



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF STATE PLANNING COORDINATION

September 25, 2013

Mr. David M. Kuklish, PE
Element Design Group
115 West Market Street
Lewes, DE 19958

RE: PLUS review 2013-08-04, Showfield

Dear Mr. Kuklish,

Thank you for meeting with State agency planners on August 28, 2013 to discuss the proposed plans for Showfield. According to the information received, you are seeking approval through Sussex County for a 173 unit single family residential community on 139 acres.

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

Strategies for State Policies and Spending

This project is located in Investment Level 1 according to the *Strategies for State Policies and Spending*. The site being reviewed is within Sussex County, however it is adjacent to the City of Lewes. Investment Level 1 reflects areas that are already developed in an urban or suburban fashion, where infrastructure is existing or readily available, and where future redevelopment or infill projects are expected and encouraged by State policy.

Code Requirements/Agency Permitting Requirements

State Historic Preservation Office – Contact Terrence Burns 736-7404

- It appears that there were a couple of known historic houses (S-1052, S-1053) on this parcel, but do not appear anymore. The houses were along Gills Neck Road,

and there is still a barn on the parcel, which is associated with one house (S-1052). Furthermore, the USGS Topographic Map of 1918 shows that these houses were there then; it is possible that they were built during the late 19th or early 20th century. In addition, there is also another house (S-1056) near the parcel, towards White's Pond. With this in mind, it is also important that the developer be aware of the Delaware's Unmarked Human Burials and Human Skeletal Remains Law, which is outlined in Chapter 54 of Title 7 of the Delaware Code.

- Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, and sometimes near or within the boundary of an historic farm site. Even a marked cemetery can frequently have unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware's Unmarked Human Burials and Human Skeletal Remains Law (Delaware Code Title 7, Chapter 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. The Division of Historical & Cultural Affairs recommends that owners and/or developers have a qualified archaeological consultant investigate their project area, to the full extent, to see if there is any unmarked cemetery, graves, or burial sites. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to know more information that pertains to unmarked human remains or cemeteries, please check the following websites for additional information: www.history.delaware.gov/preservation/umhr.shtml and www.history.delaware.gov/preservation/cemeteries.shtml .

Therefore, prior to any demolition or ground-disturbing activities, the developer should consider hiring an archaeological consultant to examine the parcel for potential historic or cultural resources, such as a potential archaeological site, a cemetery or unmarked human remains. Furthermore, the developer should also include a barrier or sufficient landscaping between the proposed development and the house (S-1056) near the parcel, to protect it from adverse sound and visual effects.

- If there is any federal involvement with the project, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). Regulations promulgated for Section 106 of this Act stipulate that no ground-disturbing or

demolition activities should take place before the Corps or other involved federal agency determines the area of potential effect of the project undertaking. These stipulations are in place to allow for comment from the public, the Delaware State Historic Preservation Office, and the Advisory Council for Historic Preservation about the project's effects on historic properties. Furthermore, any preconstruction activities without adherence to these stipulations may jeopardize the issuance of any permit or funds. If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role, please review the Advisory Council's website at www.achp.gov.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Per Section 2.3.1 of the Standards and Regulations for Subdivision Streets and State Highway Access, Traffic Impact Studies (TIS) are warranted for developments generating more than 400 vehicle trip ends per day or 50 vehicle trip ends per hour. However, Section 2.3.2 provides that for developments generating less than 2,000 vehicle trip ends per day and less than 200 vehicle trip ends per hour, DelDOT may accept an Area Wide Study Fee of \$10 per daily trip in lieu of a TIS. To obtain a scope of work for a TIS, the developer may have their engineer contact Mr. Troy Brestel of this office. Mr. Brestel may be reached at (302) 760-2167.

Preliminarily, DelDOT believes that payment of the Area Wide Study Fee would be acceptable. If the developer chooses this option, payment would be due when the site plan is submitted for review.

Payment of the Area Wide Study Fee would not relieve the developer of responsibility for making off-site improvements or contributing to DelDOT capital projects. In accordance with Section 3.10.2 of DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access, needed off-site improvements or contributions would need to be shown on the record plan by illustration or note.

A TIS was done in 2007 for a larger development that would have occupied these parcels and other adjacent parcels. DelDOT's January 16, 2008 review letter (copy attached) identified several offsite improvements. Preliminarily, we anticipate requiring the developer to participate in all of these improvements, although the extent of their participation will necessarily change and will likely decrease in most cases.

- Because the site would generate more than 200 vehicle trip ends per day, a Traffic Operational Analysis may be required as part of the site plan review, in accordance with Section 2.14 (formerly 3.9) of the Standards and Regulations. If the developer performs a TIS, the work involved in a TOA would be included therein. Payment of the Area Wide Study Fee does not exempt the developer from providing a TOA if one is found to be necessary.
- The site entrance must be designed in accordance with DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access, which is available at

http://www.deldot.gov/information/pubs_forms/manuals/subdivisions/pdf/Subdivision_Manual_Revision_1_proposed_060110.pdf. If the subdivision streets are to be built for State maintenance, they too must be designed in accordance with DelDOT's Standards and Regulations.

- Metes and bounds and total areas need to be shown for any drainage easements. Section 5.7.2.5 of DelDOT's Standards and Regulations for Subdivision Streets and State Highway Access requires, in part, a minimum 20-foot wide drainage easement for storm drainage systems that fall outside the existing right-of-way or the drainage/utility easement. These easements must be shown on the record plan, not referenced by a note.
- In accordance with Section 3.4.1.2 of the Standards and Regulations for Subdivision Streets and State Highway Access, the Record Plan should show all existing entrances (residential/commercial) within 400 feet of the proposed site entrances.
- In accordance with Section 3.10 of the Standards and Regulations for Subdivision Streets and State Highway Access, the required off-site improvements and when they are warranted will need to be shown on the Record plan by note or illustration.
- In accordance with Section 3.6.5 and Figure 3-3 of the Standards and Regulations for Subdivision Streets and State Highway Access, DelDOT will require dedication of right-of-way along the site's frontage on Gills Neck Road (Sussex Road 267) to provide a minimum of 30 feet of right-of-way from the road centerline. The right-of-way dedication note has been revised to the following, "**An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat.**"
- In accordance with Section 3.6.5 of the Standards and Regulations for Subdivision Streets and State Highway Access, DelDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on Gills Neck Road for a future 10-foot wide pedestrian/bike path. The location of the easement shall be outside the limits of the ultimate right-of-way. The easement area can be used as part of the open space calculation for the site. The following note is required, "**A 15-foot wide permanent easement for a future 10-foot wide multi-use path is hereby established, as per this plat.**"
- In accordance with Section 4.8 of the Standards and Regulations for Subdivision Streets and State Highway Access, a 20-foot wide buffer will be required from the edge of any stormwater management pond to the ultimate right-of-way of the nearest State-maintained road. The ultimate right-of-way is based on the functional classification of the road. From the concept plan presented, we do not see a problem in this regard.
- As specified in Section 3.4.1.1 of the Standards and Regulations for Subdivision Streets and State Highway Access, a traffic generation diagram is required on the Record Plan.
- In accordance with Section 3.5.5.5 of the Standards and Regulations for Subdivision Streets and State Highway Access, it will need to be determined whether a bus stop will

be required for this project and, if so, what if any amenities it may need to have. As necessary, the developer may contact Mr. Wayne Henderson, a Senior Planner at DTC in this regard. Mr. Henderson may be reached at (302) 576-6063.

- Referring to the Standards and Regulations for Subdivision Streets and State Highway Access, Chapter 1 – Introduction, Section 1.4: Review Fees, page 1-8, the Initial Stage review fee shall be assessed to this project.
- In accordance with Section 3.4 of the Standards and Regulations for Subdivision Streets and State Highway Access, a record plan shall be prepared prior to issuing “Letter of No Objection”. The following information will be required for the “Letter of No Objection” review:

Copy of the Initial Stage Fee Calculation Form
Copy of the Initial Stage Review Fee
Gate-Keeping Checklist – Site Plan
Design Checklist – Record Plan*
Owners and Engineer’s name and e-mail address
Sight Distance Spreadsheet
Auxiliary Lane Spreadsheet
Three (3) paper sets of the Record Plan
Conceptual Entrance Plan
CD with a pdf of the Site Plan
Submission of the Area-Wide Study Fee (if applicable)

*For the design checklist for the site plan, please refer to the Standards and Regulations for Subdivision Streets and State Highway Access, Appendix D, Plan Review Checklist, page D-2 and D-3.

- Referring to the Standards and Regulations for Subdivision Streets and State Highway Access, Chapter 1 – Introduction, Section 1.4: Review Fees, page 1-8, the Construction Stage review fee shall be assessed to this project.
- Referring to the Standards and Regulations for Subdivision Streets and State Highway Access, Chapter 4 – Construction Plans, Section 4.3: Subdivision Construction Plan Checklist or Section 4.4: Commercial Entrance Plan Checklist, an entrance plan shall be prepared prior to issuing entrance approval. The following information will be required for Subdivision/Entrance Plan review;

Copy of the Construction Stage Fee Calculation Form
Copy of the Construction Review Fee
Gate-Keeping Checklist – Entrance Plan
Design Checklist – Entrance Plan**
Auxiliary Lane Spreadsheet
Three (3) paper sets of the Entrance Plan
SWM Report and Calculations (If applicable)
CD with a pdf of the Entrance Plan

**For the design checklist for the entrance plan, please refer to the Standards and Regulations for Subdivision Streets and State Highway Access, Appendix D, Plan Review Checklist, page D-9 and D-13.

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 735-3495

Wetlands

- State regulated wetlands ARE NOT located on this property based on a review of the State wetland maps. State regulated wetlands are those wetlands identified on the State's official State Regulated Wetland Maps. Additional information about State regulated wetlands is available by contacting the Wetlands and Subaqueous Lands Section at (302) 739-9943 or on line at <http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx>

State regulated subaqueous lands ARE likely to be located on this property based on a review of aerial photographs, State Wetland Mapping Project (SWMP) maps, Soil Surveys and/or USGS topographic maps. This area of subaqueous lands appears to be incorporated into the plan drawings. Caution should be taken to keep county setbacks and to prevent construction material from entering the waterway. State subaqueous lands include all tidal waters (up to the mean high water line), most non-tidal rivers, streams, lakes, ponds, bays and inlets (up to the ordinary high water line), most perennial streams and ditches and many intermittent streams and ditches. Additional information about State regulated subaqueous lands is available by contacting the Wetlands and Subaqueous Lands Section at (302) 739-9943 or on line at <http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx>

Waters of the U.S. regulated by the U.S. Army Corps of Engineers ARE likely to be located on this property based on a review of aerial photographs, SWMP maps, Soil Surveys and/or USGS topographic maps. The application states that these were delineated but not signed off on by the U.S. Army Corps. Waters of the United States include the following: navigable waters of the United States; wetlands; tributaries to navigable waters of the United States, including adjacent wetlands and lakes and ponds; interstate waters and their tributaries, including adjacent wetlands; and all other waters of the United States not identified above, such as isolated wetlands, intermittent streams, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, where the use, degradation or destruction of these waters could affect interstate or foreign commerce. The extent of Federal jurisdiction over Waters of the United States is determined by the U.S. Army Corps of Engineers and is based on site specific conditions. Therefore, an on-site inspection by an environmental consultant is recommended to determine if Waters of the U.S. are located on the property and the limits of Federal jurisdictional. The U.S. Army Corps of Engineers can be contacted at (215) 656-6728 or online at <http://www.nap.usace.army.mil/cenap-op/regulatory/regulatory.htm>.

Showfield Sussex County 335-8.00-46.00, 51.00, 52.00 & 53.00



0 0.1 0.2 0.4 Miles



Reviewed By: Kitty Bronson
Source: Sussex County layers
Parcels, DeIDOT Rds, Wetland
and SWMP layers, Lakes, Rivers



- The project is located in the *low nutrient reduction* zone of the greater Inland Bays watershed. In this watershed, Total Maximum Daily Load (TMDL) pollutant reduction targets have been developed by the State of Delaware (under the auspices of Section 303(d) of the 1972 Federal Clean Water Act) for nutrients (e.g., nitrogen, phosphorus), and bacteria. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited water body” can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; *State of Delaware Surface Water Quality Standards, as amended July 11, 2004*) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. The TMDL for the *low reduction* zone of the Inland Bays watershed calls for 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 40 percent reduction (17 percent for marine waters) in bacteria from baseline conditions.

A nutrient management plan is required under the *Delaware Nutrient Management law (3 Del. Chapter 22)* for all persons or entities who apply nutrients to lands or areas of open space in excess of 10 acres. This project’s open space may exceed this 10-acre threshold. Please contact the Delaware Nutrient Management Program at 739-4811 for further information concerning compliance requirements or view the following web link for additional information:

<http://dda.delaware.gov/nutrients/index.shtml>

The Inland Bays Pollution Control Strategy (PCS) and the accompanying regulations were finalized by order of the DNREC Secretary on October 2008.

These regulations can be reviewed at

<http://regulations.delaware.gov/documents/November2008c.pdf> and background information, guidance documents, and mapping tools can be retrieved from http://www.dnrec.state.de.us/water2000/Sections/Watershed/ws/ib_pcs.htm.

Water Supply

- The project information sheets state that public 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 Lewes Board of Public Works under Certificate of Public Convenience and Necessity (CPCN) 01-CPCN-07 & 03-CPCN-06. DNREC recommends that the developer contact Lewes Board of Public Works to determine the availability of public water. Any public water utility providing water to the site must obtain a CPCN from the Public Service Commission. Information on CPCN's and the application process can be obtained by contacting the Public Service Commission at 302-739-4247. Should an on-site Public/Miscellaneous Public well be needed, a minimum isolation distance of 150 feet is required between the well and any potential source of contamination, such as a septic tank and sewage disposal area, and it must also be located at least 150 feet from the outermost boundaries of the project. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells.

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.

Potential Contamination Sources exist in the area, and any well permit applications will undergo a detailed review that may increase turnaround time and may require site specific conditions/recommendations. In this case, there is an Underground Storage Tank associated with the Lewes Gulf located within 1000 feet of the proposed project.

Water Resource Protection Areas

- A significant portion falls within an excellent ground-water recharge potential area for the Sussex County (see attached map). Sussex County has source water protection ordinance in place.

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. These soils are able to transmit water very quickly from the land surface to the water table. This map category (excellent) is an indicator of how fast contaminants will move and how much water may become contaminated (Andres, 2004). Land use activities or impervious cover on areas of excellent ground-water recharge potential may adversely affect ground water in these areas.

The applicant indicates that wet ponds are anticipated for the management of stormwater. Wet ponds intersect the water table and have the potential to affect the water quality of the aquifer. Some research suggests that pollutant removal is reduced when ground water contributes substantially to the pool volume (Schueler, 1997).

Wet ponds as a BMP utilize a settling pond to remove particulates. This type of BMP reduces nutrients by the biological activity of algae. While these systems address the particulate and nutrient components of stormwater runoff, they do not address pathogens, petroleum hydrocarbons, pesticides, other organic compounds, and other inorganic compounds associated with residential land use (DNREC, 1999). Because this is an area of excellent recharge potential, there exists the potential for these constituents to enter the aquifer and compromise water quality.

The construction phase of stormwater management ponds requires excavation, hauling, and grading. The heavy equipment used in this phase has the capacity to compact and degrade the structure of the strata that defines the area as an excellent ground-water recharge area (Schueler, 2000a). Changes to the structural soil properties may cause significant reduction in recharge capacity. Installing stormwater management ponds in excellent ground-water recharge areas has the potential to contaminate the ground water beneath it and infiltrate into the aquifer (Schueler, 2000b).

Additionally, the proposed project should conform to the Sussex County Source Water Protection Ordinance No. 1979 §89-7, A. (3) to protect the resource.

- DNREC recommends:
 - Limiting impervious cover to 35 to 60 percent,
 - Quantify recharge to demonstrate post-development recharge is greater than or equal to pre-development recharge using the elements outlined in Sussex County Source Water Protection Ordinance No. 1979 §89-7, A. (2).
 - Wet ponds should be located outside the excellent ground water recharge potential area
 - In addition, because the excellent ground water recharge area can readily affect 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.

References

Andres, A. Scott, 2004, Ground-Water Recharge Potential Mapping in Kent and Sussex Counties, Delaware: Delaware Geological Survey Report of Investigations No. 66, p. 14.

<http://www.udel.edu/dgs/Publications/pubform.html#investigations>

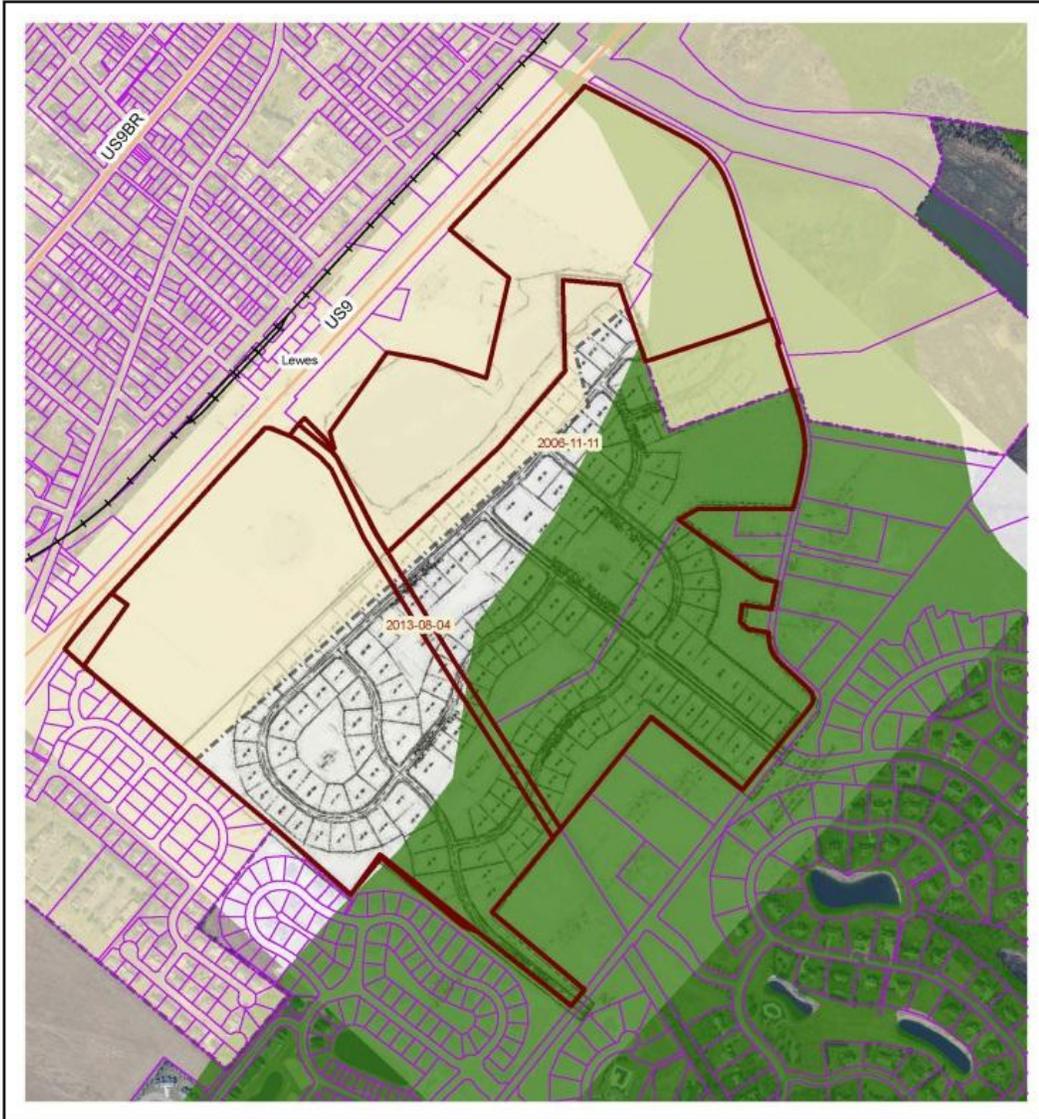
Delaware Department of Natural Resources and Environmental Control, 1999, The State of Delaware Source Water Assessment Plan: Dover, DE, p. 301.

Schueler, T. 1997. Influence of groundwater on performance of stormwater ponds in Florida. Watershed Protection Techniques 2(4):525-528.

Schueler, T. R., 2000a, The Compaction of Urban Soils, in Schueler, T.R., and Holland, H.K., eds., The Practice of Watershed Protection: Ellicott City, MD, Center for Watershed Protection, p. 210 - 218.

Schueler, T. R., 2000b, Pollutant Dynamics of Pond Muck, in Schueler, T.R., and Holland, H.K., eds., The Practice of Watershed Protection: Ellicott City, MD, Center for Watershed Protection, p. 453 - 460.

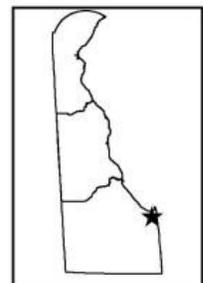
Showfield (PLUS 2013-08-04)



Legend

-  Municipal Boundaries
-  Excellent Groundwater Recharge Potential Area
-  Sussex County Tax Map Parcels

0 500 1,000 2,000 Feet
1:10,000



As of August 2013. This map is provided by the DNREC solely for display and reference purposes and is subject to change without notice. DNREC will not be held responsible for the assumed accuracy contained in the map or for the use other than its intended purpose.

Sediment and Stormwater Program

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

The application states stormwater will be discharge into White's Pond. Please contact the Sussex Conservation District as soon as possible to determine what information will be required in order to discharge into the pond.

Hazardous Waste Sites

- If it is determined by the Department that there was a release of a hazardous substance on the property in question and the Department requires remediation pursuant to the Hazardous Substance Cleanup Act, the provisions of 7 Del.C., Chapter 91, Delaware Hazardous Substance Cleanup Act and the Delaware *Regulations Governing Hazardous Substance Cleanup* shall be followed.
- There are five SIRS sites within a ½ miles radius of the property in question:
 - Thompson Property (DE-1527) is located adjacent to the north-west of the project property. A Phase I was conducted on the Site in May 2012, and later joined the Brownfields program in July 2012. A Proposed plan was published for the Site in March 2013 stating there was no risk to the groundwater, however, contaminated soil would be removed, treated and disposed of off-site. The Final plan was published in April 2013.
 - Lowe Site (DE-0217) is located adjacent to the north-east of the project property. A Preliminary Assessment was performed in March of 1990 and was recommended for a No Further Action designation (NFA). A NFA was issued for the Site in 1995.
 - Trails and Pathways (DE-1546) is located adjacent to the north of the project property. The Site is a 16 mile corridor from Georgetown to Cape Henlopen. The corridor follows the old Queen Anne's railroad. The area was identified in the 2006 Statewide Rails to Trails/Rails with Trails master plan. The Work Plan for the project was approved in August of 2013 and the corridor is in the process of becoming a recreational trail way.

- Lewes Coal Gas Site (DE-0190) is located adjacent to the west of the project property. Due to the possible purchase of the former site of a coal gas plant, a Preliminary Assessment (PA) was performed in January of 1989. An 8,000 gallon underground fuel storage tank was removed from the western portion of the Site (the Pagonis property). A Hydrogeologic Investigation was performed in January 1991, and it was determined that there was groundwater contamination due to the coal gas plant. A Facility Evaluation was performed from 1993-1994 which included the removal of buried remains of the former coal gas plant and contaminated soils. A Remedial Investigation took place soon after in May of 1996. The Final Plan of Remedial Action (FPRA) for the Site was published in July of 1998. The FPRA stated that a Groundwater Management Zone (GMZ) would be established and a new drinking water well would be installed. The Site entered the Voluntary Clean-Up Program (VCP) in October of 2003, followed by a Site Assessment in December of the same year. A Supplemental Hydrogeological Investigation was performed in April of 2004 to further evaluate the Site groundwater and if there was any contamination migration to the Pagonis property. The Site entered the Operations and Maintenance (O&M) stage in July of 2005. As part of the O&M plan, the asphalt and landscaping cap, passive recovery using absorbent booms, and groundwater monitoring are inspected annually.
- Pagonis property (DE-1035) is located adjacent to the west of the project property. The Site is part of the Lewes Coal gas Site. An 8,000 gallon underground storage tank was removed from the property after a PA was performed to the Lewes Coal gas Site. Soil samples were collected on the Site during the Remedial Investigation of the coal gas Site. It was determined that there were no signs of a release and no risk to human or environmental health. A Supplemental Hydrogeological Investigation performed in April of 2004 on the Lewes Coal Gas Site determined that further evaluation of the Site groundwater was needed to monitor any contamination migration to the Pagonis property. The Site has been redeveloped and is part of the O&M annual inspections of the Lewes Coal Gas Site.

Tank Management Branch

Please be aware:

- If a release of a Regulated Substance occurs at the proposed project site, compliance of 7 Del.C., Chapter 60, 7 Del.C., Chapter 74 and DE Admin. Code 1351, State of Delaware *Regulations Governing Underground Storage Tank Systems* (the UST Regulations) is required.
- The following confirmed leaking underground storage tank (LUST) projects are located within a quarter mile from the proposed project area:
 - Lewes Gulf, Facility: 5-000190, Project: S9103052 (Inactive)
 - Lewes Coal and Gas Site, Facility: 5-000995, Project: S0504033 (Inactive)

- Cape Henlopen US Army Reserve, Facility: 5-000606, Project: S9911220 (Inactive)
 - William E Lowe Jr, Facility: 5-000682, Project: S9292030 (Inactive)
 - Jefferson Avenue Residence, Facility: 5-000997, Project: S0503030 (Inactive)
 - City of Lewes, Facility: 5-000421, Project: S9212286 (Inactive)
 - DRBA Freeman Highway Maintenance Area, Facility: 5-001057, Project: S1102022 (Inactive)
 - **Lewes Presbyterian Church, Facility: 5-001056, Project: S1009081 (Active)**
- No environmental impacts are anticipated; however, per the **UST Regulations: Part E, § 1. Reporting Requirements:**
 - Any indication of a Release of a Regulated Substance that is discovered by any Person, including but not limited to environmental consultants, contractors, utility companies, financial institutions, real estate transfer companies, UST Owners or Operators, or Responsible Parties shall be reported within 24 hours to:
 - The Department’s 24-hour Release Hot Line by calling 800-662-8802; and
 - The DNREC, Tank Management Branch by calling 302-395-2500

Air Quality

- The applicant shall comply with all applicable Delaware air quality regulations. Please note that the following regulations in Table 1 – Potential Regulatory Requirements may apply to your project:

Table 1: Potential Regulatory Requirements	
Regulation	Requirements
7 DE Admin. Code 1106 - Particulate Emissions from Construction and Materials Handling	Use dust suppressants and measures to prevent transport of dust off-site from material stockpile, material movement and use of unpaved roads. Use covers on trucks that transport material to and from site to prevent visible emissions.
7 DE Admin. Code 1113 – Open Burning	Prohibit open burns statewide during the Ozone Season from May 1-Sept. 30 each year. Prohibit the burning of land clearing debris. Prohibit the burning of trash or building materials/debris.
7 DE Admin. Code 1135 – Conformity of General Federal Actions to the State Implementation Plan	Require, for any “federal action,” a conformity determination for each pollutant where the total of direct and indirect emissions would equal or exceed any of the de minimus levels (See Section 3.2.1)
7 DE Admin. Code 1141 – Limiting Emissions of Volatile Organic Compounds from Consumer and Commercial Products	Use structural/ paint coatings that are low in Volatile Organic Compounds. Use covers on paint containers when paint containers are not in use.
7 DE Admin. Code 1144 – Control of Stationary	Ensure that emissions of nitrogen oxides (NO _x), non-

Generator Emissions	methane hydrocarbons (NMHC), particulate matter (PM), sulfur dioxide (SO ₂), carbon monoxide (CO), and carbon dioxide (CO ₂) from emergency generators meet the emissions limits established. (See section 3.2). Maintain recordkeeping and reporting requirements.
7 DE Admin. Code 1145 – Excessive Idling of Heavy Duty Vehicles	Restrict idling time for trucks and buses having a gross vehicle weight of over 8,500 pounds to no more than three minutes.

For a complete listing of all Delaware applicable regulations, please look at our website: <http://www.awm.delaware.gov/AQM/Pages/AirRegulations.aspx>.

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

At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation:

- **Fire Protection Water Requirements:**
 - 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.
 - The infrastructure for fire protection water shall be provided, including the size of water mains.

- **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.
 - 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 this office, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

- **Gas Piping and System Information:**
 - Provide type of fuel proposed, and show locations of bulk containers on plan.

- **Required Notes:**
 - Provide a note on the final plans submitted for review to read “ All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations”
 - Name of Water Supplier
 - Proposed Use
 - National Fire Protection Association (NFPA) Construction Type
 - Maximum Height of Buildings (including number of stories)
 - Provide Road Names, even for County Roads

Recommendations/Additional Information

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

Department of Transportation – Contact Bill Brockenbrough 760-2109

- From the response to item 27 on the PLUS application, provision has been made for interconnection to adjoining lands to the north and to the east. However, from the Preliminary Project Plan, only the stub street to the north is apparent. It is not clear how the development would connect to the lands to the east. There are two cul-de-sacs that could be used for this purpose and DelDOT recommends that this be done but changes to the right-of-way lines would be needed.
- From the response to item 28 on the PLUS application, it appears that the proposed development is consistent with DelDOT planning for extension of the Junction & Breakwater Trail, but it is difficult to verify that from the exhibits provided. DelDOT recommends that the developer’s site engineer coordinate with the DelDOT manager for that project, Mr. Jeff Niezgoda. Mr. Niezgoda may be reached at (302) 760-2178.
- Further in that regard, DelDOT recommends that site plan be modified to provide for an access to the trail from the nearest subdivision street.
- In the northwest corner of the Preliminary Project Plan, there is an area of what appears to be open space that would have no street access. Access would be available only through residential lots. DelDOT recommends that access be provided from a street.
- The Preliminary Project Plan shows a long, straight street extending north from Gills Neck Road opposite Black Marlin Drive and ending at another, similarly long and straight street. Such a design can lead to speeding problems. DelDOT recommends that the developer consider designing curves in to these streets to avoid a future need for traffic calming measures.

- Please refer to the DelDOT website for guidance as to whether a pre-submittal meeting is required and how to prepare for one. That guidance is available at <http://www.deldot.gov/information/business>.
- Be advised that the standard general notes have been updated and posted to the DelDOT website. Begin using the new versions and look for the revision date of June 28, 2013 for the Record/Site Plan and Construction Plan general notes. The Temporary Traffic Control Notes (TTCN) still have the revision date of August 14, 2012. The notes can be found at http://www.deldot.gov/information/business/subdivisions/DelDOT_Development_Coordination_Plan_Sheet_Notes.doc
- In accordance with Section 3.6.4 of the Standards and Regulations for Subdivision Streets and State Highway Access, they recommend that right-of-way monuments be furnished and placed along the subdivision streets.
- Please check to determine if any utilities will need to be relocated as part of this project.
- The developer should anticipate a requirement that any sub-station and/or wastewater facilities have access from the internal subdivision streets with no direct access to the State-maintained highway. That does not appear to be a concern on this plan.
- All PLUS comments should be addressed prior to submitting record, subdivision or entrance plans for review.

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 735-3495

Soils Assessment Soils & Wetlands

- Based on soils survey mapping update, following soil mapping units were mapped on subject parcel (grouped on the basis of drainage class):
 - Well drained – Fort Mott (FmB) and Greenwich (GrA & GrB)
 - Excessively well drained – (EvB & EvD)
 - Poorly drained (hydric) – Fallsington (FgA)
- Based on NRCS soils survey mapping update, the primary soil mapping unit of concern is Fallsington (FgA). Fallsington is a poorly-drained wetland associated (hydric) soil that has severe limitations for development (Figure 1). DNREC strongly recommends that the applicant avoid construction in the immediate vicinity of the Fallsington soil mapping unit

Building on hydric soils (i.e., Fallsington) may increase the potential for future on-site and off-site flooding events (hydric soils act as nature’s “sponge” by retaining water and mitigating surface water runoff or flooding) along with concurrent increases in the volume of pollutant-laden surface water runoff and discharges to surface water bodies (streams, ponds, and ocean) and groundwater; such increases in water volume and pollutants may negatively impact both homeowner safety and water quality (or health). Therefore, DNREC strongly recommends the applicant avoid building in the hydric Fallsington soil mapping unit.

A field evaluation by a licensed soil scientist is strongly recommended (ARCPACS certified and licensed Class D) to make a site-specific field delineation of the hydric soils in this parcel. Please contact the Underground Discharges Branch at 739-9948 for a list of licensed soil scientists.

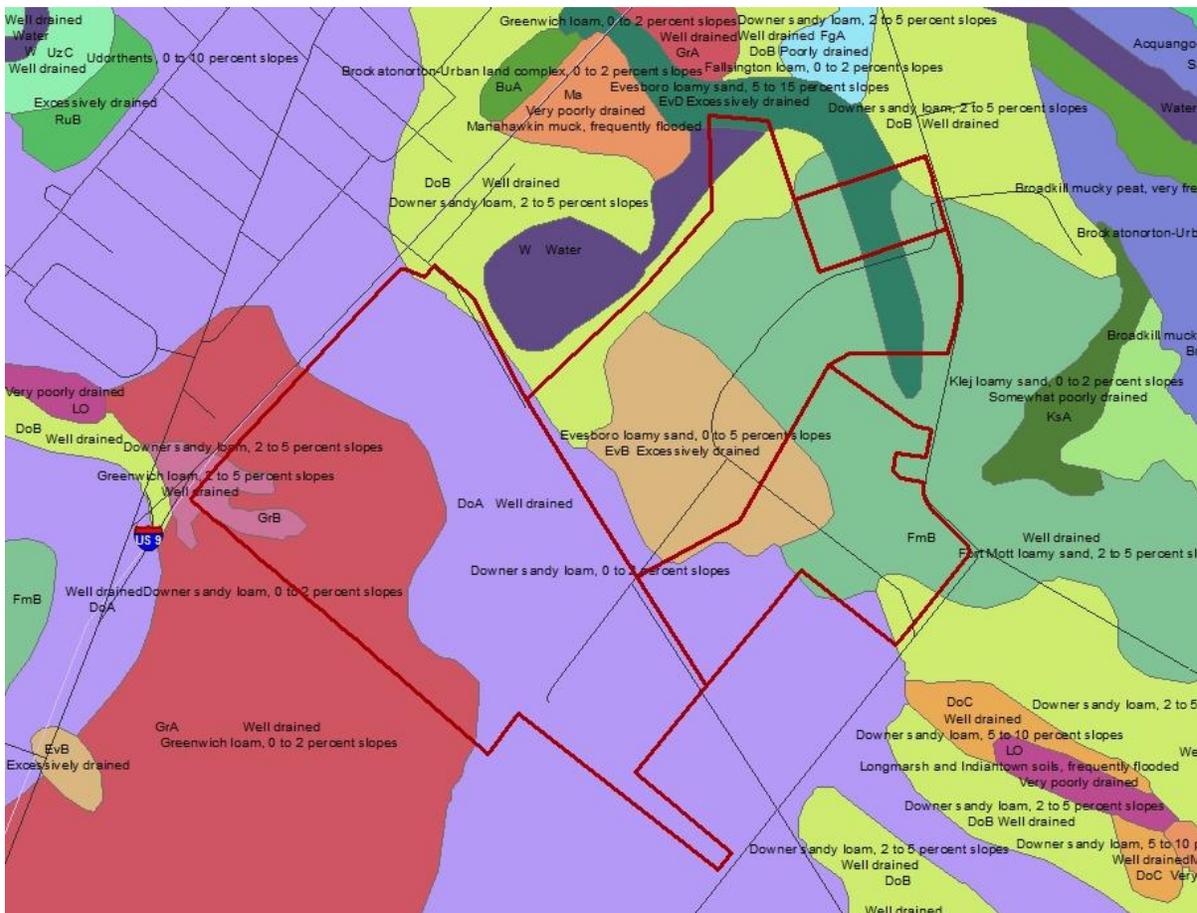


Figure 1: NRCS soil survey mapping update in the vicinity of the proposed construction.

Additional information on TMDLs and water quality

- Compliance with the specified TMDL nutrient and bacterial reduction requirements specified for the Inland Bays watershed can be facilitated by the strategies and requirements described in the Inland Bays PCS, and the implementation/adherence to the following recommended BMPs:

- A United States Corps of Engineers (USACE) approved wetlands delineation is strongly recommended. According to information presented in the PLUS application, a wetlands delineation was conducted but not approved by the USACE.
- Based on a review of existing buffer research by Castelle et al. (Castelle, A. J., A. W. Johnson and C. Conolly. 1994. *Wetland and Stream Buffer Requirements – A Review*. J. Environ. Qual. 23: 878-882.), an adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In recognition of this research and the need to protect water quality, the Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from all water bodies (including ditches) and wetlands (field delineated and approved by the USACE).
- Calculate post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, and roads) included in the calculation. DNREC strongly recommends that the applicant avoid all hydric soil mapping units (e.g., Fallsington). Building on such soils is likely to contribute to an increased probability of future flooding problems.
- According to the conceptual plot plan, the applicant intends to install storm water ponds in this parcel. DNREC strongly advises against the installation of any new additional open-water ponds because they will contribute to increases in nuisance algae, geese and mosquitoes. Green technology storm water management can be utilized in lieu of open-water storm water management ponds.
- Use rain gardens, and green-technology storm water management structures (in lieu of open-water management structures) as BMPs to mitigate or reduce nutrient and bacterial pollutant impacts via runoff/discharges from impervious surfaces.
- Calculate post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, ponds, and roads) included in the calculation.
- Wherever practicable, use pervious paving materials (instead of conventional asphalt and concrete) as a BMP(s) to reduce the impacts from all forms of created surface imperviousness.
- The applicant should voluntarily assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the “Nutrient Load Assessment protocol.” The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) resulting from the conversion of individual or combined land parcels to a changed land use(s); thus providing applicants and governmental entities with quantitative information about the project’s impact(s) on baseline

water quality. DNREC strongly encourages the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact Jen Walls or John Martin at (Division of Watershed Stewardship) at 302-739-9939 for more information on the protocol.

Forest Preservation

- According to the PLUS application for the parcels in question, 33 acres of forest will be lost as a result of this project. WSCRCP requests that forest loss be minimized to the greatest extent possible.

Vegetated Buffers

- The applicant indicated that ‘appropriate stormwater management measures’ would be taken for nuisance species; however, methods were not discussed. The applicant did indicate that 50 feet buffers would be left intact around water features. DNREC recommends that the buffer be planted with native species of trees, shrubs, and tall grasses as nuisance geese do not feel as safe if they can’t scan the surrounding area for 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, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Additional information on hazardous waste sites.

- SIRS strongly recommends that the land owner perform environmental due diligence of the property by performing a Phase I Environmental Site Assessment (including a title search to identify environmental covenants) in accordance to Section 9105(c) (2) of the Delaware Hazardous Substance Cleanup Act (HSCA). While this is not a requirement under HSCA, it is good business practice and failure to do so will prevent a person from being able to qualify for a potential affirmative defense under Section 9105(c) (2) of HSCA.
- Additional remediation may be required if the project property or site is re-zoned by the county.
- Should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour emergency number (800-662-8802). SIRB should also be contacted as soon as possible at 302-395-2600 for further instructions.

Additional information on tank management.

- When contamination is encountered, PVC pipe materials should be replaced with ductile steel and nitrile rubber gaskets in the contaminated areas.
- If any aboveground storage tanks (ASTs) less than 12,500 gallons are installed, they must be registered with the TMS. If any ASTs greater than 12,500 gallons are installed, they are also subject to installation approval by the TMS.

Additional information on air quality

- New homes may emit, or cause to be emitted, air contaminants into Delaware’s air, which will negatively impact public health, safety and welfare. These negative impacts are attributable to:
 - Emissions that form ozone and fine particulate matter; two pollutants relative to which Delaware currently violates federal health-based air quality standards,
 - The emission of greenhouse gases which are associated with climate change, and
 - The emission of air toxics.
- Air emissions generated from commercial spaces include emissions from the following activities:
 - Area sources such as painting, maintenance equipment and the use of consumer products like roof coatings and roof primers.
 - The generation of electricity needed to support the commercial space, and
 - All transportation activity.
- Based on the information provided, the three air emissions components (i.e., area, electric power generation, and mobile sources) for the development were quantified. Table 1 represents the actual impact the Showfield development may have on air quality.

Table 2: Projected Air Quality Emissions for Showfield					
Emissions Attributable to Showfield (Tons per Year)	Volatile Organic Compounds (VOC)	Nitrogen Oxides (NOx)	Sulfur Dioxide (SO ₂)	Fine Particulate Matter (PM _{2.5})	Carbon Dioxide (CO ₂)
Mobile	7.9	8.3	0.2	0.1	5,113.0
Electric Power	*	2.1	7.4	*	1,088.9
Area Source	5.4	0.6	0.5	0.6	21.7
Total	13.3	11.0	8.1	0.7	6,223.6

(*) *Indicates data is not available.*

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

DNREC encourages sustainable growth practices that:

- Control sprawl;
 - Preserve rural and forested areas;
 - Identify conflicting land use priorities;
 - Encourage growth on previously developed sites and denser communities while at the same time protect our diminishing land base;
 - Coordinate transportation, housing, environment, and climate protection plans with land use plans; and
 - Demonstrate that communities can achieve the qualities of privacy, community, and contact with nature without degrading the natural environment or generating unacceptable environmental costs in terms of congestion, use of natural resources, or pollution.
- Additional measures may be taken to substantially reduce the air emissions identified above. These measures include:
 - **Constructing with only energy efficient products.** Energy Star qualified products are up to 30% more energy efficient. Savings come from building envelope upgrades, high performance windows, controlled air infiltration, upgraded heating and air conditioning systems, tight duct systems and upgraded water-heating equipment. Every percentage of energy efficiency translates into a percent reduction in pollution. The Energy Star Program is excellent way to save on energy costs and reduce air pollution.
 - **Offering geothermal and/or photo voltaic energy options.** These systems can significantly reduce emissions from electrical generation, and from the use of oil or gas heating equipment.
 - **Providing tie-ins to the nearest bike paths and links to any nearby mass transport system.** These measures can significantly reduce mobile source emissions. **For every vehicle trip that is replaced by the use of a sidewalk, a bike path or mass transit, 7 pounds of VOC and 11.5 pounds of NOx are reduced each year.**
 - **Using retrofitted diesel engines during construction.** This includes equipment that are on-site as well as equipment used to transport materials to and from site.
 - **Using pre-painted/pre-coated flooring, cabinets, fencing, etc.** These measures can significantly reduce the emission of VOCs from typical architectural coating operations.
 - **Planting trees in vegetative buffer areas.** Trees reduce energy emissions by cooling during the summer and by providing wind breaks in the winter, thereby reducing air conditioning needs by up to 30 percent and saving 20 to 50 percent on fuel costs.

This is a partial list, and there are additional things that can be done to reduce the impact of the development. The applicant should submit a plan to the DNREC DAQ which address the above listed measures, and that details all of the specific emission mitigation measures that will be incorporated into the Showfield development.

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

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

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

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

Sincerely,

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

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

CC: City of Lewes
Sussex County