



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

March 15, 2006

Tom Ford
LANDDESIGN, Inc.
Oak Square, Ste. 3, Central Avenue
Ocean View, De 19970

RE: PLUS review – PLUS 2006-02-04; Senators Subdivision

Dear Mr. Ford:

Thank you for meeting with State agency planners on February 22, 2006 to discuss the proposed plans for the Senators Subdivision project to be located on the south side of Gills Neck Road, immediately southwest of the Hawkseye Subdivision.

According to the information received, you are seeking site plan approval, under the County's cluster development option, for 242 units on 119.14 acres located in a Level 3 area.

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 Sussex 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 is located in an Investment Level 3 area according to the *Strategies for State Policies and Spending*, with a small area of Investment Level 4 along the wetland boundary. It is also located in the Environmentally Sensitive Developing Area according to the Sussex County Comprehensive Plan. In these areas, State policies encourage long term phased growth that is sensitive to the natural resources on and surrounding the site.
- We understand that this is part of a larger development plan. In general, there is benefit to reviewing the larger development plan for the site, rather than reviewing the components in a piece-meal fashion. In the future, we would encourage this approach.
- Based on the information presented at the PLUS meeting, a portion of the site is within the 100-year flood plain. Specifically, it appears that lots 28-47 are within the 100-year flood plain. The State discourages development in the 100-year flood plain and recommends that these lots be moved or eliminated.
- The Delaware State Housing Authority supports this proposal because residents will have proximity to existing services, markets, and employment opportunities available in nearby Lewes and Rehoboth. Furthermore, this proposal target units for first-time homebuyers, in an area where development pressures continue to drive housing prices out of reach of most homebuyers.

Street Design and Transportation

- The developer has been working with the Department for the past year regarding improvements to Gills Neck Road, the Junction and Breakwater Trail, and connection of that trail to a multi-use path along Gills Neck Road. The plan presented is consistent with the discussions thus far and the comprehensive planning effort that includes connections between Senators, Hawkseye and the remainder of the property.

Natural and Cultural Resources

- DHCA understands that the owner/developer contracted with an archaeological firm to test the area, and has set off an area to protect the Townsend Site. They

need a copy of the archaeologists' report to see what boundaries and kinds of features were found so that they can determine if the area being preserved is in fact large enough. They also have questions regarding your findings and the sites as noted below. The Developer should contact the Division of Historical and Cultural Affairs (DHCA) to discuss this matter further.

- According to information received at the PLUS meeting, the developer plans and average 160-foot buffer from the 404 wetlands. DNREC acknowledges and appreciates the 160-foot (average) buffer.
- If other areas were not tested archaeologically, the DHCA would appreciate the opportunity to see if other sites exist within the parcel and to learn something about their nature and extent prior to any ground-disturbing activities.
- Based on a preliminary evaluation of this project using this model (using the applicant's assumptions in the PLUS application), the development as currently conceived **does not** meet the Inland Bays watershed TMDL nutrient reduction requirements for nitrogen and phosphorus. DNREC suggests that the applicant verify their project's compliance with the specified TMDL loading rates by running the model themselves (using the corrected impervious cover figure). Please contact Lyle Jones of Watershed Section at 739-9939 for the acceptable model protocol.
- The DNREC Water Supply Section has determined that the parcel falls wholly within an excellent ground-water recharge area (see attached map). Excellent Ground-Water Recharge Areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. As such, these soils are able to transmit water very quickly from the land surface to the water table. Consequently, ground water in these areas may very readily be adversely affected by land use activities or impervious cover. The DNREC Water Supply Section recommends that the portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover.
- Portions of the property are within the 100-year floodplain. It is recommended that construction be limited to those areas outside of the 100-year floodplain and on land above the base flood elevation for this site. According to the site plan, lots 28-43 are within the 100-year floodplain. The developer should consider moving these lots to a different location within the site or removing the completely.

- Impacts to the forested area should be avoided. PLUS materials indicate that 1.30 acres will be removed. Although small, this area is important to the contiguous stretch of forests from Cape Henlopen Natural Area and help buffer Pot Hook Creek. All efforts should be made to eliminate the removal of trees.
- On December 19, 2005 DNREC provided comments to Land Design, Inc. (Michael Loveland), which is listed as the project designer/engineer for this project. It is recommended that the forested riparian buffer be left intact and that lot lines and infrastructure not be located within this buffer zone. However, the site plan does not reflect this recommendation as there are stormwater management ponds and lots within the riparian buffer and there is not a 100-foot buffer between wetlands and lots/infrastructure. In order to protect rare species, unique communities, and water quality, the forested riparian buffer along Pot Hook Creek and Bookhammers Pond should be left intact (at least 100 feet in width, preferably 300 feet). Lot lines and infrastructure currently within this buffer zone should be either eliminated from the site plan or relocated. This includes lots 29-38, 45, 46, 47 and two stormwater management ponds. The buffer should also be placed in permanent conservation in order to prevent future clearing.
- The Office of Nature Preserves strongly urges the applicant to remove or relocate the lots currently located in the Natural Area: specifically, lots 29 through 38, 45, 46, and 47.

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

Office of State Planning Coordination – Contact: Dorothy Morris 739-3090

This is located in an Investment Level 3 area according to the *Strategies for State Policies and Spending*, with a small area of Investment Level 4 along the wetland boundary. It is also located in the Environmentally Sensitive Developing Area according to the Sussex County Comprehensive Plan. In these areas, State policies encourage long term phased growth that is sensitive to the natural resources on and surrounding the site.

We understand that this is part of a larger development plan. In general, there is benefit to reviewing the larger development plan for the site, rather than reviewing the components in a piece-meal fashion. In the future, we would encourage this approach.

Based on the information presented at the PLUS meeting, a portion of the site is within the 100-year flood plain. Specifically, it appears that lots 28-43 are within the 100-year

flood plain. The State discourages development in the 100-year flood plain and we recommend that these lots be moved or eliminated.

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

This parcel includes the Townsend Site (S-262), a prehistoric archaeological site listed in the National Register of Historic Places. The Townsend Site was partially excavated in the 1940s by archaeologists associated with the Smithsonian Institution. Their finds included an ossuary, that is, a large pit with human remains. There are likely to be similar features in the area. Beers Atlas of 1868 shows the location of the J. P. Marshall House within the parcel as well.

DHCA understands that the owner/developer contracted with an archaeological firm to test the area, and has set off an area to protect the Townsend Site. They need a copy of the archaeologists' report to see what boundaries and kinds of features were found so that they can determine if the area being preserved is in fact large enough. The DHCA needs to know what mechanism the owner/developer is using to insure that the site is protected from further disturbance and to receive a copy of any easement or covenant. Will there be an easement or covenant placed on the deed for this area, and who will be the holder of this instrument? Will the area be fenced? What kind of vegetation or landscaping is planned for this area? Who will be responsible for maintaining and protecting the area in the future? Was there any indication of other human burials associated with this site?

The DHCA also needs to know if other areas were tested for the presence of archaeological sites. There are areas of high potential for other prehistoric-period occupations, as well as the possible site of the Marshall House and outbuildings. Was sufficient testing carried out to be sure that there is no unmarked historic-period cemetery associated with the Marshall House within this parcel? Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Marshall House, usually a good distance behind or to the side of the house. The developer seems to be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. This law covers historic-period as well as prehistoric-period burials. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out. The DHCA will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

If other areas were not tested archaeologically, they would appreciate the opportunity to see if other sites exist within the parcel and to learn something about their nature and extent prior to any ground-disturbing activities.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) The developer has been working with the Department for the past year regarding improvements to Gills Neck Road, the Junction and Breakwater Trail, and connection of that trail to a multi-use path along Gills Neck Road. The plan presented is consistent with the discussions thus far and the comprehensive planning effort that includes connections between Senators, Hawkseye and the remainder of the property.
- 2) The developer's site engineer should maintain coordination with Mr. John Fiori, the DelDOT Subdivision Manager for Sussex County, regarding their specific requirements for streets and access. He may be reached at (302) 760-2260.

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

Green Infrastructure

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

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

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

Soils

Based on the Sussex County soil survey update Greenwich, Downer, Hammonton, Manahawkin, Hurlock, & Transquaking-Mispillion complex were mapped on subject parcel.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine wetlands on this parcel. These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife.

The Department acknowledges and appreciates the 160-foot (average) buffer from the 404 wetlands.

This project is located directly adjacent to sensitive headwater wetlands associated with the Lewes-Rehoboth Canal and the greater Inland Bays watershed, greatly increasing the probability of harmful impacts to surface and groundwater quality to all waters within the Inland Bays watershed and making it more difficult for the State to achieve future required TMDL nutrient reductions. It should also be noted that harmful impacts to water quality result in the deterioration in the ecological function of a stream along its entire length, including the floodplain system further downstream.

It is also recommended that the Farm Services Agency of the USDA be contacted to assess whether the farmed wetlands on subject parcel meet the recognized criteria for classification as “prior converted wetlands.” Prior converted wetlands are farmed wetlands that have drained or altered before December 23, 1985, and no longer meet the wetland criteria established under the 404 program. Such wetlands are considered exempt from regulatory protection provided that there is no proof of a continuous “fallow period” of five years or greater in that parcel’s cropping history. Parcels converted after said date regardless of cropping history are considered jurisdictional by the Army Corps of Engineers (ACOE). The contact person for assessing a parcel’s cropping history is Sally Griffin at the USDA – she can be reached at 678-4182.

Wetland Regulations

PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on

their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763.

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

To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Impervious Cover

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. Based on analyses of 2002 aerial photography by the University of Delaware, the Inland Bays watershed (Lewes-Rehoboth Canal), at that time, had about 15.6 percent impervious cover. Since each additional percentage increase in surface imperviousness results in a proportionate decrease in a given watershed's habitat and water quality, validates the contention that environmentally proactive strategies (or BMPs) to mitigate for predictable and cumulative environmental impacts from residential/commercial development should be implemented to mitigate for predictable and cumulative environmental impacts. Using pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

Based on a review of the submitted PLUS application, the applicant projects that only about 32% of this parcel will be rendered impervious following this parcel's development; however, this figure appears to be a significant underestimate given the scope and density of this project. The applicant should be made aware that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be included in the impervious surface calculation. It is strongly recommended that the applicant recalculate this figure to reflect actual development projections within the finalized project design plans.

ERES Waters

This project is located adjacent to receiving waters of Inland Bays designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 11.5 of Delaware's "Surface Water Quality Standards" (as amended August 11, 1999), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of nutrient runoff through implementation of Best Management Practices (BMPs). Best Management Practices as defined in subsection 11.5(e) of this section, expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree practicable, or where attainable, a standard requiring no discharge of pollutants.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Inland Bays Watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited waterbody" 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. This project is located in the **low** nutrient reduction area requiring a 40 percent reduction in nitrogen and phosphorus.

In the Inland Bays, the primary source of water quality impairment is associated with nutrient runoff from agricultural and/or residential development. In order to mitigate for the aforementioned impairments, a post-development TMDL reduction level of 40 percent will be required for nitrogen and phosphorus, respectively. Compliance with the post-development TMDL nutrient loading reduction requirements will be assessed via nutrient budget protocol, a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. This post-development loading rate is then compared with the pre-development loading rate as a means to assess whether the project meets the acceptable TMDL reduction levels. Based on a preliminary evaluation of this project using this model (using the applicant's assumptions in the PLUS application), the development as currently conceived **does not** meet the Inland Bays watershed TMDL nutrient reduction requirements for nitrogen and phosphorus. The applicant is strongly advised to consider the use of appropriate BMPs and Best Available Technologies (BATs) to ensure compliance. Examples of BMPs or BATs that should be used to

significantly reduce nutrient loading from this project include practices that prevent or mitigate or minimize created surface imperviousness, maintenance of recommended wetland buffer widths, and use of innovative “green-technology” stormwater methodologies rather than conventional open-water stormwater management structures. As mentioned previously, since surface imperviousness is an important variable in the nutrient budget calculation, the applicant is strongly urged to recheck and/or recalculate their projected impervious surface figure to make sure that it reflects realistic post-development impacts. We suggest that the applicant verify their project’s compliance with the specified TMDL loading rates by running the model themselves (using the corrected impervious cover figure). Please contact Lyle Jones of Watershed Section at 739-9939 for the acceptable model protocol.

Water Supply

The project information sheets state water will be provided to the project by Tidewater Utilities via a central water system. DNREC’s records indicate that the project is located within the public water service area granted to Tidewater Utilities under Certificate of Public Convenience and Necessity 03-CPCN-12.

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.

Water Resource Protection Areas

The DNREC Water Supply Section has determined that the parcel falls wholly within an excellent ground-water recharge area (see attached map). Excellent Ground-Water Recharge Areas are those areas mapped by the Delaware Geological Survey where the first 20 feet of subsurface soils and geologic materials are exceptionally sandy. As such, these soils are able to transmit water very quickly from the land surface to the water

table. Consequently, ground water in these areas may very readily be adversely affected by land use activities or impervious cover.

The DNREC Water Supply Section recommends that the portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover. Some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area. However, the development should not exceed 50% regardless. A water balance calculation will be necessary to determine the quantity of clean water to be recharged via a recharge basin. The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies.

The proposed development would change the impervious over from 0% to approximately 32%. These numbers were provided by developer on the PLUS application. Ideally, relocating any open space areas to the part of the parcel within the excellent ground-water recharge area would decrease the total impervious area. Augmenting the groundwater recharge with clean rooftop run-off systems are another alternative to maintaining the quality and quantity of water recharging the aquifer.

In addition, because the excellent ground water recharge area can so quickly effect the underlying aquifer if contaminants are spilled or discharged across the area, the storage of hazardous substances or wastes should not be allowed within the area unless specific approval is obtained from the relevant state, federal, or local program.

For more information refer to the Final Source Water Protection Guidance Manual for the Local Governments of Delaware

<http://www.wr.udel.edu/swaphome/phase2/SWPguidancemanual.html>

and

Ground-Water Recharge Design Methodology

http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf.

For more information contact John Barndt at (302) 739-9945.

Sediment and Erosion Control/Stormwater Management

The Sediment and Stormwater plan review and approval as well as construction inspection will be coordinated through Sussex Conservation District.

Green technology BMPs such as bioretention, filtration, or infiltration must be considered prior to ponds for management of stormwater quality. Any parts of the site that drain to a tidal outlet will be eligible for a waiver of stormwater quantity management. For those areas, ponds may be eliminated as storage measures in favor of using Green Technology BMPs.

Some of this site drains onto the adjoining Hawkseye Subdivision and a discharge through Hawkseye to Bookhammer Pond is likely. If stormwater management facilities will be shared with Senators Subdivision and Hawkseye Subdivision, a shared maintenance agreement will need to be developed for those facilities.

The pond areas shown on the south side of the site, adjoining the wetlands are not recommended:

- It appears that tree clearing may be necessary to construct those ponds.
- The ponds will likely be embankment ponds in those locations and the existing soil in such close proximity to wetlands may not be conducive to construction of an embankment.
- Ponds within the flood zone is not recommended, particularly if fill is necessary to create an embankment.

The site has existing field terraces to help control erosion. The site has highly erodible soil and special considerations such as sediment traps, diversions, terraces, and reinforced or super silt fence should be used during construction to protect the adjoining wetlands from sedimentation.

Floodplains

Portions of the property are within the 100-year floodplain. It is recommended that construction be limited to those areas outside of the 100-year floodplain and on land above the base flood elevation for this site. According to the site plan, lots 28-43 are within the 100-year floodplain. The developer should consider moving these lots to a different location within the site or removing the completely.

Forest Preservation

Impacts to the forested area should be avoided. PLUS materials indicate that 1.30 acres will be removed. Although small, this area is important to the contiguous stretch of forests from Cape Henlopen Natural Area and help buffer Pot Hook Creek. All efforts should be made to eliminate the removal of trees.

Open Space

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas. Doing so will accomplish two things: it will preserve and expand the existing riparian buffers on site and its value for birds and wildlife and it will create recreational opportunities for residents by allowing them access to and views of the forest and stream.

The developer is also strongly urged to consider alternatives to mowed grass within community open space areas. Mowing and other maintenance costs from lawn areas can become a substantial burden for community maintenance associations. There may be areas within the development that are appropriate for warm or cool season grasses. The maintenance costs associated with meadow type grasses are much lower than those of lawn grasses, and provide food and habitat for birds and other wildlife and can help reduce non-point source pollution

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

Rare Species and Forested Riparian Buffers

DNREC has records of rare species within the forested riparian buffer along Pot Hook Creek and Bookhammers Pond. These riparian areas are part of the Cape Henlopen State Natural Area and this parcel is adjacent to Cape Henlopen State Park. Because of the presence of these species and the existence of the State Natural Area, the forested riparian area is within a State Natural Heritage Site. However, it does not lie within a Delaware National Estuarine Research Reserve. This is one of the criteria used to determine the presence of Critical Resource Waters. The final decision regarding Critical Resource Waters, if this is an issue, will be made by the U.S. Army Corps of Engineers (ACOE). The information above will aid the ACOE in their determination.

On December 19, 2005 DNREC provided comments to Land Design, Inc. (Michael Loveland), which is listed as the project designer/engineer for this project. It was recommended that the forested riparian buffer be left intact and that lot lines and infrastructure not be located within this buffer zone. However, the site plan does not reflect this recommendation as there are stormwater management ponds and lots within the riparian buffer and there is not a 100-foot buffer between wetlands and lots/infrastructure.

In order to protect rare species, unique communities, and water quality, the forested riparian buffer along Pot Hook Creek and Bookhammers Pond should be left intact (at least 100 feet in width, preferably 300 feet). Lot lines and infrastructure currently within this buffer zone should be either eliminated from the site plan or relocated. This includes lots 29-38, 45, 46, 47 and two stormwater management ponds. The buffer should also be placed in permanent conservation in order to prevent future clearing.

Nuisance Waterfowl

The stormwater management pond in the site plan may attract waterfowl like resident Canada geese and mute swans. 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 grass around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, property managers or owners 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.

Mosquito Control

Development projects that result in increased housing densities within 2 miles of large expanses of salt marshes or brackish wetlands can often lead to increased demands for mosquito control services, going beyond what DNREC's Mosquito Control Section currently has the budget or resources to provide. Adverse impacts upon the State's allocation of public funds for mosquito control services must be realistically recognized as the frequent consequence of approving these types of development projects; and State and local governments should then be prepared to deal with the increased budget demands for mosquito control services. Additionally, even though the EPA has scientifically determined that EPA-registered mosquito control insecticides can be applied "without posing any unreasonable risks to human health, wildlife or the environment" (when used in accordance with all product label instructions), avoiding or reducing the use of such pesticides should be employed whenever possible. Limiting development that is too close to wetlands will aide in achieving a reduction in pesticide use.

Natural Areas Inventory

The Office of Nature Preserves understands this site to be in Level 3, adjacent to areas undergoing growth. However, the site is comprised of environmentally sensitive features, including the Cape Henlopen Natural Area. Natural Areas contain lands of statewide significance identified by the Natural Area Advisory Council as the highest quality and most important natural lands remaining in Delaware.

That said, the Office of Nature Preserves strongly urges the applicant to remove or relocate the lots currently located in the Natural Area: specifically, lots 29 through 38, 45, 46, and 47.

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.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 18.6 tons (37,144.5 pounds) per year of VOC (volatile organic compounds), 15.4 tons (30,753.1 pounds) per year of NO_x (nitrogen oxides), 11.3 tons (22,690.2 pounds) per year of SO₂ (sulfur dioxide), 1.0 ton (2,019.8 pounds) per year of fine particulates and 1,553.5 tons (3,107,088.0 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 7.5 tons (14,982.1 pounds) per year of VOC (volatile organic compounds), 0.8 ton (1,648.5 pounds) per year of NO_x (nitrogen oxides), 0.7 ton (1,368.0 pounds) per year of SO₂ (sulfur dioxide), 0.9 ton (1,765.3 pounds) per year of fine particulates and 30.4 tons (60,733.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 3.0 tons (5,937.8 pounds) per year of NO_x (nitrogen oxides), 10.3 tons (20,653.2 pounds) per year of SO₂ (sulfur dioxide) and 1,523.2 tons (3,046,354.1 pounds) per year of CO₂ (carbon dioxide).

	VOC	NOx	SO ₂	PM _{2.5}	CO ₂
Mobile	18.6	15.4	11.3	1.0	1553.5
Residential	7.5	0.8	0.7	0.9	30.4
Electrical Power		3.0	10.3		1523.2
TOTAL	26.1	19.2	22.3	1.9	3107.1

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 3.0 tons of nitrogen oxides per year and 10.3 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 reduces air pollution. We highly recommend this project development and other residential proposals increase the energy efficiency of their homes.

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

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

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

a. **Fire Protection Water Requirements:**

- Water distribution system 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. (Assembly)
- Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required. (One & Two- Family Dwelling)
- Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

b. **Fire Protection Features:**

- All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed.
- Buildings greater than 10,000 sq.ft., 3-stories or more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.
- Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
- Show Fire Lanes and Sign Detail as shown in DSFPR

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 road to the subdivision from Gillsneck Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to

turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.

- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

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
- Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Note indicating if building is to be sprinklered
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
- 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: Milton Melendez 698-4500

The Delaware Department of Agriculture has no objections to the Senators Subdivision application. The site is located on an environmentally sensitive development area. The

Strategies for State Policies and Spending encourages environmentally responsible development in Investment Level 3 areas. This site is part of an “excellent recharge” area. DNREC has mapped all ground water potential recharge areas. An “excellent recharge” rating is the highest rating and designates an area as having important groundwater recharge qualities. Maintaining pervious cover in “Excellent” and “Good” recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as “excellent” and “good” recharge areas adversely impacts the future prospects for agriculture in Delaware.

Right Tree for the Right Place

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

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

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 Jimmy Atkins 739-4263

This proposal is for 242 single-family homes on 119 acres near Lewes. According to the State Strategies Map and the Sussex County Comprehensive Plan, the site is located in an Environmentally Sensitive Developing Area. DSHA supports this proposal because

residents will have proximity to existing services, markets, and employment opportunities available in nearby Lewes and Rehoboth. Furthermore, this proposal target units for first-time homebuyers, in an area where development pressures continue to drive housing prices out of reach of most homebuyers.

To facilitate the units targeted for first-time homebuyers, we encourage the developer to apply for Sussex County's Moderately Priced Housing Unit Program which provides the following incentives to developers who provide a percentage of units affordable to Sussex County residents of modest income:

- An expedited review;
- Waivers of some or all County fees;
- Density bonus; and
- Full utilization of the zoning designated for the parcel.

A Request for Proposal (RFP) process has been established to select initial program participants. The developer is encouraged to call William C. LeCates, Director of Sussex County's Community Development and Housing Division at 855-7777 to learn more about the RFP application.

Department of Education – Contact: John Marinucci 739-4658

Accommodation of DelDOT and State Fire Marshal requirements for road widths, turning radii and fire lanes will address the needs of school bus access.

DOE requests the developer work with the local 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 local school district.

Sussex County – Contact: Richard Kautz 855-7878

Article IV of the Subdivision Ordinance requires that the Preliminary Plat of the subdivision "shall show the general plan for the ultimate development of the property, including as much of the surrounding area as may be necessary for an adequate consideration of the land to be subdivided." Because this subdivision includes a stormwater management area and a community amenity area outside this subdivision but on the same tract of land, the plan should be revised to comply with this requirement by including the ultimate plan for the property.

Because this project is situated in an Environmentally Sensitive Development Area, the reduction of 242 lots from 20,000 sq. ft. to an average of 10,437 sq. ft. allows for more than 53 acres of open space yet only 37 acres of "useable" open space is provided. As a result, many of the lots do not have direct access to open space. The remaining open space is that which would otherwise be required with or without the clustering (i.e. stormwater management, buffers, and utilities). The required ESDA report should include how this issue and the PLUS comments have been addressed and how the plan has been revised accordingly.

This fiscal year Sussex County will be considering implementation of a Source Water Protection Program required by the State. Depending on the requirements adopted by the County Council this project might be affected. Any well location should insure that the wellhead protection area is entirely on site. Because of similar water issues as a contiguous project, this development may be required to prepare a water supply report similar to the one prepared for Cadbury at Lewes.

The Sussex County Engineer Comments:

The proposed project is within the West Rehoboth Expansion of the Dewey Beach Sanitary Sewer District and connection to the sewer system is mandatory. The project conforms to the West Rehoboth Planning Study and system design assumptions for sewer service. A sewer concept plan for providing sewer service to the area, including this project, was previously approved. This plan requires extensive regional construction to be completed by the developer, with the added requirement to participate in and contribute funds to a necessary treatment plant upgrade in accordance with an approved sequence of construction. Some construction must be completed prior to any sewer connections occurring. This information is detailed on the approved concept plan, with additional conditions provided by the attached letters dated May 18, 2005 and August 16, 2005. (Handed out at meeting) In addition to the above, the layout of the new proposal differs significantly from the original, and it will be required that a revised concept plan for Senator's Subdivision be submitted for review and approval prior to the submittal of any construction plans. A checklist for preparing sewer concept plans was handed out at the meeting.

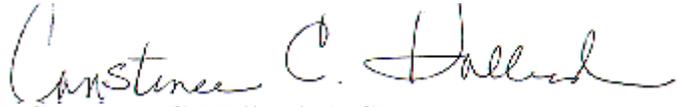
The proposed development will require a developer installed collection system in accordance with Sussex County's standard requirements and procedures. The Sussex County Engineer must approve the connection point. The plan is different from the approved concept plan and a revised concept is required as noted above. The previously approved concept plan shall also be submitted with all future plan submittals.

One time System Connection Charges will apply. Please contact Mrs. Christine Fletcher at 302 854-5086 for additional information on charges.

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".

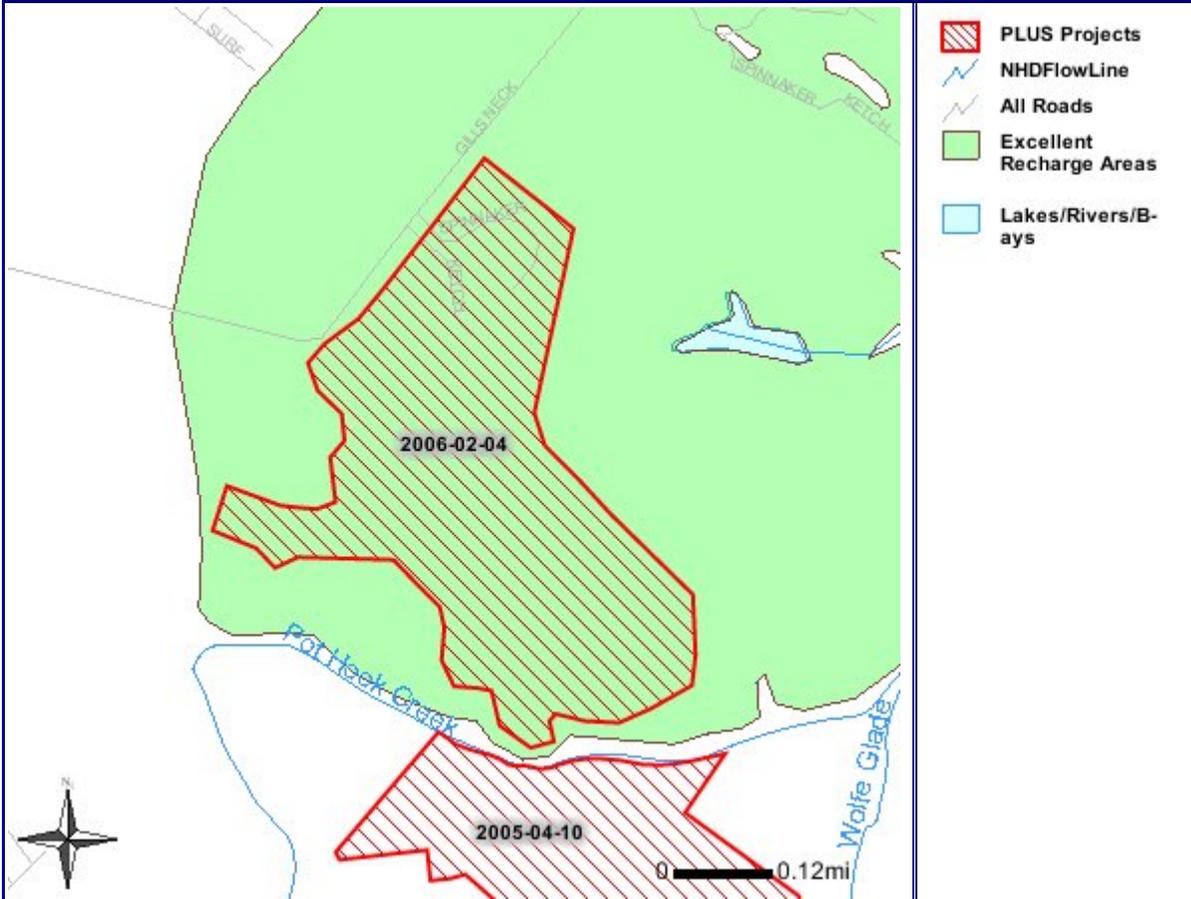
Constance C. Holland, AICP
Director

CC: Sussex County



Senators Subdivision

2006-02-04



This map was produced by the Delaware Department of Natural Resources and Environmental Control.

