



**STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION**

October 20, 2010

Mr. Ken Kullman
ECI
P.O. Box 820
Rehoboth Beach, DE 19971

RE: PLUS review – 2010-09-01; Brickyard Landing

Dear Mr. Kullman:

Thank you for meeting with State agencies on September 22, 2010 to discuss the proposed plans for the Brickyard Landing project, a proposed 49 unit subdivision located near Milton in Sussex County on SCR 257; 1,700 feet from the intersection of SCR 257 and SCR 88.

The applicant and his engineer should not that any additional changes to the proposed plan, other than those suggested in this letter, may result in additional comments from the State. In addition, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. **The applicant will need to comply with any Federal, State and local regulations regarding this property.**

Strategies for State Policies and Spending

The proposed project is located within Levels 2, 3 and 4 and within the future annexation area of the Town of Milton. However at the time of this PLUS Review it is the understanding of this office that the owner is not seeking annexation at this time. Therefore, at this time, Sussex County is the governing land use authority over these lands and the subdivision process for the proposed. The developers will need to comply with any and all regulations/restrictions set forth by Sussex County as they move through the development process.

This property is within the Levels 2, 3 and 4 according to the 2004 Strategies for State Policies and Spending. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future and State investments will support growth in these areas. 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. Finally Investment Level 4 reflects areas where the State intends to investment in preservation as well as those industries which support agricultural and forestry based industries.

While the State generally supports growth in both of these levels, this particular parcel has important historical resources as well as environmental constraints that need to be seriously considered before approval of the existing plan.

This site contains structures associated with a historic brickyard complex along with a several historic houses. The complex consists of the remains of the brick kiln, the loading ramp, the remains of a very long building, which probably housed the brick making equipment and drying shed, two houses built completely or in part with seconds from the kiln, the trace of the Queen Anne's Railroad line, and two very large clay barrow pits. Should this applicant receive approval, the State would like to work with the County and the developer to cluster any approved development to allow for the protection of the environmental and historical resources. Additional information regarding these resources is listed under the agency comments below:

Code Requirements/Agency Permitting Requirements

State Historic Preservation Office – Contact Terrence Burns 736-7404

- Prior to any demolition or ground-disturbing activities, the developer may want to consider hiring an archaeological consultant to document these historic properties and to examine the parcel for other kinds of archaeological sites, such as a cemetery or unmarked human remains. Furthermore, if there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often through its client is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential historic or cultural resources.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- In accordance with Section 3.2.3 of DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access, DeIDOT sent Sussex County a letter of No Objection to Recordation for this development on August 18, 2009. Accordingly, they have no further comments on the subdivision plan now.
- As specified in Section 4.1 of DeIDOT's Standards and Regulations for Subdivision Streets and State Highway Access, when the entrance construction plans are submitted for review, the developer must submit **two (2) paper copies and one electronic (pdf) copy** of the construction plans, one copy of the record plan, an Initial Stage Fee Calculation Form, a Construction Stage Fee Calculation Form, a Construction Stage Review Fee, an application for highway entrance permit and a signed and sealed commercial entrance design checklist for review and approval. Be advised that the

Department will not review the entrance plan until it has signed off on the record plan. Please make all submissions to Mr. John Fiori, Subdivision Manager.

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

Wetlands.

- According to the Statewide Wetland Mapping Project (SWMP) maps, tidal (PF01R & PEM1T) and non-tidal riparian (PF01C7) wetlands were mapped on subject parcel (Figure 1).

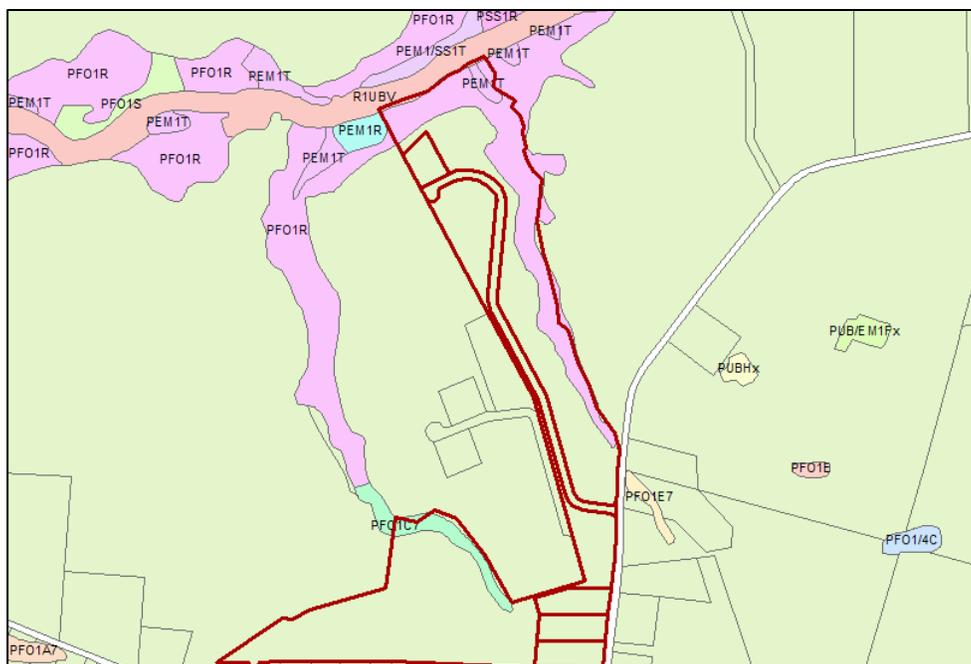


Figure 1: SWMP mapping in the immediate vicinity of the proposed project

- The applicant is responsible for determining whether any State-regulated wetlands (regulated pursuant to 7 Del.C. Chapter 66 and the Wetlands Regulations) are present on the property. This determination can only be made by contacting the Division of Water Resources' Wetlands and Subaqueous Lands Section at 302/739-9943 and consulting the State's official wetland regulatory maps, which depict the extent of State jurisdiction. The area regulated by State law may be very different from the area under federal authority. No activity may take place in State-regulated wetlands without a permit from DNREC's Wetlands Section.
- Most perennial streams and ditches and many intermittent streams and ditches are regulated pursuant to the Subaqueous Lands Act (7 Del.C. Chapter 72) and the Regulations Governing the Use of Subaqueous Lands. Ponds which are connected to

other waters are also regulated, while isolated ponds are not. Any work in regulated streams, ditches or ponds requires a permit from the Wetlands and Subaqueous Lands Section. An on-site jurisdictional determination is recommended in order to determine whether any regulated watercourses exist on the property. Please contact the Wetlands and Subaqueous Lands Section at 302/739-9943 to schedule an on-site visit. Such appointments can usually be scheduled within 2 to 3 weeks.

- The Wetlands and Subaqueous Lands Section has performed a preliminary review of the site and determined that State regulated wetlands and subaqueous lands are present on the property. In addition, the Wetlands and Subaqueous Lands Section has reviewed a preliminary site plan showing a wetland walkway over state regulated tidal wetlands. The Wetlands and Subaqueous Lands Section has concerns about impacts to of wetland walkways over tidal wetlands. Permits for construction of wetland walkways longer than 50 feet in length have rarely been issued in the past 10 years.
- All work in State regulated wetlands or subaqueous lands requires a permit. The applicant is responsible to submit a permit application for work in regulated wetlands or waters. The applicant's design should avoid impacts to regulated lands, when possible, and minimize any unavoidable impacts. The Wetlands and Subaqueous Lands Section will render a permit decision after review of a complete application. If work is authorized within regulated lands mitigation may be required. For additional information please see the "Additional wetlands information" section below or contact the Wetlands and Subaqueous Lands Section at 302/739-9943.

TMDLs.

- Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Broadkill 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 State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; *State of Delaware Surface Water Quality Standards, as amended July 11, 2004*) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. TMDLs are required by federal law (Section 303(d) of the 1972 Clean Water Act), and the states are charged with developing and implementing standards (such as BMPs) that enable realization of the water quality standards that support said use goals.

The project is located in the greater Delaware River and Bay drainage, specifically within the Broadkill watershed. The TMDL for the Broadkill watershed calls for a 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 75 percent reduction in bacteria from baseline conditions. The specific required nutrient and bacterial reductions can also be reviewed and retrieved via the following weblink (click on TMDLs under Services): <http://www.dnrec.delaware.gov/Pages/default.aspx>

- A nutrient management plan is required under the Delaware Nutrient Management law (3 Del. Chapter 22) for all persons or entities who apply nutrients to lands in excess of 10 acres. The combined parcel land area of this project may exceed this 10-acre threshold. Please contact the Delaware Nutrient Management Program at 739-4811 for further information concerning compliance requirements.

Water Supply.

- The project information sheets state water will be provided to the project by Tidewater Utilities via a public water system. Our records indicate that the project is located within the public water service area granted to Tidewater Utilities under Certificate of Public Convenience and Necessity 07-CPCN-45.
- 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.

Sediment and Stormwater Program.

- A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. A project application meeting is required for this site. Contact the reviewing agency to schedule a project application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson at the Sussex Conservation District at (302) 856-2105 for details regarding submittal requirements and fees (Delaware Code, Title 7, Chapter 40; Delaware Regulations, Administrative Code, Title 7, 5101).

Flood Management.

- The general project notes indicate the floodplain for the subdivision is "Based upon Flood Insurance Rate Map (FIRM) Number 10005C0168J dated December 19, 1996. . ." The

current effective FIRM panel for this parcel is dated January 6, 2005. Please make sure you are using the current effective flood data. A portion of this property is located in the approximate Zone A floodplain. This means no detailed flood study has been conducted by FEMA and no Base Flood Elevation has been established. Sussex County's Floodplain Ordinance requires any subdivision proposal greater than 50 lots or 5 acres, whichever is the lesser, shall include base flood elevation data with the proposal. This means a flood study should be performed to establish exactly where the floodplain is located and what flood height the base flood elevation will be. We suggest this study be sent to FEMA for approval before the subdivision is built.

Air Quality.

- The applicant shall comply with all applicable Delaware air quality regulations. These regulations include:
 - **Regulation 1106** - Particulate Emissions from Construction and Materials Handling
 - Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads.
 - Use covers on trucks that transport material to and from site to prevent visible emissions.
 - **Regulation 1113** - Open Burning
 - Prohibits open burns statewide during the Ozone Season from May 1-Sept. 30 each year.
 - Prohibits the burning of land clearing debris, trash or building materials/debris.
 - **Regulation 1141** – Limiting Emissions of Volatile Organic Compounds From Consumer and Commercial Products
 - Restricts the use of certain coatings and consumer products in typical architectural applications.
 - **Regulation 1145** - Excessive Idling of Heavy Duty Vehicles
 - Restricts idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.

Delaware State Fire Marshall's Office – Contact Duane Fox 739-4394

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

1000 gpm for 1-hour duration, at 20-psi residual pressure and fire hydrants with 800 feet spacing on centers are required.

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

b. Accessibility:

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

c. Gas Piping and System Information:

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

d. Required Notes:

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Name of Water Supplier
- Proposed Use

- National Fire Protection Association (NFPA) Construction Type
- Townhouse 2-hr separation wall details shall be shown on site plans
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Department of Agriculture – Contact Scott Blaier 698-4529

- The proposed development is adjacent to two properties currently enrolled in the State's Agricultural Lands Preservation Program (Sycamore Farms, Inc. Agricultural District, (Parcel # 2.35-15.00-28.00) and (The Cave Neck Farm Expansion of the Diamond #2 District, (Parcel 2.35-21.00-161.00)). Therefore, the activities conducted on these preserved properties will be protected by the agricultural use protections outlined in Title 3, Del. C., Chapter 9. These protections effect adjoining developing properties. The 300 foot notification requirement affects **all new deeds** in a subdivision located in whole or part within 300 feet of an Agricultural District. Please take note of these restrictions as follows:

§ 910. Agricultural use protections.

(a) Normal agricultural uses and activities conducted in a lawful manner are preferred and priority uses and activities in Agricultural Preservation Districts. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land use adjacent to Agricultural Preservation Districts shall be subject to the following restrictions:

(1) For any new subdivision development located in whole or in part within 300 feet of the boundary of an Agricultural Preservation District, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

This property is located in the vicinity of an established Agricultural Preservation District in which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance of any annoyance or inconvenience which may result from such normal agricultural uses and activities."

(2) For any new subdivision development located in whole or in part within 50 feet of the boundary of an Agricultural Preservation District, no

improvement requiring an occupancy approval shall be constructed within 50 feet of the boundary of the Agricultural Preservation District.

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

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

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

Section 1. Chapter 99, Code of Sussex Section 99-6 may also apply to this subdivision. The applicant should verify the applicability of this provision with Sussex County. This Section of the Code states:

G. Agricultural Use Protections.

(1) Normal agricultural uses and activities conducted in a lawful manner are preferred. In order to establish and maintain a preference and priority for such normal agricultural uses and activities and avert and negate complaints arising from normal noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations, land uses adjacent to land used primarily for agricultural purposes shall be subject to the following restrictions:

(a) For any new subdivision development located in whole or in part within three hundred (300) feet of the boundary of land used primarily for agricultural purposes, the owner of the development shall provide in the deed restrictions and any leases or agreements of sale for any residential lot or dwelling unit the following notice:

“This property is located in the vicinity of land used primarily for agricultural purposes on which normal agricultural uses and activities have been afforded the highest priority use status. It can be anticipated that such agricultural uses and activities may now or in the future involve noise, dust, manure and other odors, the use of agricultural chemicals and nighttime farm operations. The use and enjoyment of this property is expressly conditioned on acceptance of any annoyance or inconvenience which may result from such normal agricultural uses and activities.”

(b) For any new subdivision development located in whole or in part within fifty (50) feet of the boundary of land used primarily for agricultural purposes no improvement requiring and occupancy approval for a residential type use shall be constructed within fifty (50) feet of the boundary of land used primarily for agricultural purposes.

Recommendations/Additional Information

This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped (**but in no way required**) that the applicant will open a dialogue with the relevant agencies to discuss how these suggestions can benefit the project.

State Historic Preservation Office – Contact Terrence Burns 736-7404

- There are known cultural and historic resources on this parcel (property), consisting of structures associated with a historic brickyard complex along with a few historic houses. The complex consists of the remains of the brick kiln, the loading ramp, the remains of a very long building, which probably housed the brick making equipment and drying shed, two houses built completely or in part with seconds from the kiln, the trace of the Queen Anne’s Railroad line, and two very large clay barrow pits.

The State Historic Preservation Office (SHPO) files from 1983 have information on the two houses (S-3519, S-3520), as well as a third house (S-3518) that we did not locate any evidence for. They have also looked at the aerials, and the brickyard shows clearly on the 1937 aerial, with a number of buildings that we did not observe in the field. By 1954, the brickyard, rail line, and borrow pits are overgrown with trees, although the three houses appear to be there. Information has been received regarding a road to a landing on the Broadkill River; the road does show on the 1937 aerial, so the landing location would not be difficult to establish. Both aerials also show traces of the sailors’ path that he mentioned.

From what was observed and from the 1983 information, the earlier house's frame section could be as early as the 18th century. The brickyard produced machine-made brick, so it probably dates from the mid- to late 19th century. The brickyard is a very interesting site. Brick making was an important industry in Delaware from the 18th century through the early 20th century. The SHPO did have a brickyard just outside of Milford listed in the National Register of Historic Places, but unfortunately that resource has been destroyed. There is also a report of a brickyard on the north side of the Broadkill, but they do not have much information on it. This one is certainly the most complete representative of this property type that is known to date. It is the opinion of SHPO that the resources may be eligible for listing in the National Register as an historic district under Criteria A and D, because they reflect important events in our economic history and contains significant information about the brick-making process as well as the lives of associated people living in the houses. Documenting this site would be beneficial.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- It has come to their attention that there may have been some misunderstanding on this project regarding DelDOT's Area-Wide Study Fee, which was paid by the applicant. Effective with the December 2007 adoption of the Standards and Regulations for Subdivision Streets and State Highway Access, two particular changes occurred with regard to traffic impact studies. First, DelDOT's criteria for when a study is warranted changed, to become much more stringent. Whereas before a residential development generating less than 2100 trips per day (up to 214 single-family detached houses) did not meet our traffic impact study warrants, that number dropped to 400 trips per day (up to 35 single-family detached houses).

Second, recognizing that in many instances the new criteria could result in a series of studies for small developments that were not particularly informative and that this would be less useful than one comprehensive study, DelDOT created the Area-Wide Study Fee. Developers whose projects generate between 400 and 2,000 trips per day received the option of paying \$10 per daily trip instead of doing a traffic impact study. DelDOT collects the fees when subdivision plans are submitted for review.

DelDOT's intent is to aggregate these fees until they have collected enough in one area to do a comprehensive study of that area. They make no commitment as to when a particular study will be done. In fact, because the pace of development slowed soon after the fee became an option, they have yet to collect enough in any one area to begin such a study.

The Area-Wide Study Fee should be distinguished from Option B, under which a developer can pay DelDOT to have a consultant already retained by DelDOT do their traffic impact study for them instead of hiring their own consultant (Option A). Option B

is available for developments of any size, but perhaps obviously, is generally only chosen by a developer when they are required to do a study.

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

Soils Assessment.

- According to the NRCS soil survey update, hydric soils comprise a significant portion of the combined parcel land area. Manahawkin (Ma) and Longmarsh (LO) are the primary hydric soil mapping units mapped here (See figure 2). These soil map units closely approximate the mapped occurrence of the SWMP mapped wetlands; thus they have severe limitations for development and should be avoided.

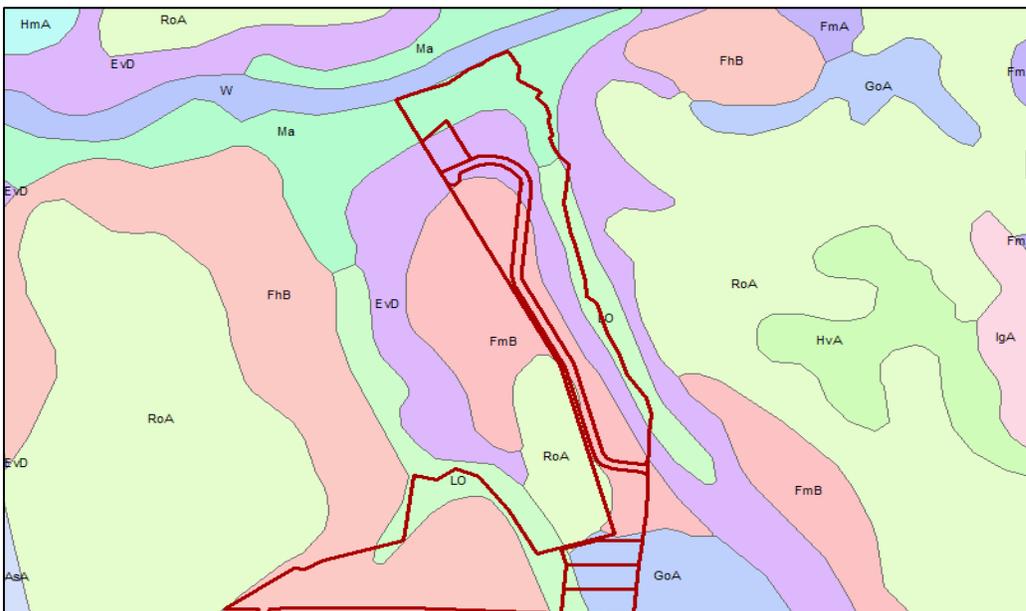


Figure 2: NRCS soil survey mapping update in the immediate vicinity

Additional wetlands information.

- When designing a project on a site with regulated watercourses, any extensive piping, filling or burying of streams or ditches in excess of the minimum needed for road crossings should be avoided. Where road crossings are necessary, bridge spans which avoid significant impacts to stream banks and channels should be used wherever possible. Where placement of culverts is unavoidable, culvert designs which utilize multiple barrels at different elevations to preserve a low flow channel are usually preferred. Contact the Wetlands and Subaqueous Lands Section for further information regarding preferred designs.

The applicant should also be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they may be subject to regulatory jurisdiction under Federal 404 provisions of the Clean Water Act. A site-specific field wetlands delineation using the methodology described in the 1987 United States Army Corps of Engineers (USACE or “the Corps”) manual is the acceptable basis for making a jurisdictional wetland determination for non-tidal wetlands in Delaware.

- The applicant is forewarned that the Corps views the use of the National Wetlands Inventory (NWI) mapping or the Statewide Wetlands Mapping Project (SWMP) mapping as an unacceptable substitute for making such delineations. To ensure compliance with said Corps regulatory requirements, it is strongly recommended that a field wetlands delineation using the above-referenced methodology be performed on this parcel before commencing any construction activities. It is further recommended that the Corps be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant’s consultant delineates what they believe are non-jurisdictional isolated (SWANCC) wetlands, the Corps must be contacted to evaluate and assess the jurisdictional validity of such a delineation. The final jurisdictional authority for making isolated wetlands determinations rests with the Corps; they can be reached by phone at 736-9763.
- Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882.), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from all water bodies (including ditches) and wetlands.

Additional TMDLs information.

- A Pollution Control Strategy (PCS) is an implementation strategy that identifies the actions (i.e., regulatory and nonregulatory) necessary to systematically reduce the pollutant loading to a given water body; ultimately leading to the attainment of the obligatory TMDL pollutant load reduction requirements specified for that water body. However, the PCS for the Broadkill watershed has not been formally completed to date. In absence of a finalized PCS, the applicant is strongly urged to reduce nutrient and bacterial pollutants through voluntary commitment to the implementation of the following recommended BMPs:
- Maintain (or reduce the amount of forest cover removed) as much of the existing forest cover as possible. We further suggest additional native tree and native herbaceous planting wherever possible.

- Maintain a 100-foot buffer width(s) from all delineated wetlands (USACE and State approved wetland delineations).
- Calculate post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, and roads) included in the calculation. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its most likely adverse impacts. Reducing the amount of surface imperviousness via the application/use of pervious paving materials (“pervious pavers”) in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation (or the reestablishment of forest cover acreage) are examples of some practical BMPs that could easily be implemented to help reduce surface imperviousness.
- Use rain gardens and green-technology storm water management structures (in lieu of open-water management structures) as BMPs to mitigate or reduce nutrient and bacterial pollutant impacts via runoff from impervious surfaces.
- Voluntarily assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the “Nutrient Load Assessment protocol.” The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) that result from the conversion of individual or combined land parcels to a different land use(s), while providing applicants with quantitative information about their project’s impact(s) on baseline water quality. We strongly encourage the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact Lyle Jones at 302-739-9939 for more information on the protocol.

Drainage Program

- There should be open space between lots 17 and 18 for access to the stormwater management area. Investigate shifting the pier to the northeast of lot 18 and combining the access area for the pier and stormwater management area.
- The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction.
- A drainage maintenance plan should be developed for the drainage conveyances along and through the subdivision in case the conveyances require maintenance in the future. Identify maintenance access points and spoil disposal areas on the sediment and stormwater plans to prevent any future misunderstandings with the homeowners association and residents.

- Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage easement on the deed, the second owner, and any subsequent owner of the property, will be fully aware of the drainage easement on their property.

Site Visit Request.

- Division scientists have not surveyed this project area; therefore, they are unable to provide information pertaining to the existence of state-rare or federally listed plants, animals or natural communities. In order to provide informed comments, program scientists request the opportunity to conduct a survey of the property to evaluate habitat and determine the potential for species of conservation concern. Please note that our scientists have extensive knowledge of the flora and fauna of the state. The survey will be conducted at no expense to the landowner. Recommendations provided in a report to the landowner will include options for minimizing impacts to wildlife habitat and species of concern. Please contact Edna Stetzar at (302) 735-8654 or at Edna.Stetzar@state.de.us if the landowner will grant a site visit.

Forest Preservation.

- According to the PLUS application, 15.89 acres out of 52.97 acres of forest will be removed by this project. This calculation is clearly inaccurate given the site is entirely forested and 49 lots, associated roadways, and stormwater facilities are being proposed. Given the topography and terrain, an extensive amount of grading may be needed which will entail clearing additional acres of trees. It should also be recognized that future clearing by residents for play areas, dog kennels, sheds, swimming pools, etc. is likely to occur.

Cumulative forest loss throughout the State is of utmost concern to the Division of Fish and Wildlife which is responsible for conserving and managing the State's wildlife. Based on a study conducted by the Delaware Forest Service, between 2002 and 2009, nearly 16,000 acres of unprotected forests occurred on land approved for development. The study also found that the average size of a forested parcel is less than 10 acres, illustrating that along with forest loss is an increase in forest fragmentation. Another study found that the cumulative loss of forest in Delaware has led to a corresponding loss of forest-dependent species (Environmental Law Institute. 1999. Protecting Delaware's Natural Heritage: Tools for Biodiversity Conservation. ISBN#1-58576-000-5). For migratory birds, it is extremely important to conserve large tracts of forests in the State of Delaware due to its position within the Atlantic flyway. In addition, forests provide environmental services that benefit humans directly such as water quality protection

(erosion control and sediment, nutrient, biological and toxics removal), climate moderation, aesthetic value and recreational opportunities.

- Developments that occur within wooded areas reduce the habitat value for wildlife due to clearing, fragmentation, and subsequent landowner activities. Species that can tolerate habitat loss and fragmentation may attempt to co-exist with residents, while more sensitive species will likely be extirpated from the site and be forced into surrounding areas. Either scenario can result in an increase in human/animal conflicts
- The applicant is encouraged to consider preservation of some or all of the forested resources at this site. There are incentive-based programs for wildlife management available to private landowners through our agency (DNREC) and other agencies. Please contact Bill Jones at (302) 284-4795 if the landowner(s) is interested in more information.

If preservation is not considered, the following is recommended:

- 1) The forest loss estimate should be re-calculated to accurately reflect clearing that will result from this project.
- 2) Atlantic white cedar wetlands and tidal scrub-shrub wetlands should be delineated and protected by at least a 100-foot upland buffer (300 feet would be preferred, if feasible). This buffer zone should be *between* lot lines and wetland boundaries and comprised of existing vegetation or planted with Delaware native species (not comprised of mowed lawn). We recognize that this site is fairly narrow in width and site plan options may or may not be limited, but the wetlands at this site are especially sensitive to disturbance and changes in water quality and may need a higher level of protection in order to persist. A site plan reconfiguration that would provide a wider buffer, especially for the Atlantic white cedar wetlands, should be considered. In addition, surveys should be conducted to determine if swamp pink is present and protection should be afforded this plant (if present).
- 3) Efforts should be made to minimize tree clearing through reconfiguration of the site plan, during construction, and via deed restrictions/easements that would minimize future clearing by residents.
- 4) To reduce impacts to nesting birds and other wildlife species that utilize forests for breeding, we recommend that clearing not occur April 1st to July 31st. This clearing recommendation would only protect those species during one breeding season; because once trees are cleared the result is an overall loss of habitat.

Species and Habitats of Concern.

- In the absence of site-specific information, DNREC offers the following comments:

A review of the database indicates that the following state rare, federally listed or Species of Greatest Conservation Need¹ (SGCN) occur adjacent to the project site. If suitable habitat exists on-site, these species could occur within the project area:

Scientific Name	Common Name	Taxon	State Rank	State Status	SGCN Tier
<i>Coragyps atratus</i>	Black Vulture	Bird	S2B		Tier 2
<i>Melanerpes erythrocephalus</i>	Red-headed Woodpecker	Bird	S1	E	Tier 1
<i>Callophrys gryneus</i>	Juniper hairstreak	Butterfly	S2		Tier 2
<i>Chamaecyparis thyoides</i>	Atlantic White Cedar Wetland Community	Community	S2		n/a

State Rank: S1- extremely rare within the state (typically 5 or fewer occurrences); S2- very rare within the state (6 to 20 occurrences); B - Breeding;

State Status: E – endangered, i.e. designated by the Delaware Division of Fish and Wildlife as seriously threatened with extinction in the state;

SGCN Tiers: **Tier 1** Species of Greatest Conservation Need (SGCN) are those that are most in need of conservation action on order to sustain or restore their populations. They are the focus of the Delaware Wildlife Action Plan (DEWAP), which is based on analyzing threats to their populations and their habitats, and on developing conservation actions to eliminate, minimize or compensate for these threats. **Tier 2** SGCN are also in need of conservation action, although not with the urgency of Tier 1 species. Their distribution across the landscape will help determine where DEWAP conservation actions will be implemented on the ground. N/a-not applicable. Plant species of concern are not addressed in the DEWAP.

- **Black Vulture (*Coragyps atratus*)** inhabits a variety of areas from tidal marsh to woodlands, but nests are usually in wooded areas away from human disturbance. Nests are typically placed in old abandoned structures or in dense, enclosed debris piles such as fallen logs or stacks of lumber.

¹ Species of greatest conservation need (SGCN) are indicative of the overall diversity and health of the State's wildlife resources. Some may be rare or declining, others may be vital components of certain habitats, and still others may have a significant portion of their population in Delaware. SGCN are identified in the Delaware Wildlife Action Plan (DEWAP) which is a comprehensive strategy for conserving the full array of native wildlife and habitats-common and uncommon- as vital components of the state's natural resources. This document can be viewed via our program website at <http://www.fw.delaware.gov/dwap/Pages/default.aspx> This document also contains a list of species of greatest conservation need, Key Wildlife Habitat Maps, as well as species-habitat associations.

- **Red-Headed Woodpecker (*Melanerpes erythrocephalus*)** is a State-Endangered bird that depends on open mature forested areas that contain some dead stranding trees. According to “Birds of Delaware²” this species could be extirpated from Delaware if open mature forests aren’t preserved. Surveys conducted in May or June could confirm if this species is nesting within the project area.
- **Juniper Hairstreak (*Callophrys gryneus*)** is a state-rare butterfly that typically occurs in woodlands, scrub-shrub wetlands, pastures and other areas where larval host plants in the juniper family occur. Given the Atlantic White Cedar wetlands and scrub-shrub habitat, there is also the potential for additional species within this family to occur; specifically Hessel’s Hairstreak (*Callophrys hesseli*) and Frosted elfin (*Callophrys irus*). These species have a very short flight period so surveys to determine if they occur within the project area would have to be conducted April to early May.
- According to our GIS database, an **Atlantic white cedar community (AWCC)** occurs along the Broadkill River within the project area. This wetland community is mapped as Key Wildlife Habitat in the Delaware Wildlife Action Plan (DEWAP³) because it is rare within the state and has the potential to harbor a high diversity of Species of Greatest Conservation Need (SGCN). Swamp pink (*Helonias bullata*) is a federally listed plant that typically occurs in Atlantic white cedar and maple/gum swamps in the Coastal Plain and it could possibly be present. AWCC typically grow under unique conditions and are sensitive to sedimentation and changes in water quality, especially pH. The hydrological regime is a major determinant of the resulting biota in this system and a change in land-use could potentially impact this community.
- In addition, according to DNREC GIS database **tidal shrub wetlands** occur along the Broadkill River within the project area. These wetlands are mapped as Key Wildlife Habitat in DEWAP because they are part of a larger wetland complex, provide habitat for an array of wildlife species, and could potentially support SGCN. This wetland type is transitional between emergent wetlands and forested wetlands and specific hydrologic, edaphic, and topographical conditions must be in place in order for tidal shrub wetlands to develop. If these conditions are disturbed or changed in any way from construction activities, the potential exists for community structure and plant species composition to shift in an unfavorable direction. Disturbance such as soil runoff from construction activities, run-off from lawns, etc. would be detrimental to this wetland type.

² Hess, G.K., R.L. West, M.V. Barnhill III, and L.M. Fleming. 2000. Birds of Delaware. Delmarva Ornithological Society. University of Pittsburg Press. ISBN 0-8229-4069-8

³ The Delaware Wildlife Action Plan (DEWAP) is a comprehensive strategy for conserving the full array of native wildlife and habitats-common and uncommon- as vital components of the state’s natural resources. This document can be viewed via our program website at <http://www.dnrec.state.de.us/nhp>.

Natural Areas.

- The entire parcel is composed of the Broadkill River Natural Area and as such, the Office of Nature Preserves urges the applicant to seriously consider permanent preservation options and dedicating the site as a Nature Preserve.

Parks and Recreation.

- Because of the extensive nature of this brickyard complex and the potential for early historic and native American sites north of Silver Mist Run, the Cultural Resource office strongly encourages the owners to consider preservation of the north half of this parcel through The Nature Conservancy.

The parcel to the east is a recreation area owned/managed by The Nature Conservancy. The Nature Conservancy property has a trail that extends to a public pier on the property. It is recommended that a trail/pathway connection is made to the adjacent property. This would eliminate the need for a community pier on the parcel while preserving more natural space.

Additional air quality information.

- Measures may be taken to substantially reduce the air quality emissions and include:
 - **Construct only energy efficient buildings.** Energy Star qualified buildings are up to 30% more energy efficient. These savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Every percentage of increased energy efficiency translates into a percent reduction in pollution.
 - **Offer geothermal and/or photo voltaic energy options.** These systems can significantly reduce emissions from electrical generation, and from the use of oil or gas heating equipment.
 - **Provide tie-ins to the nearest bike paths and links to any nearby mass transport system.** For every vehicle trip that is replaced by someone using a sidewalk, bike path or mass transit can significantly reduce mobile source emissions.
- Additionally, the following measures will reduce emissions associated with the actual construction phase of the development:
 - **Use retrofitted diesel engines during construction.** This includes equipment that is used on-site as well as equipment used to transport materials to and from site.

- **Use pre-painted/pre-coated flooring, cabinets, fencing, etc.** These measures can significantly reduce the emission of VOCs from typical architectural coating operations.
- **Plant trees at residential units and in vegetative buffer areas.** Trees reduce emissions by trapping dust particles and by replenishing oxygen. Trees also reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, whereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.

This is a partial list, and there are additional things that can be done to reduce the impact of the development on air quality. The applicant is advised to contact DNREC Air Quality Management Section for measures that may be incorporated into the Brickyard Landing Development.

Delaware State Fire Marshall's Office – Contact Duane Fox 739-4394

- 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.statefiremarshal.delaware.gov, technical services link, plan review, applications or brochures.

Delaware Department of Education – Contact John Marinucci 735-4199

DOE offers the following comments on behalf of the Cape Henlopen School District.

- Using the DOE standard formula, this development will generate an estimated 25 students.
 - DOE records indicate that the Cape Henlopen School Districts' *elementary schools are at or beyond 100% of current capacity* based on September 30, 2009 elementary enrollment.
 - DOE records indicate that the Cape Henlopen School Districts' *secondary schools are not at or beyond 100% of current capacity* based on September 30, 2009 secondary enrollment.
 - While the Cape Henlopen School District secondary schools are not currently beyond capacity, *the district does NOT have adequate student capacity to accommodate the additional students likely to be generated from this development* given the number of planned and recorded residential sub divisions within district boundaries. This development, in conjunction with other planned developments within the district boundaries will cause significant burden to the Cape Henlopen School District.

- The DOE requests that the developer contact the Cape Henlopen School District Administration to address the issue of school over-crowding that this development has the potential to cause.
- The DOE requests that the developer work with the Cape Henlopen School District transportation department to establish developer supplied bus stop shelter ROW

Department of Agriculture – Contact Scott Blaier 698-4529

- The Delaware Department of Agriculture Forest Service encourages the school district to use the “Right Tree for the Right Place” for any design considerations. This concept allows for the proper placement of trees to reduce heating and cooling costs. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource. To further support this concept the Delaware Forest Service does not recommend the planting of the following species due to the high risk of mortality from insects and disease:

Callery Pear

Leyland Cypress

Ash Trees

Red Oak (except for Willow Oak)

If you would like to learn more about the potential problems or impacts associated with these trees, please contact the Delaware Forest Service for more information at (302) 698-4500.

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.

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

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

Sincerely,

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

Constance C. Holland, AICP
Director, Office of State Planning Coordination

CC: Sussex County
Town of Milton