



October 24, 2006

Marco Boyce  
Morris & Ritchie Associates, Inc.  
18 Boulden Circle, Ste. 36  
New Castle, DE 19806

RE: PLUS review – PLUS 2006-09-18; Smith Property

Dear Mr. Boyce:

Thank you for meeting with State agency planners on September 27, 2006 to discuss the proposed plans for the Smith Property project to be located on the west side of Old State Road, near the intersection with Taylor's Bridge Road.

According to the information received, you are seeking site plan approval through New Castle County for 329 residential units on 272 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 New Castle 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 Level 3 according to the Strategies for State Policies and Spending. 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**

- A traffic impact study will be required for this development. A scoping meeting was held for this study in January and work on it has progressed. DelDOT expects to receive a completed study from the developer's traffic engineer in the near future.
- Old State 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 DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- The plan for the development should include a 5-foot sidewalk along the frontage on Old State Road and extending south along the road to connect to the existing sidewalk associated with the Spring Creek development.
- DelDOT appreciates and supports the proposed connection to Labrador Lane in the Spring Creek subdivision. However, they are concerned about the potential for traffic on Spring Creek Drive and US Route 13. DelDOT recommends that the connection be built as part of an early phase of the street construction.
- The plan features a pair of one-way streets separated by a wide strip of open space and punctuated by three large traffic circles. This is a non-standard street design and may not be approved.
- Similarly, there are two no-outlet streets proposed with designs that are non-standard in several respects. Where they leave the through street, they are separated from the traffic flow by an island, the purpose of which is unclear.

They appear to be a single lane wide, with rights-of-way that end at the edge of the pavement. Finally, they end abruptly, without cul-de-sacs or other turnarounds. Such a design is not acceptable for a State-maintained street, and our understanding is that the County requires that all public streets be built to State standards.

### **Natural and Cultural Resources**

- According to the Statewide Wetland Mapping Project (SWMP) mapping, nontidal palustrine riparian wetlands and tidally-influenced estuarine emergent wetlands were mapped on subject parcel. The developer should maintain a 100-foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.
- Headwater riparian wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system and/or water bodies further downstream. In recognition of this concern, the Watershed Assessment Section strongly recommends the applicant preserve the existing forested buffers in their entirety. Otherwise, a buffer width of at least 100 feet is the recommended minimum.
- In New Castle County, any proposed Subdivision greater than 5 acres or 50 lots located within a Zone A Floodplain must determine a Base Flood Elevation for the Subdivision. The proposed site plan indicates a Base Flood Elevation of 9 feet. If a study was done to develop that BFE, a copy is requested and should be sent to Greg Williams, Division of Soil and Water Conservation. Also, if a study was done has it been sent to FEMA for a Letter of Map Revision?
- A review of our database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within the proposed project area. Because the bog turtle is a federally listed species, protected under the Endangered Species Act, its presence can affect the scope of work. To ensure that the project will not impact bog turtles or their habitat, Phase I surveys for bog turtle habitat should be conducted.
- The DNREC program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project.
- The Office of Nature Preserves recognizes the effort of the applicant to remain outside the Natural Area boundary. However, they strongly urge the applicant to

provide adequate buffers to the forested lands through reduction in lot size or density. Further, the Office of Nature Preserves respectfully requests the applicant consider dedicating the lands within the Natural Area boundary as a Nature Preserve. The State could then be responsible for the management of the Natural Preserve.

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

**Office of State Planning Coordination – Contact: Herb Inden 577-5188**

This project is located in Investment Level 3 according to the Strategies for State Policies and Spending. 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.

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

This parcel contains the W. M. Vandegrift House (N-5929) and the E. & A. Moore House (N-5843), both shown on Beers Atlas of 1868. In addition, it contains four known archaeological sites (N-3874, N-9645, N-9647, and N-9649). There is a high potential here for other archaeological sites, particularly an early 17<sup>th</sup>-century historic site and other prehistoric-period sites. Beers Atlas shows the location of the Vandyke & Mathews House in the northwestern parcel as well. The Corbit-Sharp House (N-125) and the Odessa Historic District (N-126) are both listed in the National Register of Historic Places and are in sight of this parcel. There are a number of historic properties nearby.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Vandegrift and Moore Houses, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out, and the developer may want to hire an archaeological consultant to check for the possibility of cemeteries here. The DHCA would have to have a copy of any archaeological report done for this purpose. They will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

The DHCA requests that the developer consider maintaining the existing historic buildings within the development on separate, larger parcels. The boundary of the development should be sufficiently landscaped to block the view of it from the Corbit-Sharp House and Odessa Historic District. They would like the opportunity to examine

the archaeological sites known here and to see if there are others, to learn something about their nature, location, and extent prior to any ground-disturbing activities.

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

- 1) Several weeks ago, DelDOT met with the developer and Dr. Marchio from the Appoquinimink School District about the possible use of part of the site for an elementary school and/or a middle school. They understand that the developer is still checking into the feasibility of such a use. DelDOT supports the District in this regard and they appreciate the developer's willingness to work with them.
- 2) A traffic impact study will be required for this development. A scoping meeting was held for this study in January and work on it has progressed. DelDOT expects to receive a completed study from the developer's traffic engineer in the near future.
- 3) Old State 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 DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- 4) The plan for the development should include a 5-foot sidewalk along the frontage on Old State Road and extending south along the road to connect to the existing sidewalk associated with the Spring Creek development.
- 5) DelDOT appreciates and supports the proposed connection to Labrador Lane in the Spring Creek subdivision. However, they are concerned about the potential for traffic on Spring Creek Drive and US Route 13. DelDOT recommends that the connection be built as part of an early phase of the street construction. A note on the subdivision plan should then require the developer to either provide traffic calming on Labrador Lane and Spring Creek Drive in a manner acceptable to DelDOT or a letter from DelDOT verifying that such traffic calming is not needed prior to issuance of the 200<sup>th</sup> building permit.
- 6) The plan features a pair of one-way streets separated by a wide strip of open space and punctuated by three large traffic circles. This is a non-standard street design and may not be approved. The developer's site engineer should contact the Subdivision Manager for New Castle County, Mr. Pao Lin, regarding this design before proceeding further with the design of the streets. Mr. Lin may be reached at (302) 760-2157.

- 7) Similarly, there are two no-outlet streets proposed with designs that are non-standard in several respects. Where they leave the through street, they are separated from the traffic flow by an island, the purpose of which is unclear. They appear to be a single lane wide, with rights-of-way that end at the edge of the pavement. Finally, they end abruptly, without cul-de-sacs or other turnarounds. Such a design is not acceptable for a State-maintained street, and our understanding is that the County requires that all public streets be built to State standards. DelDOT would advise against permitting private streets in a development with public streets because homeowners could be confused by the differences in maintenance and service delivery. Whether to permit private streets is a County decision, but the design of their connection to the public streets, including the proposed islands, would need to be reviewed with Mr. Lin.

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

### **Green Infrastructure**

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

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

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

## **Soils**

Based on the New Castle County soil survey, Sassafras, Matapeake, Keyport, Fallsington, Johnston and Tidal Marsh were mapped on subject parcel. Sassafras and Matapeake are well-drained upland soils that, generally, have few limitations for development. Keyport is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Fallsington is a poorly-drained wetland associated (hydric) soil that has severe limitations for development. Johnston is a nontidal floodplain soil predominately supporting hydrophytic woody vegetation, while Tidal Marsh is a tidally-influenced soil predominately supporting hydrophytic emergent vegetation.

## **Wetlands**

According to the Statewide Wetland Mapping Project (SWMP) mapping, nontidal palustrine riparian wetlands and tidally-influenced estuarine emergent wetlands were mapped on subject parcel. The nontidal palustrine wetlands were mapped along the uppermost reaches of two headwater tributaries bounding the eastern and western boundaries, while tidally-influenced estuarine wetlands were mapped along the lower reaches of the same stream tributaries, including the entire northern boundary adjacent to the Appoquinimink River. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. The developer should maintain a 100-foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.

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

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

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by

federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Headwater riparian wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system and/or water bodies further downstream. Since such streams are a major avenue for nutrient-laden stormwater and sediment runoff their protection deserves the highest priority. In recognition of this concern, the Watershed Assessment Section strongly recommends the applicant preserve the existing forested buffers in their entirety. Otherwise, a buffer width of at least 100 feet is the recommended minimum.

### **Impervious Cover**

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 27 percent. It is not clear from the information submitted whether this estimate is reasonable or not. The applicant should recognize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be accounted for when calculating surface imperviousness and should make certain that these are included in the finalized calculation.

Studies link increases in impervious cover to decreases in water and habitat quality. Studies have also firmly established that irreversible declines in water and habitat quality begin once aggregate watershed surface imperviousness exceeds 10 percent. Since the amount of imperviousness generated by this project is likely to be much higher than the desirable watershed threshold of 10 percent, it underscores the importance of a proactive strategy that helps 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 examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

### **TMDLs**

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Appoquinimink 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

Appoquinimink watershed, a post-development TMDL reduction level of 60 percent will be required for both nitrogen and phosphorus.

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

As stated above Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Appoquinimink Watershed. The TMDL calls for a 60% reduction for nitrogen and phosphorus from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices as, reducing surface imperviousness, increasing passive wooded open space, and the use of appropriate stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

### **Water Resource Protection Areas**

The DNREC Water Supply Section has determined that it does not fall within any delineated wellhead protection areas or areas of excellent ground-water recharge. The PLUS project does fall within the MOT (Sheets Farm) Ground-Water Management Zone (see following map). The submitted plans appear to be incomplete.

The proposed parcel TMP # 1400700028 is divided by Old State Road. The plans submitted clearly show the proposed development on the portion of the parcel that lies northwest of Old State Road. The plan does not include most of the land southeasterly of Old State Road.

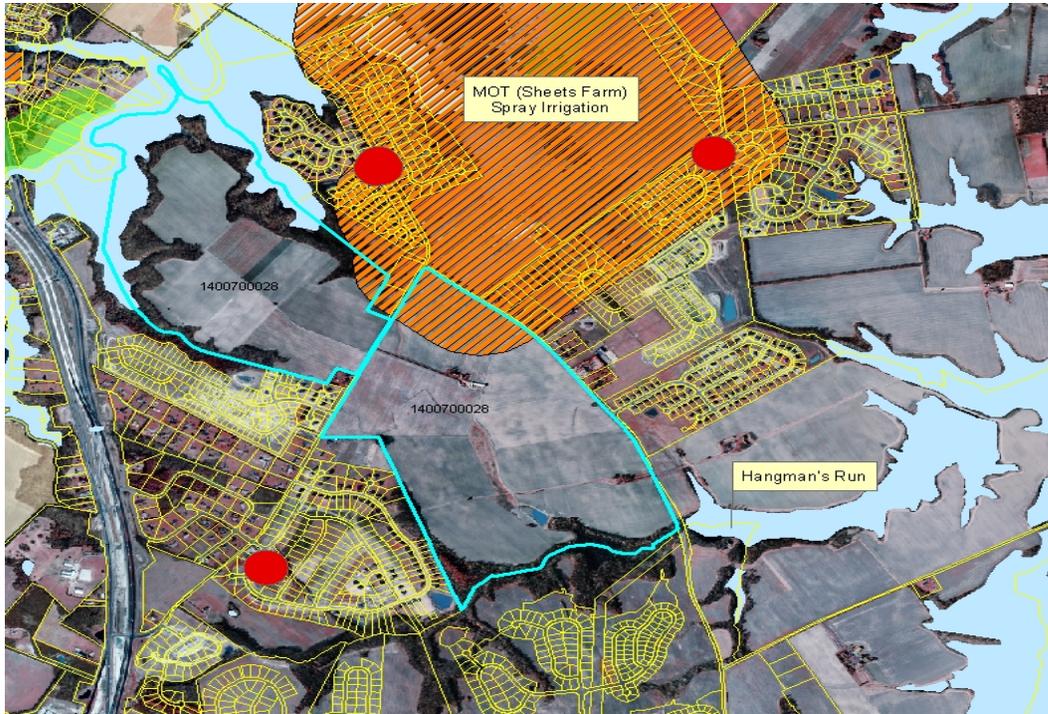
The PLUS Application shows a proposed community septic on the southeasterly side of Old State Road. This area is within the MOT (Sheets Farm) Ground Water Management Zone. This proposed land use would require additional review.

The southern portion of the parcel is located in the drainage basin of Hangman's Run. Hangman's Run is pristine freshwater impoundment maintained under the auspices of Duck's Unlimited. It is habitat to many species of flora and fauna. Without knowing the proposed development to the southeasterly portion of the parcel, the possible effects on water quality cannot be determined.

For more information:

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

### Map of the Smith Property (PLUS 2006-09-18)



### Water Supply

The project information sheets state water will be provided to the project by Artesian Water Company via a central water system. Records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 94-CPCN-22.

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.

### **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 the New Castle County Department of Land Use. Contact the Department of Land Use, Engineering Section, at (302) 395-5470 for details regarding submittal requirements and fees.

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

Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on structural stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique. Green Technology BMPs must be given first consideration for stormwater quality management

Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption. Because of the available discharge to tidal water, all or portions of this project may be eligible for a waiver of stormwater quantity management

The ponds as currently sited on the plan lie in areas of steeper slopes. This will likely cause the ponds to be constructed as embankment ponds. In addition, it is recommended that clearing and grading on steep slopes be limited to limit the erosion potential from those slopes.

Access to the stormwater management ponds for maintenance activities needs to be provided.

A Certified Construction Reviewer (CCR) will be required for this site during construction.

### **Floodplains**

In New Castle County, any proposed Subdivision greater than 5 acres or 50 lots located within a Zone A Floodplain must determine a Base Flood Elevation for the Subdivision. The proposed site plan indicates a Base Flood Elevation of 9 feet. If a study was done to develop that BFE, a copy is requested and should be sent to Greg Williams, Division of Soil and Water Conservation. Also, if a study was done has it been sent to FEMA for a Letter of Map Revision?

### **Bog Turtle**

A review of our database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) within the proposed project area. Because the bog turtle is a federally listed species, protected under the Endangered Species Act, its presence can affect the scope of work. To ensure that the project will not impact bog turtles or their habitat, Phase I surveys for bog turtle habitat should be conducted.

Phase I surveys can be conducted any time of year when snow cover is not present. If potential habitat is found, however, please note there is a time of year restriction during which Phase II surveys for bog turtles must be conducted. A Delaware approved bog turtle surveyor must be used to conduct the surveys. Please contact Holly Niederriter (302-653-2880) to obtain a list of contacts to conduct Phase I and, if necessary, Phase II surveys.

If potential bog turtle habitat is found during Phase I surveys, you are required to either:

1. Completely avoid all direct and indirect project impacts to the wetland, in consultation with the U.S. Fish and Wildlife Service and Delaware Division of Fish and Wildlife;

OR

2. Have Phase II surveys conducted to determine if bog turtles are present. In accordance with Delaware's bog turtle site survey procedures, surveys must be conducted by a State-approved bog turtle surveyor between April 15 and June 15.

### **Rare Plants & Site Visit Request**

According to our GIS database and aerial photographs, there is a high probability for a black ash seepage swamp (*Fraxinus nigra*) within the project area. This unique community type often supports rare plants and its presence should be confirmed. DNREC program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and unique habitats and to ensure that the project is environmentally sensitive. In addition, a survey of the project site will give staff an opportunity to document the biodiversity of the property before construction activities begin. Please contact Bill McAvoy or Kitt Heckscher at (302) 653-2880 to set up a site visit.

### **Forest and Wetland Preservation**

A greater effort to preserve forest and wetlands on this site could be made and we recommend the following site plan changes:

1. All lots and infrastructure which contain forested land should be removed from the site plan or relocated. A larger, connected area of forested open space is more beneficial to wildlife and could provide recreational opportunities to residents as well. Currently, there is a large portion of open space located in-between lots, on corners and other 'left over' spaces. The site plan could be reconfigured so that these disconnected 'open spaces' are used for lots or other amenities, and the forest on this property can remain intact as the required 'open space'. Lot lines should be outside of forested riparian and wetland buffer zones.
2. There are numerous stormwater management ponds that will require clearing or are too close to wetlands. These ponds should be relocated, omitted, or an alternative method of stormwater management employed. It does not make sense to destroy trees and encroach upon wetlands, which both function to reduce flooding, to create a pond with the same purpose.
3. Due to the potential for rare species which are wetland dependent, we recommend that all lots and infrastructure be at least 100 feet (where bog turtle are concerned, 300 feet) from the edge of wetlands. Not only will this protect water quality, but will minimize impacts to wetland dependent species which utilize surrounding upland buffers for a portion of their life cycle. Existing forested buffers should remain intact.

4. Leaving a forest intact is more beneficial to wildlife than clearing. However, if clearing occurs despite this recommendation, trees should not be cleared from April 1st to July 31st to reduce impacts to nesting birds and other wildlife species that utilize forests for breeding. This clearing recommendation would only protect those species during the breeding season; once trees are cleared the result is an overall loss of habitat.

### **Plant Rescue**

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

### **Nuisance Waterfowl**

Stormwater management ponds may attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. The number of ponds being proposed may not be necessary. 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. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (at least 50 feet) around ponds, are not as attractive to geese because they do not feel safe from predators and other disturbance when their view of the area is blocked. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

### **State Resource Areas/Natural Areas**

The forested/riparian lands on the property are a part of the Appoquinimink River Natural Area and a State Resource Area.

Natural Areas involve areas of land or water, or of both land and water, whether in public or private ownership, which either retains or has reestablished its natural character (although it need not be undisturbed), or has unusual flora or fauna, or has biotic, geological, scenic or archaeological features of scientific or educational value.

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

With this in mind, the Office of Nature Preserves recognizes the effort of the applicant to remain outside the Natural Area boundary. However, they strongly urge the applicant to provide adequate buffers to the forested lands through reduction in lot size or density. Further, the Office of Nature Preserves respectfully requests the applicant consider dedicating the lands within the Natural Area boundary as a Nature Preserve. The State could then be responsible for the management of the Natural Preserve.

### **Solid Waste**

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

### **Underground Storage Tanks**

There are two inactive LUST site(s) located near the proposed project:

Kayo Gas Odessa, Facility # 3-000248, Project # N8707031

Delaware State Police Troop # 9, Facility # 3-000573, Project # N9304061

No environmental impact is expected from the above inactive/active LUST site(s). However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

### Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 25.2 tons (50,498.1 pounds) per year of VOC (volatile organic compounds), 20.9 tons (41,809.0 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 15.4 tons (30,847.4 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 1.4 ton (2,746.0 pounds) per year of fine particulates and 2,112.0 tons (4,224,098.9 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 10.2 tons (20,368.2 pounds) per year of VOC (volatile organic compounds), 1.1 ton (2,241.1 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 0.9 ton (1,859.8 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 1.2 ton (2,400.0 pounds) per year of fine particulates and 41.3 tons (82,568.0 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 4.0 tons (8,072.5 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 14.0 tons (28,078.2 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 2,070.8 tons (4,141,531.0 pounds) per year of CO<sub>2</sub> (carbon dioxide).

	VOC	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Mobile	25.2	20.9	15.4	1.4	2112.0
Residential	10.2	1.1	0.9	1.2	41.3
Electrical Power		4.0	14.0		2070.8
<b>TOTAL</b>	<b>35.4</b>	<b>26.0</b>	<b>30.3</b>	<b>2.6</b>	<b>4224.1</b>

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 4.0 tons of nitrogen oxides per year and 14.0 tons of sulfur dioxide per year.

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

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

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

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

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

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

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

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

- The infrastructure for fire protection water shall be provided, including the size of water mains.

**b. Accessibility:**

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

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

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

**d. Required Notes:**

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

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: [www.delawarestatefiremarshal.com](http://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 development. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas within Investment Level 3.

*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 Karen Horton 739-4263**

This proposal is a site plan review for 329 residential units on 272 acres located on the West side of Old State Road near the intersection of Taylor’s Bridge near Odessa. According to the *State Strategies Map*, the proposal is located in an Investment Level 3 area and inside the growth zone. As a general planning practice, DSHA encourages residential development inside growth zones and where residents will have proximity to services, markets, and employment opportunities. Furthermore, the proposal targets units for first time homebuyers. According to the most recent real estate data collected by DSHA, the average home price in New Castle County is \$205,000. However, families earning respectively 80% of New Castle County’s median income only qualify for mortgages of \$183,233, thus creating an affordability gap of \$21,767. The provision of units within reach of families earning at least 80% of New Castle County’s median income will ensure housing that is affordable for first time homebuyers.

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

1. This development is located within the Appoquinimink School District.
2. DOE offers the following comments on behalf of the Appoquinimink School District.
3. Using the DOE standard formula, this development will generate an estimated 164 students.
4. Due to this development being located within New Castle County, it is subject to the Voluntary School Assessment Statute, Title 9, Chapter 26, Subchapter II, § 2661, Delaware Code.
5. DOE requests the developer work with the Appoquinimink 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.**

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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". The signature is written in black ink and is positioned above the printed name and title.

Constance C. Holland, AICP  
Director

CC: New Castle County