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Ms. Constance C. Holland, AICP
Director, State Planning Coordination
Office of Management and Budget
The State of Delaware
122 William Penn Street, Third Floor
Dover, DE 19901

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

Dear Ms. Holland:

Thank you for hosting our meeting with the State agencies on September 22, 2010 to discuss the proposed plans for the Brickyard Landing Project, a proposed 49 unit single family home subdivision located near Milton in Sussex County. The project is located on Round Pole Bridge Road (SCR 257) approximately 1,700 feet from the intersection with Cave Neck Road (SCR 88).

Please find our response(s) to each of your comments below your comment in bold text. Attached in a separate document are additional responses to the PLUS comments from Mr. Ed Launay pertaining to the wetlands and wetland related issues referred to within this document.

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:

To reiterate our comments made at the PLUS Meeting and at the Sussex County Planning and Zoning Commission meeting, it is the Owner/Developer's position that the project is not a historic site suitable for preservation. It is a former brickyard that went bankrupt in the early 1930's. The land was then purchased by the current owner's family and has been in their possession ever since. The ruins associated with the brick-making operation are unstable and unsafe and overgrown with vegetation. The owner recognizes that documentation of the brick-making site may be relevant to the economic history of the area. The owner is willing to provide access to the site to the Office of State Historic Preservation so that the site can be documented before any further deterioration. Please refer to the ERI response for a more detailed discussion of this topic.

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.

To reiterate our comments made at the PLUS Meeting and at the Sussex County Planning and Zoning Commission meeting, it is the Owner/Developer's position that the project is not a historic site suitable for preservation. It is a former brickyard that went bankrupt in the early 1930's. The land was then purchased by the current owner's family and has been in their possession ever since. The ruins associated with the brick-making operation are unstable and unsafe and overgrown with vegetation. The owner recognizes that documentation of the brick-making site may be relevant to the economic history of the area. The owner is willing to provide access to the site to the Office of State Historic Preservation so that the site can be documented before any further deterioration. Please refer to the ERI response for a more detailed discussion of this topic.

As with all projects developed within Sussex County or elsewhere in the State we fully plan to comply with the National Historic Preservation Act (36 CFR 800). As of this date the owner/developer does not anticipate any Federal involvement.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- In accordance with Section 3.2.3 of DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access, DelDOT 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 DelDOT'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.

When submitting for the DelDOT Letter of No Objection to the Entrance Location we completed the Initial Stage Fee Calculation Form, enclosed the proper fee and a copy of the plan to DelDOT. Based on the site traffic (both existing and proposed future) that this subdivision will generate the developer chose to participate in a Wide Area Traffic Study and paid the required fee to DelDOT. This was done in lieu of a Traffic Impact Study as this subdivision will not generate significantly more traffic on the surrounding infrastructure and fully complies with DelDOT requirements in this area.

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).

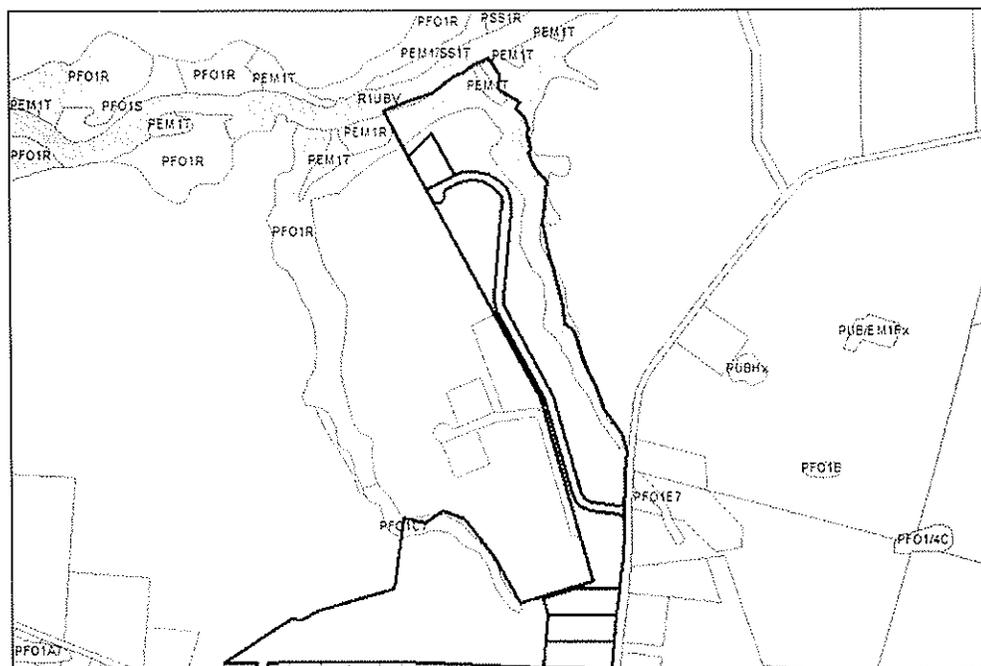


Figure 1: SWMP mapping in the immediate vicinity of the proposed project

- 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.

The State and Federally-Regulated Waters and Wetlands that exist on this site have been delineated by ERI, surveyed by a Delaware-registered land surveyor and located by ERI. Wetland boundaries and proposed buffers are present on project plans.

We understand the need to preserve and protect the wetlands within this site. The design of the subdivision keeps all lots out of the Federal Jurisdictional Wetlands and Delaware Subaqueous Lands and Mapped State Wetlands.

Any permits that may be necessary for Agency Approval(s) of this subdivision infrastructure will be fully addressed during the design phase of this project.

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.

The development of Brickyard Landing will not significantly impact TMDLs within the drainage basin. All of the wastewater for this project will be directed to the Milton Municipal Wastewater Treatment Plant currently owned and operated by Tidewater Utilities, a licensed public utility.

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.

We acknowledge your comments. All potable and fire water supply for this project will be provided by a licensed public water supplier having a CPCN for the site. The supplier will adhere to all concerns relating to water service for this project.

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).

We will work closely with Sussex Conservation District and will utilize Best Management Practices (BMP's) in the implementation of the stormwater plan design for this project. Contact with the Conservation District has been made and initial discussions related to stormwater management have taken place.

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.

The flood elevation map for this project is the same as referenced within these comments. A flood base elevation study will be initiated to meet flood elevation requirements that are already in existence in the area and documented by adjacent subdivisions in the immediate area. Flood elevations for those projects are of public record and will be utilized to develop base flood elevation data for this project.

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.

ALL applicable Sussex County and State of Delaware Laws, Rules and Regulations will be adhered to in the design and implementation of this subdivision.

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

We acknowledge your comments and will comply where appropriate.

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.

We acknowledge your comments. All required notes pertaining to adjacent agricultural activities will be addressed as required by Sussex County in their review process of this subdivision. Please note that Sheet Note No. 5 on Plan Sheet P-1 contains the Ag note as required by Sussex County Zoning.

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.

Please refer to the ERI response for a detailed discussion of this topic.

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.

The developer has no issue with the Department's explanation. Please refer to the previous responses to DelDOT comments mentioned earlier in this document.

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.

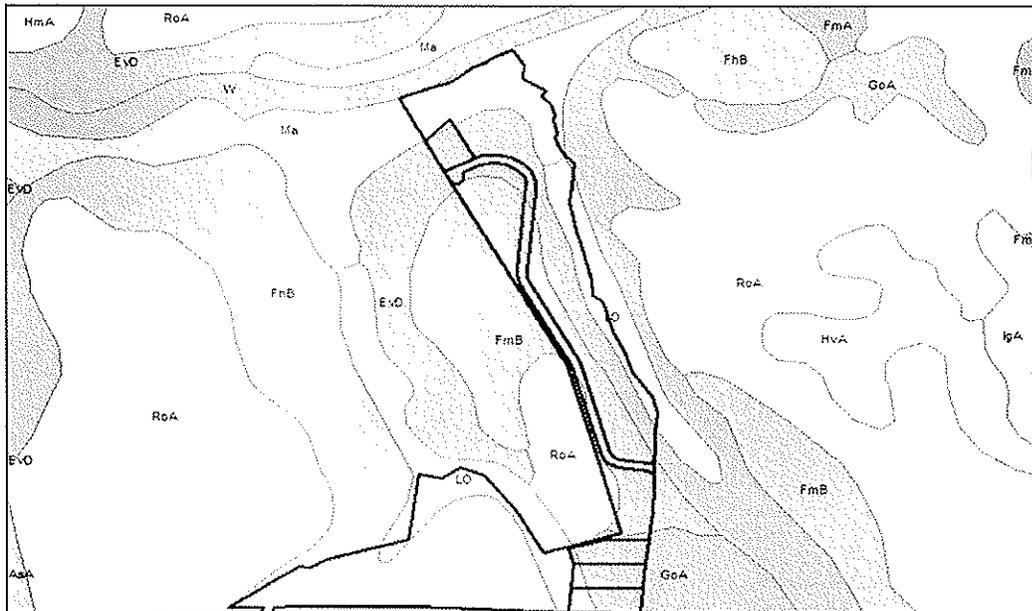


Figure 2: NRCS soil survey mapping update in the immediate vicinity

The project has avoided development in hydric soils and wetlands. Please refer to the ERI response for a detailed discussion of this topic.

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.

The project has avoided development of wetlands and has provided wetland buffers beyond the requirements of Sussex County Code. Please refer to the ERI response for a detailed discussion of this topic.

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:

Comment responses pertaining to TMDLs are contained elsewhere within this document.

- 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.

It is the intention of the owner/developer to restrict tree removal to only that which is necessary to safely construct the required infrastructure and provide an adequate pad site for the homes.

- Maintain a 100-foot buffer width(s) from all delineated wetlands (USACE and State approved wetland delineations).

Appropriate mandated buffers made a part of law have been adhered to in the design of this proposed subdivision.

- 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.

Best Management Practices will be a major part of the stormwater design for this project.

- 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.

Appropriate Best Management Practices (BMP’s) will be incorporated within the stormwater design for this project.

- 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.

The owner/developer will investigate this 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.

Access to the stormwater facility located behind Lots 17 and 18 is provided by a 20 foot wide drainage/utility easement reserved on each interior lot line as noted in Sheet Note No. 6 on Plan Sheet P-1 of this Preliminary Site Plan that was provided as a part of this PLUS application. The access to the pier will remain in its proposed location and a permit application for the pier/walkway will be a part of the design process.

- 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.

Existing upstream and downstream stormwater facility/drainage conditions will be investigated as required during the stormwater design for this subdivision.

- 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.

A drainage/stormwater maintenance plan will be developed as a part of this stormwater design for this subdivision.

- 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.

This issue is fully addressed in the requirements of subdivision design as promulgated by Sussex County. Please refer to the ERI response for a detailed discussion of this topic.

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.

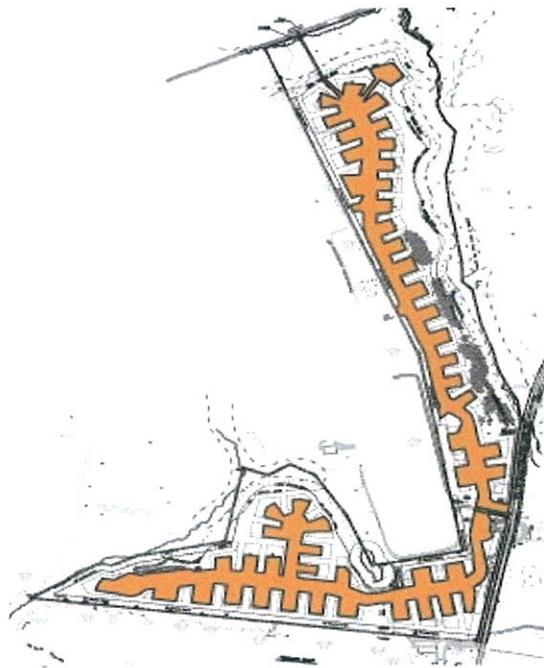
As stated at the PLUS meeting the owner/developer welcomes a site visit and will grant access upon written request and liability release. Please refer to the ERI response for a detailed discussion of this topic.

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.

We believe the calculations, as shown on Plan Sheet P-1 within the Site Data, are correct to the best of our knowledge at this stage of the design process and have included a Clearing Exhibit below. Tree clearing will be limited as shown on the Exhibit. The road right-of-way along with an additional area outside the road right-of-way will be cleared to allow for the construction of the roads, driveway accesses and also for the stormwater transmission/treatment swales where required. Lot clearing will be restricted as stated previously. Lots containing slopes to the rear will be required to construct homes with walk out basements and excessive filling of the lots will not be allowed.

Please refer to the ERI response for additional discussion of this topic.



Clearing Exhibit

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.

Forest preservation is incorporated within the open space and wetland areas on this plan.

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.

Please see previous comment responses relating to this subject and ERI response on this topic.

- 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).

Please refer to the ERI response for a detailed discussion of this topic.

- 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.

The plan fully incorporates forest preservation and minimal clearing.

- 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.

Clearing will be scheduled to minimize impacts to the birds and wildlife that exist on the project site.

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.

Please refer to the ERI response for a detailed discussion of this topic.

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.

If the State Federal Government or another group desires to purchase this property for preservation the owner/developer will entertain all offers at Fair Market Value.

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.

Please refer to the ERI response for a detailed discussion of this topic.

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.

As stated previously, we acknowledge your comments and will strive to comply with all requirements made a part of Delaware State Code.

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

We acknowledge your comments. We will coordinate a bus stop location for this subdivision with the local school district and with DelDOT. The project will be coordinated fully with the school district administration.

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

Ash Trees

Leyland Cypress

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.

All landscaping proposed for this subdivision by the Developer will incorporate native Delaware trees and shrubs.

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.

Conclusion

We appreciate the comments generated by your comprehensive review. We hope that these responses meet with your approval. Please contact me if you have any further questions or comments.

Sincerely,



Ken Kullman
Project Manager
302-841-2819
kkullman_eng@yahoo.com

cc: Office of State Planning
Mr. Lawrence Lank, Sussex County Planning and Zoning Director
Mr. Jim Fequa, Esq.
Mr. Sam Burke, H.P. Layton Partnership
Mr. Ed Launay, ERI

ERI 0598#0235

December 1, 2010

Ms. Constance C. Holland, AICP
Director, State Planning Coordination
Office of Management and Budget
122 William Penn Street, Suite 302
Dover, DE 19901

Re: Response to PLUS Review Comments
Office of State Planning Coordination October 20, 2010 Letter
Brickyard Landing 2010-09-01

Dear Ms. Holland:

On behalf of the owner/developer of the Brickyard Landing project, Environmental Resources, Inc. (ERI), is providing responses to agency comments on various environmental topics provided in your letter of October 20, 2010. This letter is intended to supplement a response provided on behalf of the owner/developer by their project civil engineer, Engineering Consultants International, LLC (ECI).

The Brickyard Landing project is a 49-unit single-family residential subdivision on 59.97 acres of land located near Milton in Sussex County on Round Pole Branch Road (SCR 257), 1,700 feet from the intersection of SCR 257 and SCR 88. The tidally-flowed Broadkill River forms the northerly boundary of the site and unnamed nontidal stream draining into it forms the easterly boundary of the site. The project consists of Parcels 32.00, 32.01, 32.02, 32.03, 32.04 and 32.05, Tax Map 2-35-21.00.

As part of the site planning process, ERI was retained to investigate and evaluate environmental features found on the subject site. Topics addressed herein include the presence and condition of historic and cultural resources; federally/State regulated waters and wetlands; hydric soils; buffers; drainage; forest preservation; and species and habitats of concern.

Agencies commenting in some fashion on these topics included the Office of State Planning Coordination (OSPC); State Historic Preservation Office; and DNREC's Division of Fish &

Wildlife, Division of Water Resources and Division of Parks and Recreation, all provided through Mr. Kevin Coyle of the DNREC Planning Section.

Historic Resources

As discussed in State Historic Preservation Office (SHPO) comments, portions of Brickyard Landing are the site of a brick-making operation that operated between 1887 and 1929, starting as the Milton Brick Manufacturing Company and later Lofland Brick Company. Observable ruins of structures which were part of the facility are found at the southeast corner of the property. As shown in 1937 aerial photography, the main facility once occupied approximately two acres located along Round Pole Branch Road and the Queen Anne Railroad right of way.

The current owners are appreciative of the fact that the brick-making operation that once occurred on the site may have relevance to the social and economic history of the area. As such, the owners are willing to allow qualified archaeologists to access the remains of the brick-making operation for study and documentation.

The owner proposes that the brick-making site be leased to the State Historic Preservation Office (SHPO) for a mutually agreeable study period for the nominal cost of \$1.00 per year. Archaeologists working for or on behalf of this agency can study the site as long as the responsibility and liability for these personnel are fully assumed by others under the lease agreement. As the aboveground remains appear to be in an unstable condition, the owner cannot be expected to be responsible for persons investigating this site.

In regard to any discussions about preservation of brick-making operation ruins or inference about other resources on the property, the owners take exception to several inferences and statements contained in the OSPC comments. We have reviewed the 1937 aerial photography along with the 1906 U.S. Geological Survey map. SHPO comments claim there was evidence of a landing on this property along the Broadkill River. While it appears there may have been a landing 0.5 mile west of the Brickyard Landing property, this information provides no evidence of a landing site on the subject property. Furthermore, as noted in DNREC comments, extensive tidally-flowed forest wetlands occur between the edge of the Broadkill River at this location. No potential historic landing site onto the Broadkill River physically exists.

Comments also allege the presence of a "sailor's path" (path running parallel to Broadkill River toward Milton) that some unspecified person apparently other than the SHPO mentioned. Our review of the 1937 photography and USGS topographic survey do not find any indication of such a path. Historic and current maps reveal that the Brickyard Landing property and its adjacent surroundings have a significant stream courses to the immediate east and west. As confirmed by ERI's wetland delineation, these streams have perennial flow and a wide area of associated wetlands.

No physical evidence of any shoreline path has been observed during our field investigations. It is not possible that a path would have existed along the Broadkill shoreline on this property due to the presence of wetlands and streams.

The remains of the brick-making operation, in the owner's opinion, are limited to a two-acre site beginning at the southeast corner of the remains of the Queen Anne rail bed and Round Pole Branch Road. These remains are now more than 80 years old and overgrown with vines and trees. Structurally the remains are unstable and falling down.

The owner appreciates the benefits that documentation of these remains may provide to the historic record of the area. As stated above, the owners will allow access so that documentation can occur before the site further deteriorates. Apart from documentation, due to their condition there are no remains at this site that merit consideration of preservation or long-term protection. The owner would point out that the history of Milton includes a variety of industrial uses which were scattered along the immediate area. This includes other clay borrow pit and brick-making sites. Many of these locations have been developed, redeveloped or otherwise altered with little or no attention paid. Understandably, this causes the owners to question the real intent of comments provided on this topic.

In addition to allowing access for documentation, in order to promote and enhance local history, the owner will assist or facilitate placement of an official historic marker by the Delaware Public Archives recognizing the past brick-making operation at Brickyard Landing.

Federally/State Regulated Wetlands

Federally-Regulated Wetlands—ERI performed a detailed study of this property to determine the extent of waters of the United States including wetlands subject to the Corps of Engineers' Regulatory Program. This study was performed utilizing the three-parameter approach (soil, vegetation and hydrology) outlined in the 1987 *Corps of Engineers Wetlands Delineation Manual*, the newly-implemented *Atlantic and Gulf Coast Regional Supplement* and associated Corps' guidance documents. A survey of wetland boundaries and a detailed wetland delineation report was prepared and has been submitted to the Philadelphia District, Corps of Engineers as recommended in OSPC and DNREC comments.

ERI field delineated 8.43 acres of federally-regulated wetlands on the Brickyard Landing property. These wetlands abut the shoreline of the Broadkill River and two unnamed stream courses which drain into it from the east. The wetlands and stream courses are geographically well defined with a low-lying landscape position. The types and locations of wetlands shown on available resource guidance maps mentioned in OSPC and DNREC comments such as the National Wetland Inventory (NWI) and Statewide Wetland Mapping Project (SWMP) were consistent with the results

of ERI's wetland delineation. However, ERI's delineation is a highly accurate field delineation located by a Delaware registered land surveyor which supersedes any guidance maps. The boundary of federally-regulated wetlands is provided on project plans..

State-Regulated Wetlands and Subaqueous Lands—The Brickyard Landing site also contains State-regulated wetlands which consist of tidally-influenced freshwater forested wetlands. These wetlands are located along the Broadkill River and along the downstream extent of the two aforementioned unnamed tributaries which drain into it. The locations of State-regulated wetlands have been placed on project plans in accordance with DNREC Tidal Wetlands Map #DNR-134.

In addition, ERI also mapped the locations of subaqueous lands, in this case the Broadkill River and the two unnamed tributaries on the property which drain into it. All of these waterbodies are located within the interior of field-delineated wetlands. An inspection to verify the boundary of subaqueous lands and State wetlands was completed during the summer of 2010 by Ms. Melanie Tymes, DNREC Wetlands & Subaqueous Lands Section. The approved boundaries are shown on the Brickyard Landing site plans we provided to your office.

Wetland Impacts—Brickyard Landing has been designed to avoid impacts to federally-regulated wetlands and State-regulated wetlands and subaqueous lands. No filling or disturbance of wetlands for non-water dependent uses such as residential lot construction is proposed. No lot lines have been placed within any wetlands or subaqueous lands.

Two minor impacts are proposed. First, a ±70-foot-long road crossing over nontidal wetlands is needed for site access in the southwest quadrant of the site (between Lots 45 and 46). The crossing does not involve State wetlands or subaqueous lands. Only federally-regulated, nontidal, forested wetland will be impacted. Currently, a bridge span is being considered for this crossing. Since the bridge span would not include the discharge of fill material or mechanized land clearing, no permit from the Corps of Engineers would be required in this case.

A wetland crossing using culvert pipes and fill may also be considered by the owners depending upon final construction cost of the bridge alternative and other design considerations. The drainageway being crossed has only ephemeral flow during storm events so it is suited to a simple culverted crossing. This type of crossing is routinely authorized by the Corps of Engineers through their Nationwide Permit program. If a filled road crossing is proposed as part of the approval process, a predischarge notification will be made to State and federal resource agencies. This will involve coordination with the State Historic Preservation Office under Section 106 of the National Historic Preservation Act within the portion of the site determined to be the "permit area" by the Corps of Engineers.

The second impact under consideration by the owners is providing water access to the Broadkill River via a single community pier. No individual docks or piers are proposed as part of this project. The proposed community pier will extend ± 200 feet over State-regulated wetlands and subaqueous lands. We appreciate the comment from the DNREC Wetlands and Subaqueous Lands Section regarding their concerns over issuing permits for piers over 50 feet. However, if a future application is made for this pier, the developer will place a restriction prohibiting construction of any future private piers. We understand that, if the developer elects to submit an application for a community pier, the design and impacts of the structure will be fully considered by the Wetlands and Subaqueous Lands Section at that time.

Brickyard Landing has nearly 700 feet of shoreline along the Broadkill River. The owner believes that, consistent with the historic right of private ownership recognized in the *Regulations Governing the Use of Subaqueous Lands*, some reasonable riparian access should be made available for this property.

In regard to the DNREC Parks and Recreation suggestion that a trail or pathway be constructed to access an existing pier landing on the Nature Conservancy property, this would involve filling or bridging State wetlands and subaqueous lands and federally-regulated wetlands as the boundary with the Nature Conservancy is a stream course. It would also involve wetland impacts on Nature Conservancy land. We estimate the trail system through Nature Conservancy property to reach the landing on their property is at least 0.3 mile, making it very distant for Brickyard Landing residents. This is not a practical option.

Hydric Soils

OSPC comments indicate the presence of hydric soils as mapped by the USDA *Soil Survey of Sussex County* in the Manahawkin (Ma) and Longmarsh (LO) series. Hydric soils often support wetlands and have significant development limitations. These soil series are often associated with natural floodplain areas of rivers and streams.

ERI performed a detailed on-site wetland investigation which included a soils evaluation. Hydric soils were confirmed to occur on low-lying portions of the property. However, these soils are limited to wetland areas and stream courses identified as part of ERI's wetland delineation study. As previously discussed in the section on wetland impacts, the project has avoided development in both wetlands and hydric soils in accordance with OSPC comments.

Buffers

Sussex County Code requires a 50-foot buffer from DNREC-regulated wetland and perennial streams. On Brickyard Landing, State-regulated wetlands and perennial streams are limited to areas

immediately adjacent to the Broadkill River and the westerly downstream extent of two unnamed tributary courses which drain into it, portions of which are on the subject property. Federally-regulated wetlands lie landward of these features.

Brickyard Landing has elected to provide a 50-foot buffer landward of all federally-regulated wetlands and State subaqueous lands, thereby substantially exceeding required county buffer requirements. The project has been designed so that no lot line extends into any wetlands or the designated 50-foot buffer except in a few limited areas where only the 30-foot agricultural buffer applies. A 30-foot agricultural buffer is included around the perimeter of the property in accordance with OSPC comments. On many areas of the site, open space has been planned between buffers and lot lines in order to provide expanded natural buffers of variable widths.

DNREC consistently recommends expanding buffers beyond what any landowner can and should be reasonably expected to provide which is understandable. In the case of Brickyard Landing, the owners have expanded buffers well beyond the legal requirements of Sussex County Code. This expanded buffer in combination with the project's plan for management and treatment of stormwater will adequately address water quality concerns.

Drainage

The owner's engineer will consider all recommendations of DNREC's Drainage Section. However, it should be noted that there are no ditches or culverts currently on the Brickyard Landing property. Currently, drainage is provided by the natural tributary courses and associated wetlands at low-lying landscape positions toward which any runoff is directed. The development plan for the project will not alter this condition. As requested, drainage easements will be provided for stormwater management areas and conveyances of treated stormwater to these tributary courses.

An existing drainage easement is associated with a drainageway occurring with the upstream end of the easterly tributary found on this site. This drainage easement will be maintained as well as being outside of any proposed lot. Unrelated to the proposed project is the fact that a culvert pipe under the bed of the Queen Anne Railroad found along the southerly property line provides drainage for properties south of Brickyard Landing. The owners of Brickyard Landing will cooperate with landowners south of Brickyard Landing in regard to future maintenance or upgrades to the culvert under the railroad bed to the extent that a portion of the railroad bed is part of the owners property.

Forest Preservation

As stated in OSPC comments, the owner's PLUS application estimated that 15.89 acres of the 52.97-acre site will be cleared of forest. The entire site consists of forest of mixed ages.

A total of 22.5 acres of the site are dedicated to open space which will essentially remain forested. Clearing for roads and stormwater management area involves approximately 7 acres. A total of 23.42 acres are within lot areas.

Given the desirability of large wooded lots buffered from adjacent home sites, it is not anticipated future owners will clear entire lots. No need for clearing of individual wastewater disposal areas is needed as sanitary sewer is being provided. Therefore, the calculation for clearing per lot utilizes approximately 0.2 acre (8,700 square feet) per lot. The engineer believes that the forest clearing estimated is reasonable based upon current calculations and assumptions.

Species and Habitats of Concern

DNREC comments provided by the OSPC included the following species or habitats. The following responses are provided.

Atlantic white cedar/swamp pink--Atlantic white cedar occurs occasionally on this site in tidally-influenced State forested wetlands along the Broadkill River. As stated in these comments, swamp pink (*Helonias bullata*) a federally-listed endangered species is known to occur in these habitats. This wetland area type is first buffered by a substantial distance of federally-regulated nontidal wetlands. The owners have voluntarily provided a minimum 50-foot buffer from these federally-regulated wetlands. Management of stormwater for quality control from developed portions of the site will be provided. Therefore, protection of this resource is addressed.

Scrub Shrub Forest--Scrub shrub forest habitat, some of which is tidally-influenced, occurs along the downstream segments of the two tributaries draining toward the Broadkill River, portions of which are on Brickyard Landing. This wetland type is limited to areas of State-regulated wetlands. These areas are then bordered landward by federally-regulated nontidal wetlands. As mentioned above, the owners have elected to volunteer a minimum 50-foot buffer from the boundary of federally-regulated wetlands. Therefore, protection of this resource is addressed.

Black Vulture, Redheaded Woodpecker, Juniper Hairstreak--None of the above referenced species are federally-listed threatened or endangered species. These are species which are rare within the State of Delaware. As stated in OSPC comments, the species presented are known to have occurred on portions of the nearby McCabe Preserve, Nature Conservancy property. The occurrence of these species at Brickyard Landing depends upon whether or not suitable habitat is present on the Brickyard Landing site. Understanding that the McCabe Preserve contains a variety of habitat types such as old fields and open fields which do not occur at Brickyard Landing, the presence of these species at Brickyard Landing is unlikely.

The Black Vulture (*Coragyps atratus*) is a common and widespread species whose range extends throughout the southeastern United States extending to central Chile and Uruguay in South America. This species is rare in Delaware because it is at the northern extent of its habitat range. Furthermore, habitat and nesting requirements of the species depend upon open land scattered with forest or shrub lands. Large monotype forest blocks are not preferred habitat for this species. Accordingly, the development of Brickyard Landing is unlikely to impact this species.

The Redheaded Woodpecker (*Melanerpes erythrocephalus*) has a breeding range which includes the eastern half of the United States west of the Rocky Mountains and north to southern Canada. Historically, population size of the species has varied widely due to the relative abundance of food sources and preferred species of trees for nest sites. This species is rare in many eastern states. This species utilizes a wide range of habitats including open deciduous and riparian forests, orchards, parks, agricultural lands, savanna-like grasslands, beaver ponds with snags, forest edges and burned forest. This species depends upon open areas for catching of flying insects which are an important part of its diet. Habitat management includes providing scattered forest blocks greater than 4 acres with snags or dead trees for nesting.

Proposed open space and remaining forest areas at Brickyard Landing will provide potential habitat for this species. As habitat requirements for this species depend in part upon forest edge and open areas intermixed with small woodlots, development of the project may in fact enhance the value of remaining forest areas for this species.

Juniper Hairstreak (*Callophrys gruneus*) is a species which is rare to the State of Delaware. The published life history indicates that the overall population is widespread and variable. The Nature Conservancy ranks this species as globally secure.

Habitats for this species primarily include old fields, bluffs, barrens and juniper-dominated woodlands. Old field habitats with a relative abundance of suitable tree hosts such as red cedar occur on the nearby McCabe Preserve.

Brickyard Landing is a mixed-age forested site which lacks tree species which are common tree hosts for this species. Old field habitats are not present. Overall, the Brickyard Landing site does not provide any preferred habitat for this species.

Ms. Constance C. Holland, AICP
Office of Management and Budget
December 1, 2010
Page 9

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Conclusion

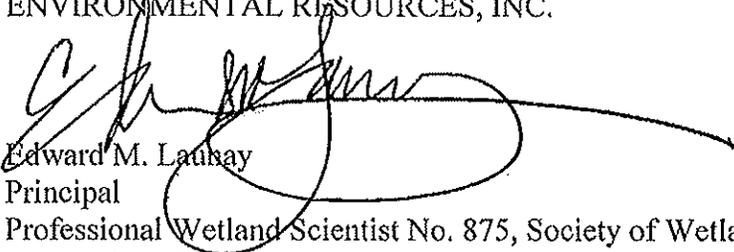
As part of planning for the Brickyard Landing project, environmental resources were identified and located. As requested in OSPC comments, the design of the project as developed by ECI avoids impacting sensitive areas which include wetlands, hydric soils and streams. The owners have voluntarily provided wetland buffers well in excess of Sussex County Code requirements. Significant areas of existing upland forest will be retained.

The owners understand the desire of the SHPO to document the brick-making operation that occurred on part of the site before it further deteriorates. The owners will cooperate with the SHPO to provide access. We encourage the SHPO to move forward as quickly as possible. Now that the location of this site has become publicized, the owner is concerned about trespassing and the unsafe condition of the ruins. Actions may need to be taken to knock down ruins which are unstable.

Upon your review of this response, I am available at your convenience if you or your staff have any questions.

Sincerely,

ENVIRONMENTAL RESOURCES, INC.



Edward M. Lathay
Principal

Professional Wetland Scientist No. 875, Society of Wetland Scientists
Corps of Engineers' Wetland Delineator Certification No. WDCP93MD0510036B

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