



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF MANAGEMENT AND BUDGET
STATE PLANNING COORDINATION

June 11, 2007

Mr. Zachary Crouch
Davis, Bowen & Friedel
23 N. Walnut Street
Milford, DE 19933

RE: PLUS review – PLUS 2007-05-06; Saratoga

Dear Mr. Crouch:

Thank you for meeting with State agency planners on May 23, 2007 to discuss the proposed plans for the Saratoga project to be located at the intersection of Lynnbury Woods Road and State Road 92.

According to the information received, you are seeking subdivision plan approval in the Town of Cheswold for 968 residential units on 351 acres. This project was previously reviewed as PLUS 2006-05-10 in May of 2006, and is being reviewed again due to changes in the proposed subdivision plan.

Please note that additional 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 Kent County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.

Executive Summary

The following section includes some site specific highlights from the agency comments found in this letter. This summary is provided for your convenience and reference. The

full text of this letter represents the official state response to this project. ***Our office notes that the applicants are responsible for reading and responding to this letter and all comments contained within it in their entirety.***

State Strategies/Project Location

- This project is located in primarily in Investment Level 2 according to the *State Strategies for Policies and Spending*. This site is also located in the Kent County Growth Zone and 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 County codes and ordinances.
- There are portions of this site that are located in Investment Level 3. These areas correspond to environmentally sensitive areas of the site that contain forests and wetlands. We encourage the developer to develop this portion of the site in an environmentally sensitive manner. Please see the DNREC comments below for some detailed recommendations regarding this portion of the site.

Street Design and Transportation

- DelDOT has developed language for deed restrictions pertaining to the operation of the airport that they request the developers place on the subject property.
- The developer has completed a traffic impact study (TIS) for this project. DelDOT received it on December 30, 2005, and sent their comments on the study to the Town on June 9, 2006. A copy is enclosed. While the number of dwellings now proposed is significantly less than what the TIS evaluated, most of the recommendations in that letter remain valid as written. Three warrant further comment:
 - a) Item 3 specifies the extent to which the northbound left turn lane needs to be lengthened on Route 13 at the south Messina Hill Road intersection. We may be able to reduce that length somewhat based on the reduction in site traffic.
 - b) Item 7 recommends the installation of an eastbound right turn lane on Lynnbury Woods Road at Messina Hill Road. Given the expected difficulty of making that improvement, because of the cemetery on the corner, the developer may want to have their engineer re-analyze this

intersection with the reduced site traffic. However, DelDOT anticipates that the right turn lane will still be needed.

- c) Item 10 recommends participation in the construction of a then proposed left-turn lane on Brenford Road (Kent Road 42) at Delaware Route 42. That construction is now complete, but in fairness to the developer who did the work we will still require that this developer participate in that cost.

The remaining recommendations remain valid as written.

- Lynnbury Woods Road is classified as a collector road and Moorton Road, south of Lynnbury Woods Road, is classified as a local road. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads and 40 feet from the centerline on collector roads. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- As proposed, the development is clearly divided into two segments, apparently separating the age-restricted dwellings from the non-age-restricted dwellings. DelDOT strongly recommends that at least one street connection be provided to connect the two developments. In addition to allowing neighbors to visit each other more readily, such connections allow for improved emergency access and greater efficiency in street sweeping, snow plowing, trash collection and routine police patrols. DelDOT recognizes that the streets are proposed for private maintenance initially and that the Town may not provide any of these services now, but we would expect that to change as the town grows and residents come to want the services normally associated with living in a town.
- As proposed, the plan is characterized by long sections of straight streets. To avoid creating speeding problems, and accidents at the many driveways, it is recommended that the developer either modify the plan to add some curves or, perhaps, include more traffic calming measures such as bulb-outs or additional miniature roundabouts in the site design.
- Bicycle and pedestrian facilities will be required along the site frontage on Moorton Road and Lynnbury Woods Road.

Natural and Cultural Resources

- The Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from the landward edge of all wetlands and water bodies.
- The Drainage Program is aware of existing drainage concerns in the area of this project. 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 on site storm water.
- There should be at least a 100-foot buffer between lots/infrastructure and wetlands. Although not currently State regulation, this request for 100-foot buffers is based on peer reviewed scientific research and is made to protect water quality which is important for the early stages of some aquatic species and those sensitive to water quality changes, and because upland buffers around wetland areas serve as habitat for wetland dependent species.
- The Drainage Program requests a 15-foot side yard setback on lots where storm drains and catch basins are on private property to ensure adequate room for future maintenance of the storm drain system. The side yard setback would only increase on the side with the storm drain.
- Some areas of the site plan contain inadequate wetland buffers. At least 3 stormwater management ponds, a community pool area, approximately lots 117-140, 392-394, 463-468, Roads BB, CC, GG, FF and M appear to be within 100 feet of wetlands and should be pulled out of this important buffer zone. There should be at least a 100-foot buffer between lots/infrastructure and wetlands.

According to our GIS database, there is an isolated wetland known as a Coastal Plain Pond or Delmarva Bay adjacent to lot #'s 463-464. This unique wetland provides breeding habitat for a variety of animals, including amphibians and invertebrates, and often supports a unique and rare assemblage of plants. Upland forest buffers around these ponds are also critical, protecting the wetland from excess nutrients and invasion by non-native species. This buffer also provides critical habitat for salamanders during most of their annual life cycle.

To allow for greater forest and wetland preservation, DNREC recommends the following site plan changes:

1. DNREC encourages the applicant to consider preservation of all or at least part of the forested area that is going to be cleared by the current site plan. This would entail omitting some lots and infrastructure that are within the forested area. Many incentive-based programs for wildlife management are available to private landowners through our agency. Please contact Shelley Tovell at (302) 653-2880 if the landowner(s) is interested in more information.
2. To protect the existing coastal plain pond, Lot #s 463-468 should be removed as well as the associated cul-de-sac so that an adequate wetland buffer of at least 300 feet is left intact around the perimeter of the pond. This buffer width is recommended because of the sensitive nature of the wetland, potential for rare species, as well as providing adequate upland breeding areas (for species such as salamanders).
3. Stormwater management ponds that are within or too close to wetlands, and that require tree clearing, should be removed from these sensitive areas. Alternative placement of the ponds or alternative methods of stormwater containment should be explored. The applicant should also explore alternatives to using the existing wetlands as the intended outlet for stormwater run-off. This water can contain anything homeowners spill on their driveways (oil, antifreeze, etc.) or use on their lawns (pesticides, herbicides, fertilizer, etc.) and should either be diverted away from sensitive wetlands or highly filtered prior to being outlet.
4. If a large percentage of forest loss is still going to occur despite recommendations to the contrary, then we recommend that trees not be cleared from April 1st to July 31st to minimize impacts to birds and other wildlife that utilize forests for breeding. This recommendation would only protect those species for one breeding season; once trees are cleared the result is an overall loss of habitat.

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

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

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

If this development goes forward, the Division of Historical and Cultural Affairs would like the opportunity to examine this property/area for archaeological sites, and take photographs prior to any demolition or ground disturbing activities because there is a possibility that there could be prehistoric or historic archaeological sites on this parcel/property. In addition, there is a 19th century farm house/agricultural complex, approximately built during the year of 1876. In addition there are quite a few historic and archaeological sites on/within this parcel (property).

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) DelDOT appreciates the developer's willingness to work with them with regard to Delaware Airpark. The site layout seems acceptable in this regard. They have developed language for deed restrictions pertaining to the operation of the airport that we request the developers place on the subject property. A copy is enclosed with their comments on the traffic impact study (See item 2 below.).
- 2) The developer has completed a traffic impact study (TIS) for this project. DelDOT received it on December 30, 2005, and sent their comments on the study to the Town on June 9, 2006. A copy is enclosed. While the number of dwellings now proposed is significantly less than what the TIS evaluated, most of the recommendations in that letter remain valid as written. Three warrant further comment:
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- 4) As proposed, the development is clearly divided into two segments, apparently separating the age-restricted dwellings from the non-age-restricted dwellings. DelDOT strongly recommends that at least one street connection be provided to connect the two developments. In addition to allowing neighbors to visit each other more readily, such connections allow for improved emergency access and greater efficiency in street sweeping, snow plowing, trash collection and routine police patrols. They recognize that the streets are proposed for private maintenance initially and that the Town may not provide any of these services now, but we would expect that to change as the town grows and residents come to want the services normally associated with living in a town.
- 5) As proposed, the plan is characterized by long sections of straight streets. To avoid creating speeding problems, and accidents at the many driveways, it is recommended that the developer either modify the plan to add some curves or, perhaps, include more traffic calming measures such as bulb-outs or additional miniature roundabouts in the site design.
- 6) Bicycle and pedestrian facilities will be required along the site frontage on Moorton Road and Lynnbury Woods Road. The project manager for Kent County, Mr. Brad Herb, will determine the specific type of improvements, e.g. sidewalks or a multi-use path, as part of the entrance plan review. He may be reached at (302) 266-9600.
- 7) The developer's site engineer should contact Mr. Herb regarding specific requirements for access.

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

Soils

According to the Kent County soil survey update, Hambrook, Woodstown, Fallsington, Corsica, and Zekiah were mapped in the immediate vicinity of the proposed construction. Hambrook is a well-drained upland soil that, generally, has few limitations for development. Woodstown is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Fallsington, Corsica, and Zekiah (floodplain soil) are poorly to very poorly-drained wetland associated hydric soils that have severe limitations for development. Approximately 20-25% of the mapped soils on the combined parcel land contain Fallsington, Corsica, and/or Zekiah soil mapping units; these soils are considered unsuitable for development and should be avoided.

As noted previously, a significant portion of the land area of subject parcel (estimated 20-25%) contains wetland associated hydric soils. Hydric soils typically have a seasonal high water table at or near the soil surface (within one-foot of soil surface or less). Building in such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding, especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or “nor’easters.” This is in addition to increased flooding probabilities from surface water runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks). Therefore it is strongly recommended that the applicant avoid development in poorly and/or very poorly-drained soil mapping units such as Fallsington, Corsica, and Zekiah.

Wetlands

According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine wetlands were mapped over much of the western and central portions of the combined parcel land area. Some of these wetlands are of critical concern because of their adjacency to an unnamed headwater tributary bisecting the western portion (i.e., along a north/south axis) of the combined parcel land area.

The applicant should be reminded that they must avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are 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) manual is the basis for making a jurisdictional

wetland determination for nontidal wetlands in Delaware. 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 making such delineations. To ensure compliance with 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, the USACE must be contacted to evaluate and assess the jurisdictional validity of such a delineation as the final jurisdictional authority for making isolated wetlands determinations ultimately rests with the USACE. The USACE can be reached by phone at 736-9763.

Based on a review of existing buffer research, an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100-foot 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 the landward edge of all wetlands and water bodies.

The stream crossing may require permits from the State of Delaware and the US Army Corps of Engineers. In addition a State Water Quality Certification may be required. A meeting with the Joint Permit Processing Committee is recommended. Contact the Wetlands and Subaqueous Lands Section at (302) 739-9943 for more information.

Covenants and restrictions to protect the wetlands areas from encroachment due to sheds, structures, fences and dumping of waste materials are recommended.

Impervious Cover

Based on information provided by the applicant in the PLUS application, post-development surface imperviousness for this project was estimated by the applicant to reach 15 percent. However, given the scope and density of this project this projection may be an underestimate.

The applicant should realize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks, stormwater management structures, and roads) should be included in the calculation for surface imperviousness; it was unclear from the submittal whether constructed surface imperviousness was comprehensively considered. Nonetheless, it is strongly recommended that the applicant include all of aforementioned forms of surface

imperviousness in their finalized calculation for surface imperviousness. This will ensure a realistic assessment of this project's likely post-construction environmental impacts.

Since studies link increases in impervious cover to decreases in water quality, the applicant is strongly encouraged to pursue best management practices (BMPs) that can mitigate or reduce some of the 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 reduce surface imperviousness.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Leipsic watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shellfish 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 watershed, a post-development TMDL reduction level of 40% will be required for nitrogen and phosphorus. Additionally, a TMDL reduction level of 75% will be required for bacteria.

TMDL Compliance through the Pollution Control Strategy (PCS)

As stated above, Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Leipsic watershed. The TMDL calls for a 40% reduction in nitrogen and phosphorus, while a TMDL of 75% will be required for bacteria; both nutrient and bacterial reductions must be from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients and bacteria to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, increasing passive wooded open space, and the use of stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Supply

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.

Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. 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 Kent Conservation District. Contact Jared Adkins, Program Manager, at (302) 741-2600, ext. 3, for details regarding submittal requirements and fees.

Drainage

The Drainage Program is aware of existing drainage concerns in the area of this project. 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 on site 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.

The Drainage Program does not have a clear understanding how stormwater will be directed to the stormwater management areas. Concerning future maintenance of drainage conveyances, the Drainage Program requests the majority of the stormwater pipes on this project be located on drainage easements along the streets.

The Drainage Program requests a 15-foot side yard setback on lots where storm drains and catch basins are on private property to ensure adequate room for future maintenance of the storm drain system. The side yard setback would only increase on the side with the storm drain.

For questions or clarifications, please contact Jim Sullivan at 739-9921.

Site Visit Request

DNREC has not surveyed the project area. In order to provide more informed comments and to make recommendations, the program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and unique habitats and to ensure that the project is environmentally sensitive. In addition, a survey of the project site will give staff an opportunity to document the biodiversity of the property and add to the State database. The site visit would be at no cost to the applicant/landowner. DNREC scientists have many years of experience using rare species survey methods. Please contact Bill McAvoy, Robert Coxe or Kitt Heckscher at (302) 653-2880 to set up a site visit.

Forest Preservation

This project will result in forest fragmentation and an estimated loss of at least 69 acres of forest, much of which are forested wetlands. Many species, often rare species, depend on larger connected areas of forest. Forest fragmentation separates wildlife populations, increases road mortality, and increases “edge effects” that leave many forest dwelling species, particularly songbirds, vulnerable to predation. A lack of forest protection has contributed to an estimated 20,000 acres of forest converted by development just in the last decade in Delaware (Dept. of Agriculture, Forestry Service). This cumulative forest

loss 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). Forest loss throughout the state is of utmost concern to our Division (which is charged with conserving and managing the states wildlife; see www.fw.delaware.gov and the Delaware Code, Title 7). Because of an overall lack of forest protection, the State has to rely on applicants and/or the entity that approves the project (i.e. counties and municipalities) to consider implementing recommendations that will aide in reducing forest loss.

Wetland Habitat Impacts

Some areas of the site plan contain inadequate wetland buffers. At least 3 stormwater management ponds, a community pool area, approximately lots 117-140, 392-394, 463-468, Roads BB, CC, GG, FF and M appear to be within 100 feet of wetlands and should be pulled out of this important buffer zone. There should be at least a 100-foot buffer between lots/infrastructure and wetlands. Although not currently State regulation, this request for 100-foot buffers is based on peer reviewed scientific research and is made to protect water quality which is important for the early stages of some aquatic species and those sensitive to water quality changes, and because upland buffers around wetland areas serve as habitat for wetland dependent species.

According to our GIS database, there is an isolated wetland known as a Coastal Plain Pond or Delmarva Bay adjacent to lot #'s 463-464. This unique wetland provides breeding habitat for a variety of animals, including amphibians and invertebrates, and often supports a unique and rare assemblage of plants. Upland forest buffers around these ponds are also critical, protecting the wetland from excess nutrients and invasion by non-native species. This buffer also provides critical habitat for salamanders during most of their annual life cycle. Several studies have shown that salamanders spend most of their lives in forest buffer zones up to 300 meters from wetland edges, using wetlands only during brief breeding periods

Recommendations

To allow for greater forest and wetland preservation, DNREC recommends the following site plan changes:

1. DNREC encourages the applicant to consider preservation of all or at least part of the forested area that is going to be cleared by the current site plan. This would entail omitting some lots and infrastructure that are within the forested area. Many incentive-based programs for wildlife management are available to private landowners through our agency.

Please contact Shelley Tovell at (302) 653-2880 if the landowner(s) is interested in more information.

2. To protect the existing coastal plain pond, Lot #s 463-468 should be removed as well as the associated cul-de-sac so that an adequate wetland buffer of at least 300 feet is left intact around the perimeter of the pond. This buffer width is recommended because of the sensitive nature of the wetland, potential for rare species, as well as providing adequate upland breeding areas (for species such as salamanders).
3. Stormwater management ponds that are within or too close to wetlands, and that require tree clearing, should be removed from these sensitive areas. Alternative placement of the ponds or alternative methods of stormwater containment should be explored. The applicant should also explore alternatives to using the existing wetlands as the intended outlet for stormwater run-off. This water can contain anything homeowners spill on their driveways (oil, antifreeze, etc.) or use on their lawns (pesticides, herbicides, fertilizer, etc.) and should either be diverted away from sensitive wetlands or highly filtered prior to being outlet.
4. If a large percentage of forest loss is still going to occur despite recommendations to the contrary, then we recommend that trees not be cleared from April 1st to July 31st to minimize impacts to birds and other wildlife that utilize forests for breeding. This recommendation would only protect those species for one breeding season; once trees are cleared the result is an overall loss of habitat.

Plant Rescue

Because there is forest and wetland loss associated with this project, we recommend that the developer/landowner contact the Delaware Native Plant Society to initiate a plant rescue. Selected plants from the site of disturbance will be collected by Society members and transplanted to the Society's nursery. Plants will then be used in restoration projects and/or sold at the Society's annual native plant sale. This can be done at no expense or liability to the developer/landowner. Please contact Lynn Redding at (302) 736-7726 or lynn_redding@ml.com

Potential Hunting Issue

Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited

and the applicant should contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not a buffer between lot lines and the adjacent property line. There is also noise associated with hunting, such as the discharge of firearms or dogs barking when pursuing game.

Nuisance Waterfowl

Stormwater management ponds that remain in the site plan may attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (at least 50 feet) around ponds, are not as attractive to geese because they do not feel safe from predators and other disturbance when their view of the area is blocked. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Solid Waste

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

Underground Storage Tanks

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

Jo-Eve Farms, Facility # 1-000222, Project # K9301011

DelDOT Cheswold, Facility # 1-000305, Project # K9907148

Delaware Airpark, Facility # 1-000280, Project # K0107054

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

Site Investigation and Restoration

3 SIRB sites were found within a half-mile radius of the proposed site:

Coker Landfills 1 and 2 sites are both National Priority List (NPL) sites under the EPA superfund program. They are located north and west of the proposed site respectively. They were both landfills used for disposing latex materials. No further action was recommended by DNREC after a 1996 investigation of both sites. The EPA is working to delete them from the list. DNREC foresees no negative impact due to these sites.

Coker Landfill 3 (DE-003) is located within the proposed site. It was used as a dump site for latex materials. A SI was conducted in 1980. The result of the SI indicated further investigation was not necessary. DNREC foresees no negative impact due to this site.

DNREC recommends that public water should be utilized at the proposed site. If necessary, a limited assessment of groundwater at the proposed site should be conducted.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 74.3 tons (148,577.9 pounds) per year of VOC (volatile organic compounds), 61.5 tons (123,012.4 pounds) per year of NO_x (nitrogen oxides), 45.4 tons (90,760.8 pounds) per year of SO₂ (sulfur dioxide), 4.0 ton (8,079.3 pounds) per year of fine particulates and 6,214.2 tons (12,428,351.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 30.0 tons (59,928.2 pounds) per year of VOC (volatile organic compounds), 3.3 ton (6,593.9 pounds) per year of NO_x (nitrogen oxides), 2.7 ton (5,472.0 pounds) per year of SO₂ (sulfur dioxide), 3.5 ton (7,061.4 pounds) per year of fine particulates and 121.5 tons (242,935.6 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 11.9 tons (23,751.2 pounds) per year of NO_x (nitrogen oxides), 41.3 tons (82,613.0

pounds) per year of SO₂ (sulfur dioxide) and 6,092.7 tons (12,185,416.3 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	74.3	61.5	45.4	4.0	6214.2
Residential	30.0	3.3	2.7	3.5	121.5
Electrical Power		11.9	41.3		6092.7
TOTAL	104.3	76.7	89.4	7.5	12428.4

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 11.9 tons of nitrogen oxides per year and 41.3 tons of sulfur dioxide per year.

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

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

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

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

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

State Fire Marshal's Office – Contact: John Rudd 739-4394

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

a. **Fire Protection Water Requirements:**

- Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with maximum 800 feet spacing on centers (400 feet maximum distance to a hydrant) for the townhouse section of the subdivision. Fire hydrants with maximum 1000 feet spacing on centers (500 feet maximum distance to a hydrant) for the single family dwelling section of the subdivision.
- Where a water distribution system is proposed for dwelling sites, the infrastructure for fire protection water shall be provided, including the size of water mains.

b. **Fire Protection Features:**

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

c. **Accessibility:**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access roads to the subdivision from State Road entrance and the two entrances from the Lynnbury Woods Road must be constructed so fire department apparatus may negotiate it. Additionally, circles located in the subdivision streets are not to create any impediment to fire apparatus travel.
- 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, 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.

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
- Townhouse 2-hr separation wall details shall be shown on site plans
- Provide Road Names, even for County Roads

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

Department of Agriculture - Contact: Scott Blaier 698-4500

The Delaware Department of Agriculture has no objections to the proposed project. The project is located within the Town of Cheswold, and the *Strategies for State Policies and Spending* encourages environmentally responsible development in Investment Level 2 and 3 areas.

Public Service Commission - Contact: Andrea Maucher 739-4247

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

Delaware State Housing Authority – Contact Vicki Walsh 739-4263

This proposal is for a rezoning of 351 acres from AC to R3 for a residential planned community of 986 homes, located at the intersection of Lynnbury Woods Road and Moorton Road near Cheswold. According to the State Strategies Map, the proposal is located in Investment Level 2 and 3 areas. As a general planning practice, DSHA encourages residential development in these areas where residents will have proximity to services, markets, and employment opportunities. Furthermore, we support the fact that this proposal targets the full range of incomes including first time homebuyers. According to the most recent real estate data collected by DSHA, the average home price in Kent County is \$229,000. However, families earning respectively 100% of Kent County's median income only qualify for mortgages of \$180,115, thus creating an affordability gap of \$48,885. The provision of units within reach of families earning at least 100% of Kent County's median income will ensure housing that is affordable to first time homebuyers.

Department of Education – Contact: John Marinucci 735-4055

This project appears as though it will span two school districts – the Smyrna School District and the Capital School District. The southern most area of the proposed development appears to cross the Capital School District boundary line. DOE offers the following comments on behalf of the Smyrna School District, as well as the Capital School District.

1. Using the DOE standard formula, this development will generate an estimated 238 students excluding the active adult age restricted section.
2. In a letter dated March 20, 2006, to the Kent County Levy Court President, the Superintendent of the **Smyrna School District** officially informed the Kent County Levy Court that it does not have capacity to accommodate students resulting from any continued development.
3. DOE records indicate that the **Capital School Districts' elementary schools are at or beyond 100% of current capacity** based on September 30, 2006 elementary enrollment.
4. DOE records indicate that the **Capital School Districts' secondary schools are at or beyond 100% of current capacity** based on September 30, 2006 secondary enrollment.
5. The developer is strongly encouraged to contact both the Smyrna School District and Capital School District Administration to discuss the issue of school overcrowding that this development will exacerbate and potential resolutions.

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

Constance C. Holland, AICP
Director

CC: Town of Cheswold