious paving surfaces ("pavers") in lieu of asphalt or concrete, are examples of ways to reduce such impacts. Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. [The proposed design will incorporate various BMPs to reduce the impacts of increasing the impervious area on-site.]

### **Water Supply**

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. [It is noted that a well construction permit must be obtained from Water Supply Section prior to construction of 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. [It is noted that a well allocation permit must be obtained if the pumping rate will exceed 50,000 gallons per day at any time during construction.] 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. [It is noted that all permit applications must be prepared and signed by a licensed well contractor and only licensed well drillers may construct the wells.]

### **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 **Sussex Conservation District**. Contact Jessica Watson at (302) 856-7219 for details regarding submittal requirements and fees. [A detailed sediment and storm water management plan will be prepared prior to any land disturbing activities on site.]

As of April 11, 2005, stormwater best management practices must also consider water quality as well as quantity in impaired water bodies. [It is noted that as of April 11, 2005, storm water management practices must consider water quality as well as quantity in impaired water bodies.]

## **Drainage**

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. [All existing ditches on site will be inspected and cleaned if necessary. The owner will apply for any wetland permits if they are required.]

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. [All necessary precautions will be taken in the design stages to ensure that no drainage issues will occur offsite.]

The Drainage Section strongly recommends any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement and such easement be designated as passive open space, not owned by individual landowners. The easement should be of sufficient width to allow for future drainage maintenance as described below. [It is noted that drainage section strongly recommends any drainage conveyance between two parcels within a subdivision be dedicated as a drainage easement.]

- Along an open ditch or swale, the Drainage Section recommends a maintenance equipment zone of 25 feet measured from the top of bank on the maintenance side, and a 10-foot setback zone measured from top of bank on the non maintenance side. These zones should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species, selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be native species spaced to allow for 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 zone of 15 feet on each side of the pipe as measured from the pipe centerline. This zone should be maintained as buffers to aid in the reduction of sediment and nutrients entering into the drainage conveyance. Grasses, forbs and sedges planted within these zones should be native species selected for their height, ease of maintenance, erosion control, and nutrient uptake capabilities. Trees and shrubs planted within the maintenance zone should be spaced to allow for drainage maintenance at maturity.

The Drainage Section recommends any drainage/utility easement owned by an individual landowner should not have structures, decks, buildings, sheds, kennels, fences or trees within the drainage easement to allow for future drainage maintenance.

## **Floodplains**

Portions of the property are located within the 100-year floodplain. It is recommended

that development be kept outside the 100-year floodplain. Mandatory flood insurance purchase requirements will apply to any buildings which are located in the floodplain. [It is anticipated that the development including roadways and residential lots will remain outside the 100-year floodplain.]

## **Forests**

According to 2002 aerial photos there is a forested area is present. PLUS materials indicate that 184 acres will be removed for development. This forest tract is extremely beneficial to the region as it is connected to a larger tract of forest adjacent to Hopkins Prong and Herring Creek. Large contiguous stretches of forest like this not only provide important water and air quality benefits, but provide important habitat for many wildlife species that depend on interior forest. Clearing portions of the forest within the parcel may reduce the habitat value of the entire forest stretch.

The developer is strongly encouraged to preserve, and where possible, enhance forested resources on site, particularly mature trees. This includes minimizing the impact of development by designating open space along forested areas, which will create a buffer from homeowners and their activities. 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. The developer should seriously consider placing this forest into a permanent conservation easement or other binding protection. [Preservation of existing forest on-site was considered during the design phase and the minimal amount of forest area within the parcel is being cleared. The developer takes pride in preserving trees throughout out the project in all places possible. All of the residential lots are selectively cleared, which typically leaves 40% of the trees undisturbed on each lot. In addition, a 30' minimum buffer from adjacent properties has been provided.]

## **Open Space**

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that the developer minimize the amount of forest removal by relocating infrastructure (such as storm water management ponds) to areas outside of the forest and designating community open space along the forested 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. [It has been noted to relocate the storm water management ponds; however as a majority of the site is wooded, it is not feasible to relocate all of the storm water ponds outside of the forest.]

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. [The owner will look into establishing forested areas or meadow type grasses.]

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. [The owner will look into placing the remaining forest and/or wetlands into a permanent conservation easement or other binding protection mechanism.]

### **Rare Species**

DNREC has not surveyed this parcel, so it is unknown if there are any state-rare or federally listed plants, animals or natural communities at or adjacent to this project site. Our program botanist and zoologist requests the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. Their observations would allow DNREC 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 or Kitt Heckscher at (302) 653-2880 to set up a site visit. [A *Rare, Threatened and Endangered Species-Habitat Review* was prepared for the site by JCMECI and "No rare, threatened or endangered plant species were observed in this area and no specimen trees were noted in these areas."]

### **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 (50 feet) 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. [It is noted that DNREC recommends native plantings of tall grasses, wildflowers, shrubs, and trees by the stormwater management ponds to deter geese and swans. The owner will take this into account when landscaping the site.]

### **Mosquito Control**

Development projects that result in increased housing densities, along with concomitant residents or visitors, within 2 miles of large expanses of salt marshes or brackish wetlands, can often lead to increased demands by the public (and their elected officials) for mosquito control services, going beyond what DNREC's Mosquito Control Section currently has the budget or resources to provide. Adverse impacts upon the State's allocation of public funds for mosquito control services must be realistically recognized as the frequent consequence of approving these types of development projects; and State and local governments should then be prepared to deal with the increased budget demands for mosquito control services. Additionally, even though the EPA has scientifically determined that EPA-registered mosquito control insecticides can be

applied “without posing any unreasonable risks to human health, wildlife or the environment” (when used in accordance with all product label instructions), avoiding or reducing the use of such pesticides should be employed whenever possible. Limiting development that is too close to wetlands will aid in achieving a reduction in pesticide use. [The owner will avoid or reduce the use of pesticides whenever possible. All of the lots will be adjusted to be more than 100' from the wetlands.]

### **Underground Storage Tanks**

There are no LUST site(s) located near the proposed project. However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would be needed to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel in the contaminated areas. [The tank management branch will be notified if any underground storage tanks or petroleum contaminated soil should be located on site.]

### **Solid Waste**

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

### **Air Quality**

Once complete, vehicle emissions associated with this project are estimated to be 51.8 tons (103,605.5 pounds) per year of VOC (volatile organic compounds), 42.9 tons (85,778.3 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 31.6 tons (63,288.8 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 2.8 tons (5,633.8 pounds) per year of fine particulates and 4,333.2 tons (8,666,464.4 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 20.9 tons (41,788.8 pounds) per year of VOC (volatile organic compounds), 2.3 tons (4,598.0 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 1.9 tons (3,815.7 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 2.5 tons (4,924.0 pounds) per year of fine particulates and 84.7 tons (169,402.4 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 8.3 tons (16,562.1 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 28.8 tons (57,607.2 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 4,248.5 tons (8,497,062.0 pounds) per year of CO<sub>2</sub> (carbon dioxide).

	VOC	NOx	SO <sub>2</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Mobile	51.8	42.9	31.6	2.8	4333.2
Residential	20.9	2.3	1.9	2.5	84.7
Electrical Power		8.3	28.8		4248.5
TOTAL	72.7	53.5	62.3	5.3	8666.4

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 8.3 tons of nitrogen oxides per year and 28.8 tons of sulfur dioxide per year.

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

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

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

The DNREC Energy office 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. [It is noted that DNREC would like the developer to require the builder to construct energy star qualified homes.]

DNREC also recommends that the home builders offer geothermal and photo voltaic energy options. Applicable vehicles should use retrofitted diesel engines during construction. The development should provide tie-ins to the nearest bike paths and links to mass transport system, and fund a lawnmower exchange program for their new occupants. [It is noted that DNREC would like the developer to offer geothermal and photo voltaic energy options.]

**State Fire Marshal's Office – Contact: Duane Fox 302-856-5298**

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal,

the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

**a. Fire Protection Water Requirements:**

- Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Equestrian Center) [The water distribution for the Equestrian Center shall be designed to be capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure. Fire hydrants with 800 feet spacing will be provided.]
- Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly) [The water distribution for the Clubhouse shall be designed to be capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 800 feet spacing are provided.]
- 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) [The water distribution for a single family dwelling shall be designed to be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing will be provided.]
- 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. [Infrastructure for fire protection water shall be provided on plans, including the size of water mains for fire hydrants.]

**b. Fire Protection Features:**

- All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed. [Automatic sprinkler protection shall be installed in structures where appropriate.]
- Buildings greater than 10,000 sq.ft., 3-stories of more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements. [All required fire lane marking requirements will be followed for the associated structures.]
- Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR. [Fire Department Connection location will be shown and will be detailed.]
- Show Fire Lanes and Sign Detail as shown in DSFPR. [Fire Lanes and Sign Details will be shown in accordance with 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 Banks Road and Green Road must be constructed so fire

department apparatus may negotiate it. [The access road from Green Road to the Equestrian Center will be constructed to meet Fire Marshal accessibility requirements.]

➤ 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. [The fire department access shall be provided in such a manner that fire apparatus will be located within 100' 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. [A cul-de-sac has been provided at the street by Hopkins Prong. The cul-de-sac has been designed to accommodate fire apparatus turning around.]

➤ The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements. [No speed bumps are currently proposed at this time.]

➤ 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. [The development currently does not have proposed gates at this time.]

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

➤ Provide type of fuel proposed, and show locations of bulk containers on plan. [The proposed type of fuel will be shown on plans, as well as any locations of bulk containers.]

**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

Road Names, even for County Roads

➤ 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

[The following notes will be contained within the Final Plans:

- i. "All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"

- ii. Proposed use
- iii. Alpha or numerical labels for each building/unit
- iv. Square footage of each structure
- v. National Fire Protection Association (NFPA) Construction Type
- vi. Maximum Height of Buildings (including number of stories)
- vii. Note if building is to have sprinklers
- viii. Name of water provider
- ix. Letter from water provider approving system layout
- x. Lock Box Note (as detailed in DSFPR)
- xi. Road Names, even for County Roads]

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: [www.delawarestatefiremarshal.com](http://www.delawarestatefiremarshal.com), technical services link, plan review, applications or brochures.

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

A large portion of the proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* and the Sussex County Comprehensive Plan do not support this type of isolated development in this area. The intent of these plans is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. Generally, the Department of Agriculture does not support the proposed development which conflicts with the preferred land uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture does not support this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation.

Furthermore, the Department of Agriculture and the Department of Natural Resource and Environmental Control, along with other partners developed the State's "Green Infrastructure" Investment Strategy. This strategy identifies high-value cropland, forestland and natural resource lands for preservation and conservation. This proposed development site is designated as high value forestland on the Green Infrastructure Investment Strategy. In other words, in addition to their location in a rural area, due to their soil quality and other significant factors, these lands have been further designated by the State for conservation and preservation.

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

With all that being said, we realize this proposed development is located in area generally under intense development pressure. In addition, as part of the “Environmentally Sensitive” overlay area, this development will be served by central water and wastewater. A significant portion of the site is located in Level 3 of the State Spending Policies Map. Considering all factors, the Delaware Department of Agriculture and the Delaware Forest Service does not oppose development of this site. However, it is critical that this Developer account for the unique and important environmental features of this site and adjust design and construction accordingly. The Department asks the developer to consider the following to minimize impact to the resources within this site.

#### *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. [The “right tree for the right place” will be considered in the design phases.]

#### *Native Landscapes*

Of particular importance in this area, in order to protect sensitive habitats and control invasive species, the Delaware Department of Agriculture and the Delaware Forest Service strongly 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. [A landscape plan appropriate for this property shall be used and will encourage native trees and shrubs when possible.]

#### *Tree Mitigation*

The Delaware Forest Service encourages the developer to implement a tree mitigation program to replace trees at a minimum 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. [It is noted that the Delaware Forest Conservation Services encourages the developer to replace trees at a minimum of 1:1 ratio within the site and throughout the community.]

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

Parcel 234-18.00-2.00 is not in a Long Neck's certificated water service territory; the utility will need to apply for the CPCN. Parcel 234-18.00-2.00 is not in a Inland Bay's certificated wastewater service territory; the utility will need to apply for the CPCN. [It is noted that parcel 234-18.00-2.00 is not in Long Neck's certified water service territory. The utility company will apply for a CPCN. It is also noted that parcel 234-18.00-2.00 is not Inland Bay's certified wastewater service territory. The utility company will apply for a CPCN.]

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. [All expansion of natural gas or installation of a closed propane system will meet the Pipeline Safety Guidelines.]

**Department of Education – Contact: Nick Vacirca 739-4658**

675 dwelling units could generate an estimated 338 additional students for the Indian River School District.

Sussex County does not have school concurrence legislation at this time. We recommend that the developer submit a package to the school district for informational purposes. [It is noted that the Dept. of Education would like the developer to submit a package to the school district for educational purposes.]

If the development is approved and built, please use the following information for school transportation planning. If there are homes more than 1/2 mile from the nearest public road (outside the development), developers should plan wide enough streets so that large school buses can access and turn around (without backing) from the furthest areas within the development while picking up and dropping off students. Should there not be any sites more than 1/2 mile from the nearest public road, provisions for appropriate pick-up and drop-off at the development entrance should be included. The developer should work closely with the school district transportation supervisor: [The developer will work with the school district transportation supervisor to provide transportation services.]

**Sussex County – Contact: Richard Kautz 855-7878**

The Sussex County Engineer comments:

The proposed project is located in the Inland Bays Regional Planning Area for sewer service. The North Coastal Area Planning Study will consider sewer service for parcels in the Inland Bays Regional Planning Area. The study started in November 2004 and is expected to take 18 months to complete. The study will develop options for sewer service and make a recommendation. [The owner will be awaiting further comments and recommendations from the North Coastal Area Planning Study.]

The Bridlewood at Baywood project proposes to develop using a private central community wastewater system. It appears likely that the project will require a conditional-use approval for the treatment system. The Engineering Department recommends that the wastewater system be operated under a long-term contract with a capable wastewater utility that meets TMDL limits for Delaware's Inland Bays. In addition, they recommend they have a wastewater utility provider prior to approving the project. [Sewer service will be provided by Inland Bays Preservation Company.]

Sussex County requires design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. A sewer concept plan must be submitted to the Sussex County Engineering Department for review and approval prior to the design of the sewer system. A checklist for concept plans is attached. A review and approval of the treatment and disposal system by the Sussex County Engineering Department is also required. Disposal fields should not be counted as open space. Wastewater disposal fields should be clearly identified on recorded plots. [A sewer concept plan will be submitted to the Sussex County Engineering Department.]

When Sussex County provides sewer service, it is required that the treatment system be abandoned and a direct connection made to the County system at the developers and/or homeowners association expense. [It is noted that if the County provides sewer service in the future, it is required that the treatment system be abandoned and a direct connection made to the County system at developer and/or homeowner association expenses. However, due to the legal issues regarding this item, we decline to offer a comment at this time.]

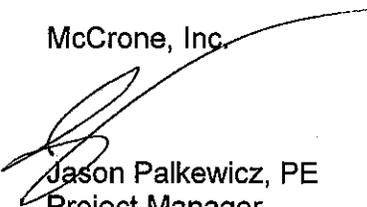
In addition, if Bridlewood at Baywood will use the existing treatment plant and other wastewater facilities serving Baywood, the Sussex County Engineering Department must be provided with a design report from a qualified engineer that shows the whole system serving Baywood has capacity for the addition of the proposed project. [A qualified engineer will provide a design report detailing the whole system serving Baywood and its capacity.]

For questions regarding these comments, contact Rob Davis, Sussex County Engineering Department at (302) 855-7820.

Should you have any additional questions or comments, please feel free to call me.

Sincerely,

McCrone, Inc.



Jason Palkewicz, PE  
Project Manager