



STATE OF DELAWARE  
EXECUTIVE DEPARTMENT  
OFFICE OF MANAGEMENT AND BUDGET  
Budget Development, Planning and Administration  
State Planning Coordination

February 19, 2009

Mr. Ring Lardner  
Davis, Bowen & Friedel  
23 North Walnut Street  
P.O. Box 809  
Milford, De 19963

RE: PLUS review – 2009-01-01; Stonington

Dear Mr. Lardner:

Thank you for meeting with State agency planners on February 2, 2009 to discuss the proposed plans for the Stonington Mixed Use project to be located south of Lynnbury Woods Road, approximately 1,000 feet west of the intersection with Messina Hill Road.

This project has been previously reviewed as PLUS 2004-05-04 in May of 2004. The 2004 plan was for a subdivision containing 389 single family detached units. According to the information received, the plan has been amended and you are now seeking site plan approval from the Town of Cheswold for 741 residential units on 143 acres, including a mixture of townhouse, duplex and single family detached units.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. The developers will also need to comply with any Federal, State and local regulations regarding this property. We also note that as the Town of Cheswold is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the Town.

### **Executive Summary**

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

### **State Strategies/Project Location**

- This project is located in Investment Level 2 according to the *Strategies for State Policies and Spending*. This site is also located in the Town of Cheswold. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas. Our office has no objections to the proposed development of this project in accordance with the relevant Town codes and ordinances.
- The State supports the concept of increasing the diversity of housing types in order to be able to sell homes at a price which is attainable to those living and working in the area.
- The State has concerns about the design of the subdivision, particularly the large concentration of townhomes proposed at the rear of the project. Design recommendations are found below.

### **Street Design and Transportation**

- Previously, in 2003, a traffic impact study (TIS) was performed for the development of the subject land under the name Jahnell Property. That TIS evaluated a proposed development of 450 single-family detached houses. DelDOT 's review comments, issued in 2004, identified the need for the first two off-site improvements recommended below. Since then, other developments have been approved in the area, notably Saratoga (formerly Jo-Eve Farms) with the result that DelDOT now recommends that the developer be responsible for participating in an expanded set of road improvements.
- The development adjoins an industrial facility (the PPG Architectural Finishes plant) and only one street, Metamorphic Rock Drive, passing close to that facility, is proposed for access to 312 townhouse lots. DelDOT recommends that the developer contact the Norfolk Southern Railroad about the possibility of building a gated emergency access across their tracks to Moorton Road. While physical constraints, i.e. grade differences, would not permit the construction of that access near the south edge of the property, subject to those constraints, the emergency access should be located as far south as possible.
- Only one block of Igneous Rock Road is proposed to have driveway access. Because of the subdivision layout, this street will likely serve as a collector, serving more traffic, and likely having higher speeds than other streets in the development. DelDOT recommends that driveway access be eliminated on Igneous Rock Road, either by rearranging the streets and lots in that area of the development, adding alleys behind the houses fronting the street, or some combination of the two.

- Similar to comment b) above, DelDOT recommends that a route free of driveways be provided between the proposed townhouses and Igneous Rock Road. One way to do that would be to relocate duplex lots 29 through 38 and to run an alley from Metamorphic Rock Drive to Igneous Rock Road between Garnet Drive and Quartz Drive, but there are other options.

### **Natural and Cultural Resources**

- By reconfiguring and adding streets, along with increasing density by the addition of duplexes and townhomes, a new sediment and stormwater plan must be submitted. Because of problems while this site has been under construction, the Kent Conservation District has turned the inspection and review of the subdivision over to DNREC.
- With the increased density and relatively steep topography, DNEC is concerned that an underestimation of post-construction impervious cover could result in flooding and erosion.
- The Floodplain for Alston Branch is Zone A. No Base Flood Elevation has been established for this portion of the stream. If any portion of this property lies within the floodplain, a detailed flood study needs to be done to establish a base flood elevation. Cheswold is a participating community in the National Flood Insurance Program and has adopted a floodplain ordinance. One of the minimum requirements is that for any parcel greater than 5 acres or 50 lots, a base flood elevation must be established.
- In the area across from a Black Ash Seepage Swamp containing rare species (see map below), we recommend a 100-foot buffer. There should be no lot lines or infrastructure within this buffer zone.

This office has received the following comments from State agencies:

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

This project is located in Investment Level 2 according to the *Strategies for State Policies and Spending*. This site is also located in the Town of Cheswold. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas. Our office has no objections to the proposed development of this project in accordance with the relevant Town codes and ordinances.

The applicant explained at the PLUS meeting that the goal of the redesigned plan is to be able to construct homes that are available at attainable prices for families living and working in the area. Our office supports this goal and the concept of increasing the diversity of housing options available in this subdivision in order to achieve it. The comments from the DSHA elsewhere in this letter provide some details about the housing market in Kent County that will be useful to the developer.

The applicant further described the extent to which infrastructure is already in place, and how that influenced the redesign of the subdivision. We are aware that this creates some limitations on the redesign, but even so we are concerned about certain aspects of the projects design. Of particular concern is the large concentration of townhomes located in the rear (southern) portion of the subdivision. These homes have only a single point of access, which is a concern from an emergency services perspective. They are also designed without alley access, which raises questions about parking, emergency access, service delivery, access to rear yards, utility placement, and trash receptacle storage.

It is suggested that the project developer and the town consider the following design recommendations which will improve the quality of design in the project. A well designed project will be more marketable for the developer, offer a better quality of life for the residents, and be easier to serve by the Town and the various service and public safety agencies.

#### Design Recommendations:

- Mix the townhomes throughout the community, including in the front (eastern) portion of the subdivision.
- Mix single family homes and duplexes in the rear (western) portion of the subdivision. This will reduce the density of units with a single point of access, and larger yards will allow for a larger buffer between structures and sensitive natural resources and steep slopes. DNREC has some specific recommendations regarding buffering and natural resource protection elsewhere in this letter.
- Address emergency access to the rear (western) portion of the subdivision. DeIDOT and the State Fire Marshal have recommended that the developer explore a gated emergency access point across the railroad tracks.
- Provide alley access to the townhome areas. Alleys access allows for parking in the rear of the structure, which opens up street frontage for on-street (overflow) parking. Alleys also allow for enhanced emergency access, access to rear yards, and utility placement.
- Where alley access is not practical, construct larger townhomes that include garages and driveways. This will preserve some open space along the street, provide for adequate off-street parking, and provide residents with storage areas for trash receptacles and other yard equipment.
- Where alley access is not practical, provide for easements to allow residents of interior townhome units to access their rear yards. Deed restrictions should be enacted to address fencing in the rear of the townhomes. Developer supplied, uniform fencing would be even better.

- Address utility meter placement through the design process. Utility meters should be located discreetly out of view rather than on the front façade of townhome units. Alleys provide an excellent opportunity to place these items in the rear of properties.
- Address on-street and overflow parking through the design process. Alleys can open up street frontage for on-street parking. Alternatively, strategically placed overflow parking lots may be appropriate.

Additional information can be found in our publication titled Better Models for Development in Delaware, which is available upon request from our office. *These recommendations are advisory only. The Town of Cheswold has land use review, approval and permitting authority for this project in accordance with its Comprehensive Plan, codes and ordinances.*

**State Historic Preservation Office (SHPO) – Contact: Terrence Burns 739-5685**

No Comments Received

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

Stonington Associates, LLC, proposes to revise and expand the previously recorded Stonington residential subdivision. Presently, Stonington consists of 388 lots for single-family detached houses. Four houses have been built and two more are under construction. The developer now seeks to have part of the land, all of which is presently zoned R-2 in the Town of Cheswold, rezoned to R-3, and to resubdivide the property to reduce the number of single-family detached house lots to 99 and to create 312 townhouse lots and 330 duplex lots. The land was previously a 143.03-acre parcel (Tax Parcel LC-00-46.00-01-02.00). The land is located on the south side of Lynnbury Woods Road (Kent Road 152), and more specifically between Moorton Road (Kent Road 92) and Messina Hill Road (Kent Road 102).

- 1) Previously, in 2003, a traffic impact study (TIS) was performed for the development of the subject land under the name Jahnell Property. That TIS evaluated a proposed development of 450 single-family detached houses. DelDOT's review comments, issued in 2004, identified the need for the first two off-site improvements recommended below. Since then, other developments have been approved in the area, notably Saratoga (formerly Jo-Eve Farms) with the result that DelDOT now recommends that the developer be responsible for participating in an expanded set of road improvements detailed below:
  - a) Enter into an agreement to fund a signal at US Route 13 and Messina Hill Road North. Saratoga would share in this improvement.
  - b) Improve Lynnbury Woods Road to local road standards from Messina Hill Road to a point immediately east of the Norfolk Southern railroad

crossing. Plans have been designed and approved for this work but they should be resubmitted for review to ensure that they meet the current design standards. At a minimum, a stormwater management review will be required. The design should also include the Lynnbury Woods Road and Messina Hill Road intersection physical and signal improvements (items g and i below).

- c) Enter into an agreement to fund a signal at Seven Hickories Road (Delaware Route 42) and Brenford Road (Kent Road 42) / Seeneytown Road (Kent Road 168). Seven other developments would share in this improvement.
  - d) Enter into an agreement to fund a signal at Lynnbury Woods Road and Messina Hill Road. Saratoga would share in this improvement.
  - e) Enter into an agreement to fund a signal at Main Street (Delaware Route 42) and Commerce Street (Kent Roads 92 and 156). Saratoga and the Village of Nobles Pond would share in this improvement.
  - f) Extend the northbound left turn lane on US Route 13 at Messina Hill Road South by an amount to be determined. Saratoga would share in this improvement.
  - g) Enter into an agreement to fund a signal at Lynnbury Woods Road and Messina Hill Road. Saratoga would share in this improvement.
  - h) Enter into an agreement to improve the railroad crossing on Lynnbury Woods Road immediately east of Moorton Road. Saratoga would share in this improvement.
  - i) Improve the intersection of Lynnbury Woods Road and Messina Hill Road to provide a right turn lane from eastbound Lynnbury Woods Road onto southbound Messina Hill Road. Because of the cemetery on the southwest corner of the intersection, all of the widening will need to be done on the north side of the road. Saratoga would share in this improvement.
- 2) Lynnbury Woods Road is classified as a minor collector. DeIDOT's policy is to require a minimum right-of-way of 40 feet measured from the centerline of the road. Accordingly, they will require a right-of-way dedication as needed to meet this requirement and to provide any further rights-of-way needed to accommodate item 1b above.
  - 3) Because this development is within a municipality, its internal layout is necessarily outside our jurisdiction. However, DeIDOT offers the following advisory comments for consideration:

- a) The development adjoins an industrial facility (the PPG Architectural Finishes plant) and only one street, Metamorphic Rock Drive, passing close to that facility, is proposed for access to 312 townhouse lots. DelDOT recommends that the developer contact the Norfolk Southern Railroad about the possibility of building a gated emergency access across their tracks to Moorton Road. While physical constraints, i.e. grade differences, would not permit the construction of that access near the south edge of the property, subject to those constraints, the emergency access should be located as far south as possible.
  - b) Only one block of Igneous Rock Road is proposed to have driveway access. Because of the subdivision layout, this street will likely serve as a collector, serving more traffic, and likely having higher speeds than other streets in the development. DelDOT recommends that driveway access be eliminated on Igneous Rock Road, either by rearranging the streets and lots in that area of the development, adding alleys behind the houses fronting the street, or some combination of the two.
  - c) Similar to comment b) above, DelDOT recommends that a route free of driveways be provided between the proposed townhouses and Igneous Rock Road. One way to do that would be to relocate duplex lots 29 through 38 and to run an alley from Metamorphic Rock Drive to Igneous Rock Road between Garnet Drive and Quartz Drive, but there are other options.
- 4) The developer's site engineer should contact Mr. Brad Herb, project manager for Kent County, regarding specific requirements for access and off-site improvements. He may be reached at (302) 266-9600.

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

DNREC notes several concerns about the proposed project:

- By reconfiguring and adding streets, along with increasing density by the addition of duplexes and townhomes, a new sediment and stormwater plan must be submitted. Because of problems while this site has been under construction, the Kent Conservation District has turned the inspection and review of the subdivision over to DNREC.
- With the increased density and relatively steep topography, DNREC is concerned that an underestimation of post-construction impervious cover could result in flooding and erosion.
- The Floodplain for Alston Branch is Zone A. No Base Flood Elevation has been established for this portion of the stream. If any portion of this property lies within the floodplain, a detailed flood study needs to be done to establish a base

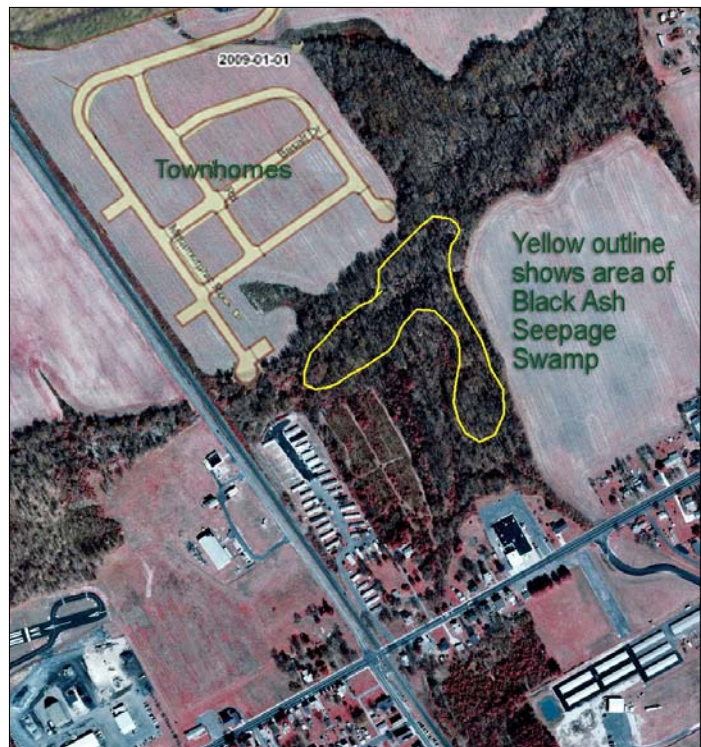
flood elevation. Cheswold is a participating community in the National Flood Insurance Program and has adopted a floodplain ordinance. One of the minimum requirements is that for any parcel greater than 5 acres or 50 lots, a base flood elevation must be established.

- In the area across from a Black Ash Seepage Swamp containing rare species (see map below), DNREC recommends a 100-foot buffer. There should be no lot lines or infrastructure within this buffer zone.

Comments by division and program follow.

## Fish and Wildlife

**Rare species.** According to the Fish and Wildlife database there are 12 rare plants within a Black Ash Seepage Swamp community along Alston Branch. This plant community was nearly destroyed by land clearing activities for another development. These rare plants still persist but the habitat is severely degraded and has not recovered from the disturbance. The current plan indicates that wetland buffers are 50 feet in width. DNREC recommends the applicant consider increasing the buffer to 100 feet in order to protect the rare plant community and water quality within the stream system. Redesigning the site or omitting lots and infrastructure within 100 feet of wetlands would be necessary to achieve this goal. Forested areas along water courses are used by wildlife for feeding, breeding, resting and as a travel corridor linking habitat. There should not be lot lines or infrastructure within this buffer zone and it should be placed in permanent conservation so that future clearing is less likely to occur.



**Nuisance Species.** Wet ponds created for stormwater management purposes may attract resident Canada geese. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. Exclusion is one of the most effective methods at deterring geese. In a commercial setting, completely fencing the pond at the edge (even one foot high) may be feasible. Even though geese can fly over the fence, if they constantly have to fly between land and water the area is less desirable. If fencing is not a desired option, DNREC recommends native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within an adequate buffer (15-30 feet in width) around the ponds. When the



view of the surrounding area from the pond is blocked, geese can't scan for predators and are less likely to reside and nest in the area of the pond. The vegetation also blocks the ability to easily move between land and water.

At this time, DNREC does not recommend using monofilament grids due to the potential for birds and other wildlife to become entangled if the grids are not properly installed and maintained. In addition, the on-going maintenance (removing entangled trash, etc.) may become a burden to the landowner or property manager.

The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized. *Edna Stetzar - (302) 653-2880, Edna.Stetzar@state.de.us*

## **Soil and Water Conservation**

**Sediment and Stormwater.** A new detailed sediment and stormwater plan will be required for this project. The current sediment and stormwater plan has been referred back to the Department, therefore, please contact the Sediment and Stormwater Program to schedule a meeting to discuss the sediment and erosion control and stormwater management components of the new 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 Division of Soil and Water Conservation, Sediment and Stormwater Program. Contact Jamie Rutherford of the Sediment and Stormwater Program at (302) 739-9921 for details regarding submittal requirements and fees.

Because of the parcel's location in an impaired watershed and the amount of impervious surface, green technology BMPs and low impact development practices should be considered a priority to reduce stormwater flow and to meet water quality goals.

**Drainage Program.** The Drainage Program requests that the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of onsite storm water. The Drainage Program requests that the engineer check existing downstream ditches and pipes for function and blockages prior to the construction. Notify downstream landowners of the change in volume of water released on them.

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. *Soil and Water - James Sullivan - (302) 739-9921, James.Sullivan@state.de.us*

**Flood management.** The Floodplain for Alston Branch is Zone A. No Base Flood Elevation has been established for this portion of the stream. If any portion of this property lies within the floodplain, a detailed flood study needs to be done to establish a base flood elevation. Cheswold is a participating community in the National Flood Insurance Program and has adopted a floodplain ordinance. One of the minimum requirements is that for any parcel greater than 5 acres or 50 lots, a base flood elevation must be established. We recommend the detailed flood study be submitted to FEMA for approval so the FIRM panel can be amended with a physical map change. *Soil and Water - Gregory Williams - (302) 739-9921, Gregory.Williams@state.de.us*

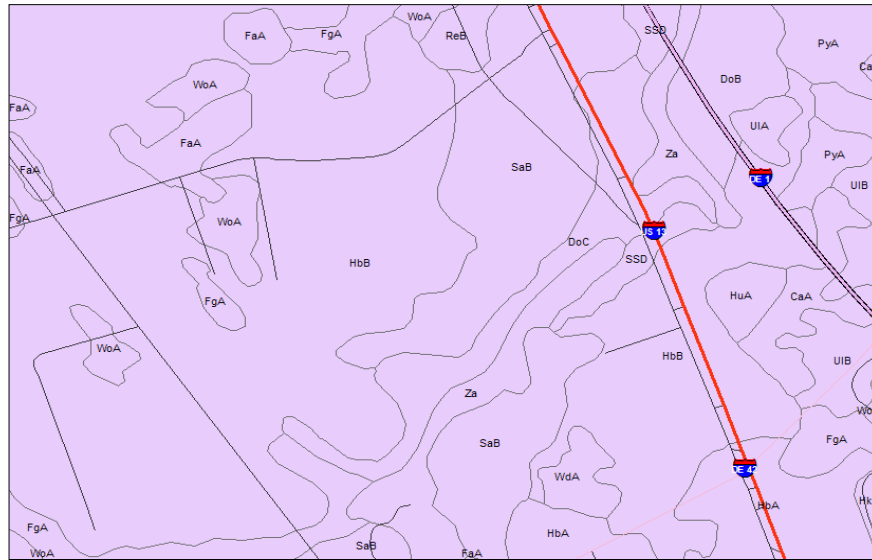
## **Water Resources**

**Water allocation.** The project information sheets state water will be provided to the project by Tidewater Utilities via a public water system. DNREC records indicate that the project is located within the public water service area granted to Tidewater Utilities under Certificate of Public Convenience and Necessity PSC-1464.

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. *Rick Rios, 302-739-9945, Ricardo.Rios@state.de.us*

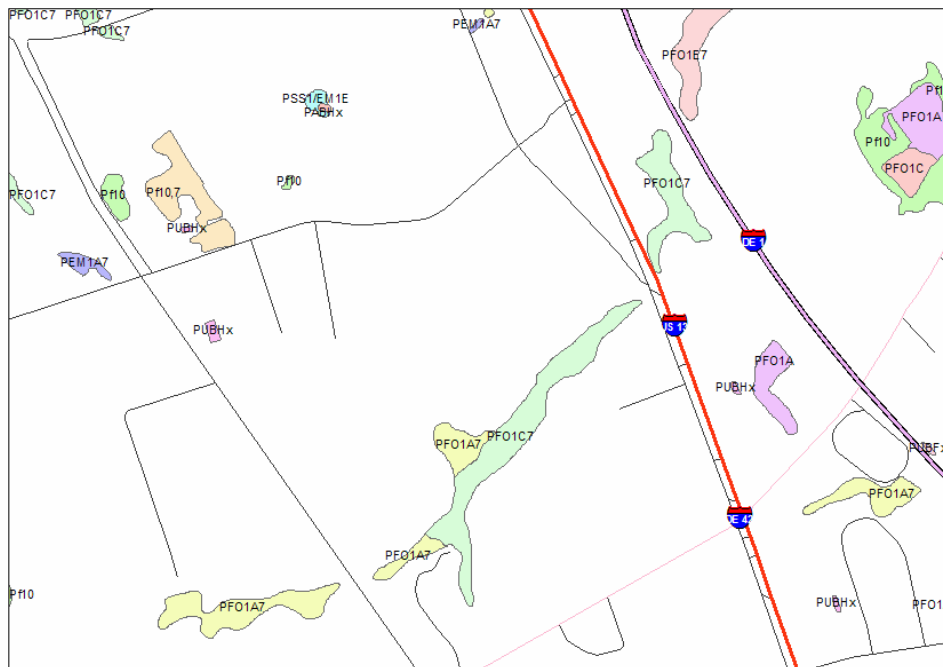
**Soils.** According to the NRCS soil survey update Sassafras (SaB, 2-5% slopes), Downer (DoC, 5-10% slopes), Hambrook (HbB, 2-5% slopes), Fallsington (FgA), and Zakiah were mapped on subject parcel(s). Sassafras, Downer, and Hambrook are well drained uplands soils that, generally, have few limitations for development. Fallsington and Zakiah are poorly to very poorly drained soils (hydric) associated with wetlands, and should be avoided (Figure 1).



**Figure 1: NRCS soil survey update mapping in the vicinity of the Stonington mixed use plan development.**

**Wetlands.** According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine riparian wetlands (PF01A7 & C7). (See figure 2).

The applicant is responsible for determining whether any State-regulated wetlands



**Figure 2: SWMP mapping in the immediate vicinity of the Stonington mixed use development.**

(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.

In addition, 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 applicant should also be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are also subject to regulatory requirements specified 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) manual is the basis for making a jurisdictional wetland determination for nontidal wetlands in Delaware. The applicant is forewarned that the USACE views the use of the National Wetlands Inventory (NWI) mapping or the Statewide Wetlands Mapping Project (SWMP) mapping as an unacceptable substitute for a field-based jurisdictional wetland delineation (i.e., 1987 USACE manual).

To ensure compliance with said USACE 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 USACE be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant's consultant delineates what they believe are nonjurisdictional isolated (SWANCC) wetlands (as asserted by the applicant in the PLUS application), the USACE 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 USACE. The USACE can be reached by phone at 736-9763.

Palustrine headwater water riparian wetlands associated with the Alston Branch tributary bound much of the southern boundary of the proposed project area. Headwater riparian wetlands serve to protect water quality which helps maintain the ecological integrity and functions throughout the length of the stream, including the floodplain system and/or water bodies further downstream. Since headwater riparian wetlands serve as natural buffers that protect the water and habitat quality of streams from sediment and nutrient-

laden runoff, their protection deserves the highest priority. Therefore, the Watershed Assessment Section strongly recommends that a 100-foot upland buffer be maintained or established from all of the riparian wetlands bounding Alston Branch. A literature review of existing buffer research by Castelle et al. (1994) has documented consensus among researchers that a 100-foot upland buffer is the minimum buffer width necessary-under most circumstances - to protect water quality.

**Impervious Surfaces and BMPs.** Based on a review of the PLUS application, post-construction surface imperviousness was projected to reach 55 percent. However, given the projected scope and density of this project, this estimate appears to likely understate post-construction surface imperviousness. When calculating surface imperviousness, it is important to consider all created forms of constructed surface imperviousness (i.e., rooftops, sidewalks, roads, lined ponds, and stormwater management structures) in the calculation for surface imperviousness; otherwise, an inaccurate assessment of this project's environmental impacts will result. Surface imperviousness should be recalculated if the above-mentioned forms of constructed surface imperviousness were not included.

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

**TMDLs.** Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Leipsic River watershed, although no regulations for this watershed have been adopted yet. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the Leipsic River watershed, "target-rate-nutrient reductions" of 40 percent for both nitrogen and phosphorus are required. Additionally, "target-rate-reductions" of 75 percent will be required for bacteria.

**TMDL compliance through the PCS.** As indicated above, Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been proposed for the Leipsic River watershed. The TMDL calls for a 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 75 percent reduction in bacteria. A pollution control strategy will be used as a regulatory framework to ensure that these nutrient reduction targets are attained. The Department has developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL

requirements. Additional nutrient reductions may be possible through the implementation of BMPs such as increasing the amount of passive, wooded open space (planted with native woody and herbaceous vegetation), wider vegetated buffers along watercourses, use of pervious paving materials to reduce surface imperviousness, and the deployment of green-technology stormwater management treatment technologies. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

### **Literature cited**

Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882.

*Comments for the Wetlands and Subaqueous Lands Section and Wetlands, Soil Assessment and Small Systems Permitting Branches were provided by John Martin, 302-739-9939, John.Martin@state.de.us*

## **Air and Waste**

**Air quality.** Housing developments may unnecessarily emit, or cause to be emitted, significant amounts of air contaminants into Delaware's air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:

- Emissions that form ozone and fine particulate matter; two pollutants relative to which Delaware currently violates federal health-based air quality standards,
- The emission of greenhouse gases which are associated with climate change, and
- The emission of air toxics

Air emissions generated from housing developments include emissions from:

- Area sources like painting, lawn and garden equipment and the use of consumer products like roof coatings and roof primers.
- The generation of electricity needed to support the homes in your development, and
- Car and truck activity associated with the homes in your new development.

These three air emissions components (i.e., area, electric power generation, and mobile sources) are quantified below, based on a per household/residential unit emission factor that was developed using 2002 Delaware data. These emissions in the table represent the actual impact the Stonington development may have.

**Emissions Attributable to Stonington Subdivision (Tons per Year)**

	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NOx)	Sulfur Dioxide (SO <sub>2</sub> )	Fine Particulate Matter (PM <sub>2.5</sub> )	Carbon Dioxide (CO <sub>2</sub> )
Direct Residential	22.9	2.5	2.1	2.7	93.0
Electrical Power Generation	ND*	9.1	31.6	ND*	4,663.9
Mobile	56.9	47.1	34.7	3.1	4,756.9
<b>Total</b>	79.8	58.7	68.4	5.8	9,513.8

(\*) *Indicates data is not available.*

Note that emissions associated with the actual construction of the subdivision, including automobile and truck traffic from working in, or delivering products to the site, as well as site preparation, earth moving activities, road paving and other miscellaneous air emissions, are not reflected in the table above.

**Air Quality Recommendations:**

The applicant shall comply with all applicable Delaware air quality regulations. These regulations include:

<b>Regulation 1106</b> - Particulate Emissions from Construction and Materials Handling	<ul style="list-style-type: none"> <li>• <b>Using dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads.</b></li> <li>• <b>Using covers on trucks that transport material to and from site to prevent visible emissions.</b></li> </ul>
<b>Regulation 1113</b> – Open Burning	<ul style="list-style-type: none"> <li>• <b>Prohibiting open burns statewide during the Ozone Season from May 1-Sept. 30 each year.</b></li> <li>• <b>Prohibiting the burning of land clearing debris.</b></li> <li>• <b>Prohibiting the burning of trash or building materials/debris.</b></li> </ul>
<b>Regulation 1145</b> – Excessive Idling of Heavy Duty Vehicles	<ul style="list-style-type: none"> <li>• <b>Restricting idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.</b></li> </ul>

Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:

- **Constructing only energy efficient homes.** Energy Star qualified homes are up to 30% more energy efficient than typical homes. 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. The Energy Star Program is excellent way to save on energy costs and reduce air pollution.
- **Offering 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.

- **Providing tie-ins to the nearest bike paths and links to any nearby mass transport system.** These measures can significantly reduce mobile source emissions.
- **Funding a lawnmower exchange program.** New lawn and garden equipment emits significantly less than equipment as little as 7 years old, and may significantly reduce emissions from this new development. The builder could fund such a program for the new occupants.

Additionally, the following measures will reduce emissions associated with the actual construction phase of the development:

- **Using retrofitted diesel engines during construction.** This includes equipment that are on-site as well as equipment used to transport materials to and from site.
- **Using pre-painted/pre-coated flooring, cabinets, fencing, etc.** These measures can significantly reduce the emission of VOCs from typical architectural coating operations.

**Hazardous waste sites.** Two (2) Site Investigation & Restoration Branch (SIRB) sites were found within a half mile radius of the proposed site: Coker's Landfill #3 (DE-0003) located 127 meters southwest, and Grigco Waste Oil & Recycling (DE-0124) bordering the east side of the proposed site.

Coker's Landfill was used by Dow Reichhold for the disposal of latex rubber sludge's. The landfill was given a No Further Action (NFA) designation in 12/1990. Grigco Waste Oil & Recycling was referred to the Division of Water Resources for a potential oil contamination of the surface water. The site was given a NFA designation in 1992.

Based on the previous agricultural use of the proposed project site, which may have involved the use of pesticides and herbicides, SIRB recommends that a Phase I Environmental Site Assessment be performed prior to development. In addition, should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour emergency number (800-662-8802). SIRB should also be contacted as soon as possible at 302-395-2600 for further instructions. *Krystal Stanley - (302) 395-2644, Krystal.Stanley@state.de.us*

**Tank management.** The Delaware Department of Natural Resources and Environmental Control-Tank Management Branch (TMB) appreciates the opportunity to comment on the proposed development. The parcel ID provided within the PLUS system could not be matched to a polygon with DNREC's GIS system; therefore, the project was based on the closest match, Parcel ID: LC03-046.02-03-01.00. There is one inactive LUST site located within a quarter mile of the proposed project.



Name: Jo Eve Farms Inc.

Facility ID: 1-000222

Project: K9301011

No environmental impact is expected from the above inactive LUST sites. However, should any underground storage tanks or petroleum contaminated soil be discovered by any person during construction, the DNREC-TMB at (302) 395-2500 and the DNREC Emergency Response Hotline at (800) 662-8802 must be notified within 24 hours.

Should any unanticipated contamination be encountered, PVC pipe materials would have to be replaced with ductile steel and nitrile rubber gaskets in the contaminated areas.

Also, please note that if any aboveground storage tanks (ASTs) less than 12,500 gallons are installed, they must be registered with the TMB. If any ASTs greater than 12,500 gallons are installed, they are also subject to installation approval by the TMB. *Tank Management Branch - Elizabeth Wolff - (302) 395-2500, Elizabeth.Wolff@state.de.us*

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

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

a. **Fire Protection Water Requirements:**

- Where proposed to serve a townhouse type dwelling site, the water distribution system shall capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers.
- Where a water distribution system is proposed for townhouse type dwelling sites, the infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Fire Protection Features:**

- For townhouse buildings and duplexes, provide a section / detail and the UL design number of the 2-hour fire rated separation wall on the Site plan

c. **Accessibility:** (see separate note below)

- 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.
- 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.

**NOTE:** The portion of Metamorphic Rock Drive that connects the front and rear sections of the site could constitute a “bottleneck” concern. That is, in the event of a disaster, whether man-made or natural, such as a traffic incident, a fallen tree, ice storm, sink hole, high water, etc, loss of the use of this roadway would isolate a major portion of the development from obtaining emergency services, including access to fire apparatus. It is recommended that, prior to proceeding with the development, the local fire chief should be contacted to explore what acceptable measures or options can be taken to reduce this potential scenario.

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

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

e. Required **Notes:**

- Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
- Proposed Use
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Name of Water Provider
- Letter from Water Provider approving the system layout
- The 2-hr separation wall details shall be shown on site plans for Duplexes and Townhouses
- Provide Road Names, even for County Roads

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

**Department of Agriculture - Contact: Scott Blaier 739-4811**

The Delaware Department of Agriculture has no objections to the proposed project. It is located within the Town of Cheswold, and the *Strategies for State Policies and Spending* encourages environmentally responsible development in Investment Level 2 areas.

The Delaware Department of Agriculture Forest Service encourages the developer to use the “Right Tree for the Right Place” for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource. 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.

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

Any expansion of natural gas or installation of a closed propane system must fall within Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

**Delaware Economic Development Office – Contact: Jeff Stone 672-6849**

No comments received.

**Delaware Division of Public Health- Health Promotion Bureau- Contact: Michelle Eichinger (302) 744-1011**

Ensuring that new residential and commercial development incorporates pedestrian- and bicycle-friendly features allows people to travel by foot or by bicycle and promotes physical activity as part of daily routines. Regular physical activity offers a number of health benefits, including maintenance of weight and prevention of heart disease, type 2 diabetes and other chronic diseases.<sup>1</sup> Research shows that incorporating physical activity into daily routines has the potential to be a more effective and sustainable public health strategy than structured exercise programs.<sup>2</sup> This is particularly important considering about 65% of adult Delawareans are either overweight or obese.<sup>3</sup> This current obesity crisis is also affecting children. Approximately 37% of Delaware's children are overweight or obese<sup>4</sup>, which places them at risk for a range of health consequences that include abnormal cholesterol, high blood pressure, type 2 diabetes, asthma, depression and anxiety.<sup>1</sup>

In Delaware, as in other states across the nation, certain patterns of land use can act as a barrier to physical activity and healthy eating for children and adults alike. Examples of such barriers include neighborhoods constructed without sidewalks or parks and shopping centers with full-service grocery stores situated too far from residential areas to allow for walking or biking between them.

This proposed development is in a Level 2 area. Developing in such an area is consistent with the *Strategies for State Policies and Spending*. DPH is committed to the *Strategies* and therefore, does support development in the proposed area.

DPH supports new development in and around existing towns and municipalities where compact and mixed land use patterns facilitate physical activity. As a way to promote physical activity and access to healthy foods, we recommend that the following amenities be included in the Stonington Mixed Use plan:

**Amenities to encourage active transportation**

- Ensure that there is safe connectivity, via crosswalks and sidewalks, within the development.
- Ensure that there are sidewalks, crosswalks and walking/bicycling paths connecting the neighboring residential developments.
- Designate bike paths to supplement the sidewalks already proposed in the plan so that residents can travel by foot or by bicycle. In addition, install bike racks in convenient locations within the development.

A survey by the Surface Transportation Policy Project found that 55% of Americans want to walk more on a daily basis to get exercise or to travel to specific destinations, and 63% want to walk more to stores and other locations.<sup>5</sup>

### **Amenities to encourage recreation**

- Incorporate amenities to encourage active recreation in areas designated for open space. These may include, but not limited to, a playground, a basketball court, a tennis court, etc. If feasible, consider including a walking path around any proposed amenities.

### **Increase opportunities for healthy eating**

- Designate an area for a community garden. Community gardens not only provide residents access to healthy nutrition, but they also provide opportunities for physical activity and community cohesiveness.<sup>6</sup>

<sup>1</sup> Nemours Health and Prevention Services (2005). *Delaware Children's Health Chartbook*, Newark, DE.

<sup>2</sup> Active Living by Design. *Transportation Fact Sheet*. Retrieved May 17, 2007, from [http://www.activelivingbydesign.org/fileadmin/template/documents/factsheets/Transportation\\_Factsheet.pdf](http://www.activelivingbydesign.org/fileadmin/template/documents/factsheets/Transportation_Factsheet.pdf).

<sup>3</sup> Delaware Health and Social Services (2008), *Division of Public Health, Behavioral Risk Factor Surveillance System (BRFSS), 1990-2007*.

<sup>4</sup> Nemours Health and Prevention Services (2007). *2006 Delaware Survey of Children's Health Descriptive Statistics Summary, Volume 1*.

<sup>5</sup> Surface Transportation Policy Project (2003). *Americans' Attitudes Toward Walking and Creating Better Walking Communities*. Retrieved February 12, 2008, from [http://www.transact.org/library/reports\\_pdfs/pedpoll.pdf](http://www.transact.org/library/reports_pdfs/pedpoll.pdf)

<sup>6</sup> Hancock, T. (2001). People, partnerships and human progress: building community capital. *Health Promotion International*, 16(3), 275-80.

### **Delaware State Housing Authority – Contact Vicky Powers or Valerie Miller 739-4263**

This proposal is for a rezoning of 143 acres and a site plan review of 741 residential units located south of Lynnbury Woods, approximately 1,000 feet west of the intersection with Messina Hill Road, within the town limits of Cheswold. According to the *State Strategies Map*, the proposal is located in an Investment Level 2 area. DSHA supports this proposal because residents will have proximity to existing services, markets, and employment opportunities. Furthermore, the proposal targets units for first-time homebuyers and move-up buyers. For informational purposes, the most recent real estate data collected by DSHA shows the median home price in Kent County to be \$219,000. However, households earning respectively 100% of Kent County's median income only qualify for mortgages of \$213,634, thus creating an affordability gap of \$5,366.00. The provision of units within reach of households earning at least 100% of Kent County's median income would help increase their housing opportunities.

DSHA recommends the consideration of alleys for the townhome section of the development. Alleys can also hide unsightly utilities and vehicles. The sheer voluminous nature of having that many vehicles on the streets without garages or alleys can visually be unattractive and within time lead to neighborhood decline.

Due to the high concentration of townhomes in the back section of the neighborhood, there may be some concern with overall quality of life for the residents. The high level of intensity and compaction can be detrimental to the appeal of the neighborhood. Good design leads to the longevity of a neighborhood. Although there are no standards or formulas to determine when an area has too much affordable housing, the consequences of such areas are well documented. Therefore, it is recommended that the development avoid undue concentrations of townhomes as much as possible. The concern arises over the high concentration of townhomes in a small area, not the townhomes themselves. DSHA supports affordable housing units such as townhomes, but is cautious when at such a high intensity. Mixing the townhomes throughout the development is recommended, although DSHA is aware that construction on the project has already started.

**Department of Education – Contact: John Marinucci 735-4055**


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

1. Using the DOE standard formula, this development will generate an estimated 371 students.
2. DOE records indicate that the Capital School Districts' *elementary schools are very close to 100% of current capacity* based on September 30, 2008 elementary enrollment.
3. DOE records indicate that the Capital School Districts' *secondary schools are very close to 100% of current capacity* based on September 30, 2008 secondary enrollment.
4. This development will create additional elementary and secondary student population growth which the school district will need to address.
5. The developer is strongly encouraged to contact the Capital School District Administration to address the additional students that this development will likely generate.
6. DOE requests developer work with the Capital School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the that school district.

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

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

Sincerely,

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

Constance C. Holland, AICP  
Director

CC: Town of Cheswold