



June 21, 2006

Mr. Ring Lardner  
Davis, Bowen & Friedel  
23 North Walnut Street  
Milford, DE 19963

RE: PLUS review – PLUS 2006-05-05; Sloan Property/Erb Farm

Dear Mr. Lardner:

Thank you for meeting with State agency planners on May 24, 2006 to discuss the proposed plans for the Sloan Property project to be located on the south side of Frederica, west of Market Street.

According to the information received, you are seeking a rezoning of 146 acres from AR-1 to R-2 for a 335 unit planned unit development.

The developers are proposing to annex the balance of a 146 acre parcel into the Town of Frederica. Upon annexation the entire parcel is to be zoned R-2 and be developed as a 335 unit development. At the July 27, 2005 PLUS meeting (PLUS review 2005-07-19) you stated that this property had been annexed into the Town of Frederica in June 2005; however, this office has not received a Plan of Services form which is required to be submitted to this office before the annexation is considered to be complete under the provisions of the Delaware Code. Our office has been working with the Town and the Department of Health and Social Services on some outstanding issues related to the Plan of Services and we expect those issues to be resolved in the near term future.

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 upon annexation the Town of Frederica will be the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the Town.

### **Executive Summary**

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

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

- This project is in Investment Level 2, which is where the State supports infill, redevelopment, and new development projects such as this one. It is expected that this project will be annexed into the Town of Frederica and developed under their codes and ordinances.
- Our office has no objections to the proposed development, and commends the designers and owners for their site design. The design incorporates housing that should integrate well into the street pattern and architectural styles of the Town. In addition, the design provides superior environmental protections and buffer widths to protect the water quality in the Murderkill River.
- The developer is to be commended for his offer to consider long term preservation of the tidal wetlands on the site through deed restrictions, a conservation easement, or designation as a nature preserve through DNREC. We encourage the developer to follow up with DNREC to learn about the benefits of these various options.

### **Street Design and Transportation**

- DelDOT is encouraged that the developer is taking the initiative to contact the adjoining elementary school about the potential for a pedestrian connection between the school and their development and has already contacted DART First State regarding access to transit. DelDOT appreciates the developer's efforts in these regards.
- The developer has completed a traffic impact study for this project, with an assumed use of 384 single-family detached houses. DelDOT received it on

March 20, 2006; they are working with the developer to resolve the issues they have identified; and anticipate commenting to the Town on the study in mid to late June.

- DelDOT has several comments on the proposed street layout:
  - a) While the proposed grid layout is consistent with a neo-traditional development, and indeed with the traditional layout of the existing town streets, its effectiveness as a neo-traditional project is diminished by the fact that initially there would be only two access points to the larger street network and in the future there would be no more than four such points. We recommend that two additional stub streets be provided to the lands of Sandbox, LLC.
  - b) Several blocks of street along the northwest and west edges of the development do not directly serve any houses and are separated from the adjoining properties by only a thin buffer. Such an arrangement seems inefficient and could promote speeding along this street. We suggest that the developer consider a layout that would place lot fronts along more of this street.
  - c) It is recommended that the developer design traffic calming measures into the street layout to discourage speeding. By including them in the design, the developer can take better advantage of horizontal measures, such as chicanes and neckdowns, and can make them features in the streetscape. Horizontal measures also tend to be better received by emergency personnel than vertical measures such as speed humps.

### **Natural and Cultural Resources**

- According to the Statewide Wetland Mapping Project (SWMP) mapping, tidally-influenced palustrine wetlands were mapped along most of the eastern boundary and in most of the southeastern portion of this project. DNREC recognizes that the developers meet and exceed the 100-foot riparian buffer from all streams and wetlands required by the Town of Frederica to mitigate impacts of development and homeowner encroachment.
- This project is located directly adjacent to sensitive headwater or near headwater riparian wetlands associated with Ash Gut, greatly increasing the probability of harmful impacts to surface and groundwater quality of all waters within the greater Murderkill River watershed, and reducing the probability that the State will achieve the required TMDL nutrient reductions. In recognition of this concern, the Watershed Assessment Section appreciates that the applicant will be

preserving the existing forested buffer. The section also commends the developer for meeting and exceeding the recommended 100 foot riparian buffer to protect the water and habitat quality of this waterway and its wetlands.

- The DNREC Water Supply Section has determined that the northern edge of the proposed development falls within an area of excellent ground-water recharge (see following map and attached map). The proposed development would change the total impervious cover from 0% to approximately 29.95% in proposed development area. The proposed development area impacts the excellent ground water recharge area. The numbers were provided by the developer on the PLUS application.

DNREC Water Supply Section recommends that the portion of the new development within the excellent recharge area not exceed 20% impervious cover. Further, 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.

The plans for the proposed development do not show impervious cover in the excellent ground-water recharge area but they do show two features. These features are in the excellent ground-water recharge area on the north side of the proposed development. These features are not labeled and a legend is not provided, leaving them to interpretation. They appear to be either storm water management ponds or berms. If possible, this area should be left as open space. The construction of either of these features has the potential to contaminate ground water beneath this excellent recharge area. Relocating these features will reduce the amount of excellent recharge area that is impacted by development.

- Significant portions of the property are in the 100-year floodplain. The site design protects the floodplain area in its entirety. This avoids increased density in the floodplain, which can lead to increased property damage and encroachments which result in increased flood heights.
- According to the DNREC database the following species are located within or adjacent to the project site:

Barred Owl (*Strix varia*)-State Rank S2, Global Rank G5

Bronze copper (*Lycaena hyllus*)-State Rank S2, Global Rank G4

American brook lamprey (*Lampetra appendix*)-State Rank S2, Global Rank G4

In addition, there is a Bald Eagle nest on the Murderkill River downstream from this site, and eagles likely utilize the forested riparian area within the project site for roosting and foraging.

There are numerous other large developments, on-going and proposed, along the Murderkill River in this general vicinity and cumulative impacts are of significant concern. Therefore, maintaining the existing forested buffer along the Murderkill River is especially important to reduce impacts to rare species and to preserve water quality. According to the application and site plan, the existing forested buffer is going to remain intact. To ensure that there are no impacts to these species, the forested area should be placed in some form of permanent conservation so that future clearing is not permitted.

- The proposed project is across the river from the Milford Neck Wildlife Area, managed by the Division of Fish and Wildlife. Developments that displace wildlife often put greater pressure on wildlife areas and increase human-animal conflicts. There are waterfowl blinds in the river adjacent to the project site and the developer should be aware (and disclose to potential buyers) that the property in question will be subject to the effects of legal hunting activities in the Wildlife Area, especially during waterfowl season. For more information, contact the Regional Wildlife Biologist, Wayne Lehman at 302-653-2079 prior to initiation of construction activities.
- Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited and the applicant may want to contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not buffer between lot lines and the adjacent property line.
- The Office of Nature Preserves appreciates the efforts of the applicant to design a site plan in such a way as to maintain the integrity of the forested/riparian area. This area is currently a State Resource Area and is on the State's Natural Area Inventory. It is with this in mind that the Office of Nature Preserves strongly urges the applicant to consider donating the forested/riparian area to the state as part of the Murderkill River Nature Preserve. Please feel free to contact the Land Preservation Office at 302-739-9235 for further information.

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

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

This project is located in Investment Level 2 according to the *State Strategies for Policies and Spending*. This site is located partially in the Town of Frederica and partially in Kent County (inside the Growth Zone). Annexation of the entire parcel into Frederica is expected. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas. Our office has no objections to the proposed annexation and development, and commends the designers and owners for their site design. The design incorporates housing that should integrate well into the street pattern and architectural styles of the Town. In addition, the design provides superior environmental protections and buffer widths to protect the water quality in the Murderkill River and important habitat adjacent to the river. The proposed annexation and development of this project must be completed in accordance with the relevant Town codes and ordinances.

The developer is to be commended for his offer to consider long term preservation of the tidal wetlands on the site through deed restrictions, a conservation easement, or designation as a nature preserve through DNREC. We encourage the developer to follow up with DNREC to learn about the benefits of these various options.

A Plan of Services has not been accepted for this annexation. Our office must accept the Plan of Services as complete for the annexation to proceed under the provisions found in Title 22, Section 101 of the Del. C. Please be advised that our office has received correspondence from the Delaware Office of Drinking Water which details some concerns regarding the Town's water utility. Our office has been working with the Town and the Department of Health and Social Services on some outstanding issues related to the Plan of Services and we expect those issues to be resolved in the near term future. These issues must be resolved prior to our acceptance of the Plan of Services.

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

The project parcel contains three prehistoric archaeological sites (K-636, K-766, & K-767) and is adjacent to the Frederica Historic District (K-322) which is listed in the National Register of Historic Places. The development plans show a sufficient buffer and landscaping to block any visual or noise effects this development could have on the historic district. One site is within the protected wetlands area. However, the other two sites will be adversely affected by this project.

The Division of Historical and Cultural Affairs requests that the owner/developer allow them the opportunity to examine these sites prior to any construction activities and perhaps to do some testing to give us a better idea of the nature of these sites.

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

- 1) DelDOT is encouraged that the developer is taking the initiative to contact the adjoining elementary school about the potential for a pedestrian connection between the school and their development and has already contacted DART First State regarding access to transit. DelDOT appreciates the developers efforts in these regards.
- 2) The developer has completed a traffic impact study for this project, with an assumed use of 384 single-family detached houses. DelDOT received it on March 20, 2006; they are working with the developer to resolve the issues they have identified; and anticipate commenting to the Town on the study in mid to late June.
- 3) DelDOT has several comments on the proposed street layout:
  - a) While the proposed grid layout is consistent with a neo-traditional development, and indeed with the traditional layout of the existing town streets, its effectiveness as a neo-traditional project is diminished by the fact that initially there would be only two access points to the larger street network and in the future there would be no more than four such points. We recommend that two additional stub streets be provided to the lands of Sandbox, LLC.
  - b) Several blocks of street along the northwest and west edges of the development do not directly serve any houses and are separated from the adjoining properties by only a thin buffer. Such an arrangement seems inefficient and could promote speeding along this street. We suggest that the developer consider a layout that would place lot fronts along more of this street.
  - c) It is recommended that the developer design traffic calming measures into the street layout to discourage speeding. By including them in the design, the developer can take better advantage of horizontal measures, such as chicanes and neckdowns, and can make them features in the streetscape. Horizontal measures also tend to be better received by emergency personnel than vertical measures such as speed humps.
- 4) The developer's site engineer should contact Mr. Brad Herb, the DelDOT project manager for Kent County, regarding their specific requirements for access. He may be reached at (302) 266-9600.

**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. The Department recognizes the developer and the site designers for producing an appropriate site design that protects the sensitive resources on the site. The spirit of stewardship demonstrated on this project is to be commended.

**Soils**

Based on the Kent County soil survey, Sassafras, Rumford, Johnston and Swamp were mapped in the immediate vicinity of the proposed project. Sassafras and Rumford are well-drained upland soils that, generally, have few limitations for development. Johnston is a very poorly-drained wetland associated (hydric) floodplain soil that has severe limitations for development. Swamp is a very poorly-drained wetland associated (hydric) soil that has the highest severity level for development.

**Wetlands**

According to the Statewide Wetland Mapping Project (SWMP) mapping, tidally-influenced palustrine wetlands were mapped along most of the eastern boundary and in most of the southeastern portion of this project. These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Project

plans do not indicate any direct impacts to wetlands; however, cumulative and secondary impacts to wetlands are possible. DNREC recognizes that the developer has maintained and exceeded the recommended 100-foot vegetated buffer from all streams and wetlands to mitigate impacts of development and homeowner encroachment.

This project is located directly adjacent to sensitive headwater or near headwater riparian wetlands associated with Ash Gut, greatly increasing the probability of harmful impacts to surface and groundwater quality of all waters within the greater Murderkill River watershed, and reducing the probability that the State will achieve the required TMDL nutrient reductions. Headwater streams and their associated wetlands are important for the protection of water quality and the maintenance/integrity of the ecological functions throughout the length of the stream, including the floodplain system downstream. In recognition of this concern, the Watershed Assessment Section appreciates that the applicant intends to preserve the existing forested buffer, and exceeds our recommended 100 foot buffer from streams and wetland to protect the water and habitat quality of this waterway and its wetlands.

### **Impervious Cover**

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 30 percent. However, given the scope and density of this project, said estimate is likely inaccurate. The applicant should recognize that all forms of constructed surface imperviousness (i.e., rooftops, sidewalks and roads) should be accounted for when calculating surface imperviousness; otherwise, an inaccurate assessment of this project's environmental impacts is inevitable. It is strongly advised that this figure be recalculated to accurately reflect these concerns.

Studies link increases in impervious cover to decreases in water and habitat quality. Studies have also firmly established that irreversible declines in water and habitat quality begin once aggregate watershed surface imperviousness exceeds 10 percent. Based on analyses of 2002 aerial photography by the University of Delaware, the Murderkill watershed had about 8.1 percent impervious cover. Although this data is about 4 years old and likely an underestimate, it underscores the importance of a proactive strategy to mitigate for predictable and likely cumulative environmental impacts. Since the amount of imperviousness generated by this project is likely to be much higher than the desirable watershed threshold of 10 percent, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings

are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

### **TMDLs**

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Murderkill watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a “water quality limited water body” can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the Murderkill watershed, a post-development TMDL reduction level of 50 and 30 percent will be required for nitrogen and phosphorus, respectively.

### **TMDL Compliance through the PCS**

As stated above, Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Murderkill Watershed. The TMDL calls for a 50% reduction for nitrogen and 30% for phosphorus from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. According to this tool, your development plan, as proposed, will reduce nitrogen by 67 % and maintains the phosphorus loads of this parcel. Additional reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers along watercourses, increasing passive, wooded open space, using enhanced nutrient removal wastewater technologies, and the use of stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

### **Water Resource Protection Areas**

The DNREC Water Supply Section has determined that the northern edge of the proposed development falls within an area of excellent ground-water recharge (see following map and attached map).

Excellent recharge areas are near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas. Kent County has approximately 14 percent of its total area classified as “excellent” recharge.

The proposed development would change the total impervious cover from 0% to approximately 29.95% in proposed development area. The proposed development area

impacts the excellent ground water recharge area. The numbers were provided by the developer on the PLUS application.

DNREC Water Supply Section recommends that the portion of the new development within the excellent recharge area not exceed 20% impervious cover. Further, 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.

The plans for the proposed development do not show impervious cover in the excellent ground-water recharge area but they do show two features. These features are in the excellent ground-water recharge area on the north side of the proposed development. These features are not labeled and a legend is not provided, leaving them to interpretation. They appear to be either storm water management ponds or berms. If possible, this area should be left as open space. The construction of either of these features has the potential to contaminate ground water beneath this excellent recharge area. Relocating these features will reduce the amount of excellent recharge area that is impacted by development.

Kent County Ordinances support these recommendations. The Kent County Code Chapter 187 (Appendix F) requires preservation of excellent ground-water recharge areas and wellhead protection areas by conserving open spaces during land development. This ordinance will not be applicable upon annexation, but the applicant is encouraged to consult this section for guidance.

For more information refer to:

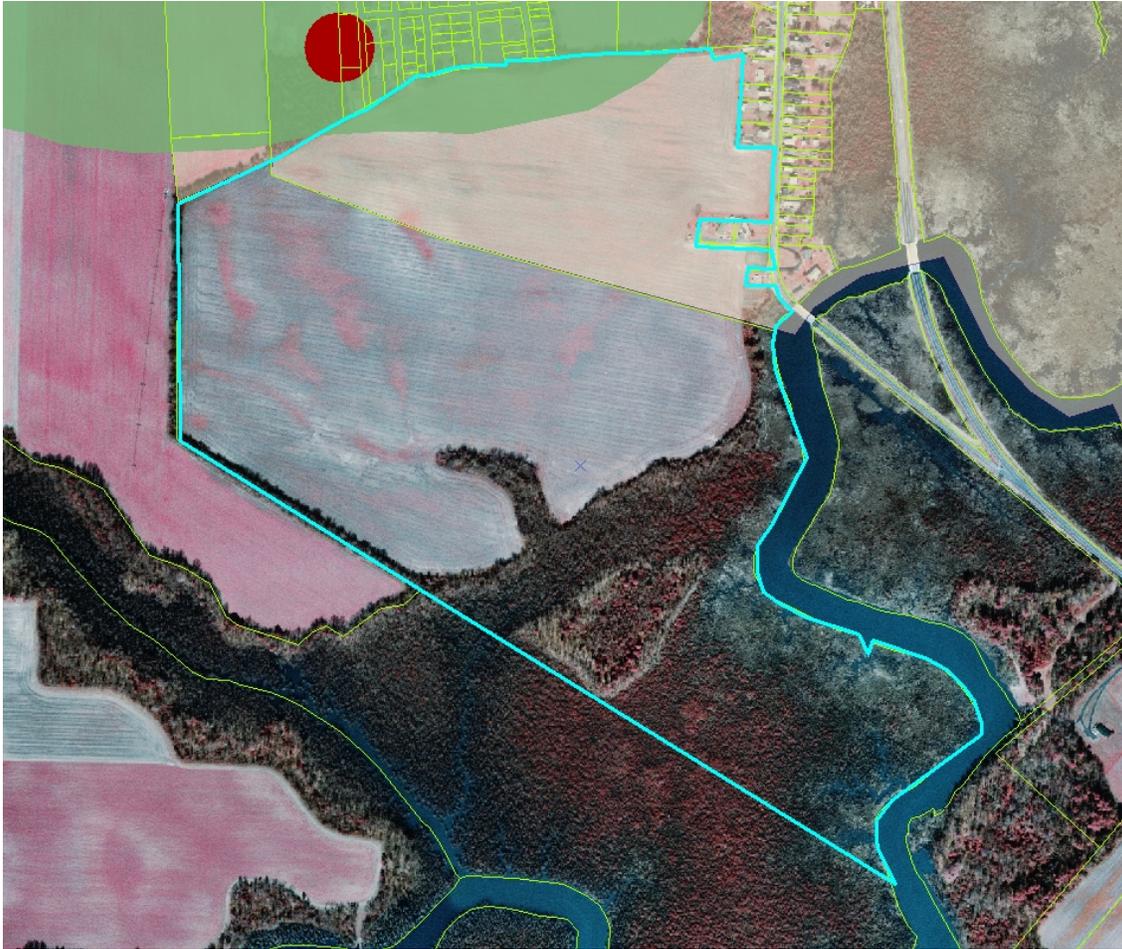
Source Water Protection Guidance Manual for the Local Governments of Delaware

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

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

**Sloan Property/Erb Farm** Excellent recharge is shown in green and affected parcels outlined in light blue.



### **Water Supply**

The project information sheets state water will be provided to the project by the Town of Frederica via a central water system. Our records indicate that the project is located within the public water service area granted to the Town of Frederica under Certificate of Public Convenience and Necessity 93-CPCN-06.

Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction

of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising.

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

### **Sediment and Erosion Control/Stormwater Management**

Requirements:

1. Land disturbing activities in excess of 5,000 square feet are regulated under the Delaware Sediment and Stormwater Regulations. A detailed sediment and stormwater management plan must be reviewed and approved by the Kent Conservation District prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place. The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to the Kent Conservation District. Construction inspection fees based on developed area and stormwater facility maintenance inspection fees based on the number of stormwater facilities are due prior to the start of construction. Please refer to the fee schedule for those amounts.
2. The following notes must appear on the record plan:
  - The Kent Conservation District reserves the right to enter private property for purposes of periodic site inspection.
  - The Kent Conservation District reserves the right to add, modify, or delete any erosion or sediment control measure, as it deems necessary.
  - A clear statement of defined maintenance responsibility for stormwater management facilities must be provided on the Record Plan.
3. Ease of maintenance must be considered as a site design component and a maintenance set aside area for disposal of sediments removed from the basins during the course of regular maintenance must be shown on the Record Plan for the subdivision.

4. All drainage ways and storm drains should be contained within drainage easements and clearly shown on the plan to be recorded by Kent County.
5. A soils investigation supporting the stormwater management facility design is required to determine impacts of the seasonal high groundwater level and soils for any basin design.

Comments:

1. The designer is encouraged to consider the conservation design approach and limit the amount of tree clearing required for the development of the site. It is recognized that the existing trees on the site are to remain.
2. Access to the proposed stormwater facility must be provided for periodic maintenance. This access should be at least 12 feet wide to leading to the facility and around the facility's perimeter.
3. It is recommended that the stormwater management areas be incorporated into the overall landscape plan to enhance water quality and to make the stormwater facility an attractive community amenity.
4. A letter of no objection to re-recording will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.
5. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.
6. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.

**Drainage**

This project is within the Murderkill River Watershed, a designated critical area, with a promulgated Total Maximum Daily Load (TMDL). Existing riparian buffers should be preserved to aid in the reduction of nutrients, sediment, and other pollutants. The proposed site design preserves the riparian area, as required by the Town of Frederica's ordinances.

The Drainage Program does not have a clear understanding how stormwater will be conveyed to the stormwater management areas. The Drainage Program requests that the routing of major stormwater pipes through yards be prohibited.

The Drainage Program encourages the elevation of yards to direct water towards the streets or alleyways where storm drains are accessible for maintenance. Decks, sheds, fences, and kennels should not be placed along the storm drain or near the catch basin. Deed restrictions or easements recorded on the deed, should be placed on the property to ensure maintenance access.

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

All drainage easements should be recorded on deeds.

The Drainage Program encourages the use of stormwater infiltration when possible.

The Drainage Program requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project.

For the further enhancement of water quality of the Murderkill River watershed, the Drainage Program encourages additional widths of vegetated buffers on this project.

### **Floodplains**

Significant portions of the property are in the 100-year floodplain. The site design protects the floodplain area in its entirety. This avoids increased density in the floodplain, which can lead to increased property damage and encroachments which result in increased flood heights.

### **Open Space**

In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

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**

According to the DNREC database the following species are located within or adjacent to the project site:

Barred Owl (*Strix varia*)-State Rank S2, Global Rank G5

Bronze copper (*Lycaena hyllus*)-State Rank S2, Global Rank G4

American brook lamprey (*Lampetra appendix*)-State Rank S2, Global Rank G4

State Rank: S2- very rare within the state (6 to 20 occurrences)

Global Rank: G4 - apparently secure globally but uncommon in parts of its range; G5 - secure on a global basis but may be uncommon locally;

In addition, there is a Bald Eagle nest on the Murderkill River downstream from this site, and eagles likely utilize the forested riparian area within the project site for roosting and foraging.

There are numerous other large developments, on-going and proposed, along the Murderkill River in this general vicinity and cumulative impacts are of significant concern. Therefore, maintaining the existing forested buffer along the Murderkill River is especially important to reduce impacts to rare species and to preserve water quality. According to the application and site plan, the existing forested buffer is going to remain intact. To ensure that there are no impacts to these species, the forested area should be placed in some form of permanent conservation so that future clearing is not permitted.

### **State Natural Heritage Site**

Because of the existence of the Murderkill River Natural Area and the species listed above, this project lies within a State Natural Heritage Site. 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.

### **Milford Neck Wildlife Area**

The proposed project is across the river from the Milford Neck Wildlife Area, managed by the Division of Fish and Wildlife. Developments that displace wildlife often put greater pressure on wildlife areas and increase human-animal conflicts. There are waterfowl blinds in the river adjacent to the project site and the developer should be aware (and disclose to potential buyers) that the property in question will be subject to the effects of legal hunting activities in the Wildlife Area, especially during waterfowl

season. For more information, contact the Regional Wildlife Biologist, Wayne Lehman at 302-653-2079 prior to initiation of construction activities.

### **Potential Hunting Issue**

Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited and the applicant may want to contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not buffer between lot lines and the adjacent property line.

### **Nuisance Waterfowl**

Stormwater management ponds 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 lawns 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 (50 feet) 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, 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.

### **Mosquito Control**

Development projects that result in increased housing densities within 2 miles of large expanses of salt marshes or brackish wetlands, or within 1 mile of large expanses of freshwater wetlands, can often lead to increased demands for mosquito control services, going beyond what the 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.

### **State Resource Areas/Natural Areas**

The Office of Nature Preserves appreciates the efforts of the applicant to design a site plan in such a way as to maintain the integrity of the forested/riparian area. This area is currently a State Resource Area and is on the State's Natural Area Inventory. State Resource Area lands include any open lands characterized by great natural scenic beauty, or whose existing openness, natural condition or present state of use, if retained, would maintain important recreational areas and wildlife habitat, and enhance the present or potential value of abutting or surrounding urban development, or would maintain or enhance the conservation of natural or scenic resources, including environmentally sensitive areas. Natural Areas involve areas of land or water, or of both land and water, whether in public or private ownership, which either retain or have reestablished its natural character (although it need not be undisturbed), or has unusual flora or fauna, or has biotic, geological, scenic or archaeological features of scientific or educational value. The Burton-Derrickson Tract of the Murderkill River Nature Preserve abuts the south western portion of the site and the West Farm Tract of the Murderkill River Nature Preserve is located to the south east of this site. It is with this in mind that the Office of Nature Preserves strongly urges the applicant to consider donating the forested/riparian area to the state as part of the Murderkill River Nature Preserve. Please feel free to contact the Land Preservation Office at 302-739-9235 for further information.

### **Underground Storage Tanks**

There is one inactive LUST site(s) located near the proposed project:

Former Robbins Hardware, Facility # 1-000593, Project # K0004047

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

### 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 25.7 tons (51,419.0 pounds) per year of VOC (volatile organic compounds), 21.3 tons (42,571.5 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 15.7 tons (31,410.0 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 1.4 ton (2,796.0 pounds) per year of fine particulates and 2,150.6 tons (4,301,134.2 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 10.4 tons (20,739.6 pounds) per year of VOC (volatile organic compounds), 1.1 ton (2,282.0 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 0.9 ton (1,893.7 pounds) per year of SO<sub>2</sub> (sulfur dioxide), 1.2 ton (2,443.8 pounds) per year of fine particulates and 42.0 tons (84,073.8 pounds) per year of CO<sub>2</sub> (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 4.1 tons (8,219.7 pounds) per year of NO<sub>x</sub> (nitrogen oxides), 14.3 tons (28,590.2 pounds) per year of SO<sub>2</sub> (sulfur dioxide) and 2,108.5 tons (4,217,060.4 pounds) per year of CO<sub>2</sub> (carbon dioxide).

	VOC	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Mobile	25.7	21.3	15.7	1.4	2150.6
Residential	10.4	1.1	0.9	1.2	42.0
Electrical Power		4.1	14.3		2108.5
TOTAL	36.1	26.5	30.9	2.6	4301.1

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 4.1 tons of nitrogen oxides per year and 14.3 tons of sulfur dioxide per year.

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

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

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

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

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

**State Fire Marshal’s Office – Contact: John Rossiter 739-4394**

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

- a. **Fire Protection Water Requirements:**
  - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly and Townhouses)

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

c. **Accessibility**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Market Street and Jackson Avenue 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)
- Townhouse 2-hr separation wall details shall be shown on site plans
- 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](http://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 proposed development. The *Strategies for State Policies and Spending* encourages responsible development in areas within Investment Level 2 and 3.

The northern edge of this site has areas designated as “excellent” and “good” recharge areas. DNREC has mapped all ground-water recharge potential areas. Excellent and good ratings have important ground-water recharge qualities. Maintaining pervious cover in these areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure an adequate and 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. The developer should make every attempt to minimize the impact on these important areas.

Additionally, this site overlaps with the State’s Green Infrastructure Investment Strategy Plan. The Natural Area layer is present on this site; this designation identifies areas that possess unique natural features that are valuable for preservation.

**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 Karen Horton 739-4263**

The proposed project is a rezoning of 146 acres from AR-1 to R-2 for a 335-unit subdivision. The proposed development is located on the west side of Market Street, south of Frederica and adjacent to the Murderkill River. According to the State Strategies Map, the proposal is located in an Investment Level 2 area. DSHA supports this proposal because residents will have proximity to services, markets, and employment opportunities. Furthermore, the proposal targets units for first time homebuyers. According to the most recent real estate data collected by DSHA, the average home price in Kent County is \$189,500. However, families earning respectively 80%-100% of Kent County’s median income only qualify for mortgages of \$138,205-\$176,741, thus creating an affordability gap of \$51,295-\$12,759. The provision of units within reach of families earning at least 80%-100% of Kent County’s median income would help increase housing opportunities for first time homebuyers.

**Department of Education – Contact: John Marinucci 739-4658**

This proposed development is within the Lake Forest School District but also borders the Milford School District, and as such may generate incremental impact on the Milford School District. DOE offers the following comments on behalf of the Lake Forest School District.

1. Using the DOE standard formula, this development will generate an estimated 168 students.
2. DOE records indicate that the Lake Forest School Districts' *elementary schools are at or beyond 100% of current capacity* based on September 30, 2005 elementary enrollment.

3. DOE records indicate that the Lake Forest School Districts' *secondary schools are very close to 100% of current capacity* based on September 30, 2005 secondary enrollment.
4. The Superintendent of Lake Forest School District has communicated the district's lack of capacity given the number of planned and recorded residential sub divisions within district boundaries.
5. This development will create additional elementary and secondary student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Lake Forest School District Administration to address the issue of school over-crowding that this development will exacerbate.
6. DOE requests developer work with the Lake Forest 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.

**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,



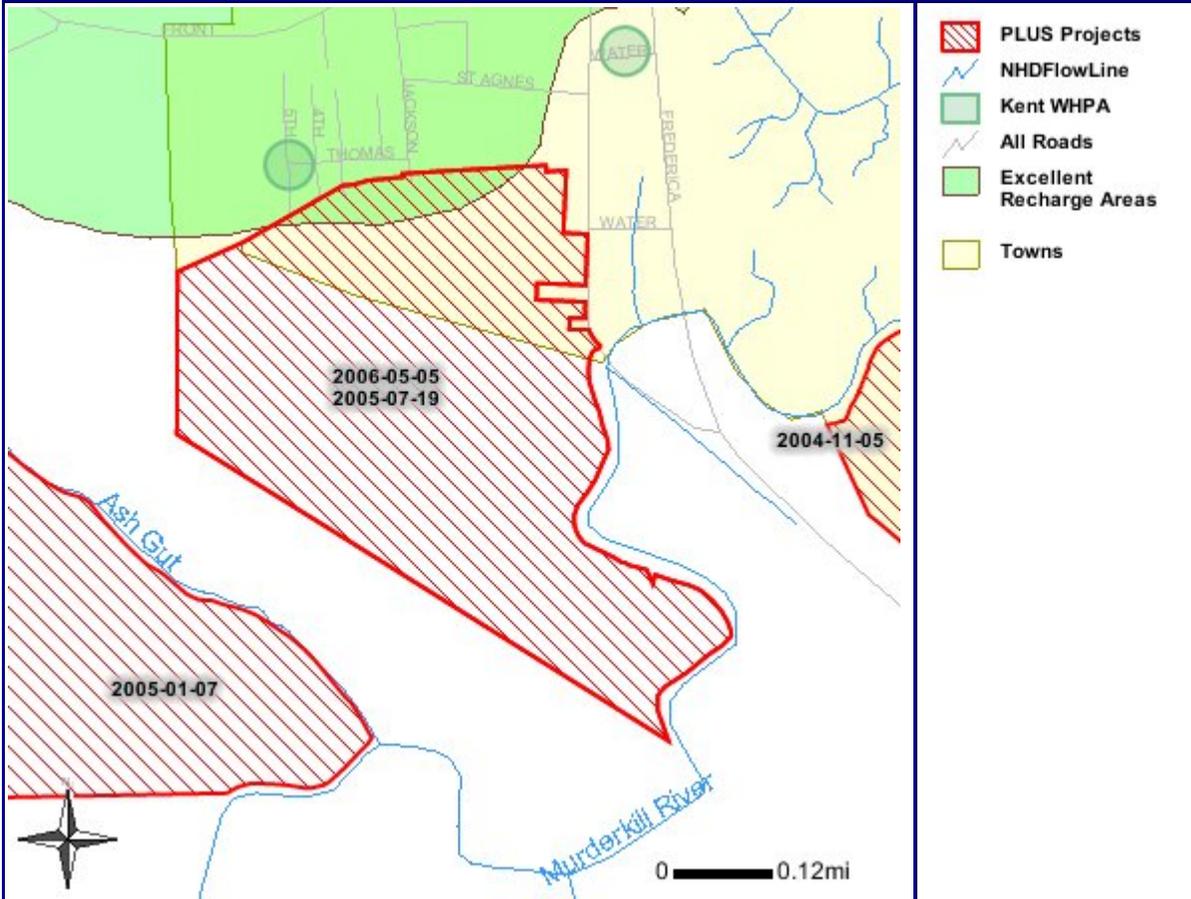
Constance C. Holland, AICP  
Director

CC: Kent County  
Town of Frederica



# Sloan Property - Erb Farm

2006-05-05



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

