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

October 18, 2006

Kenneth Christenbury
Axiom Engineering, LLC
18 Chestnut Street
Georgetown, DE 19947

RE: PLUS review – PLUS 2006-09-10; North Georgetown RPC

Dear Mr. Christenbury:

Thank you for meeting with State agency planners on September 27, 2006 to discuss the proposed plans for the North Georgetown Residential Planned Community project to be located at Route 18, approximately 1,000 feet west of Route 113.

According to the information received, you are seeking a rezoning from AR-1 to MR/RPC for a planned community of 507 residential units and 113,700 sq. ft. of commercial space on 108 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 Town of Georgetown is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the town.

Executive Summary

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

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

State Strategies/Project Location

The Office of State Planning and Coordination recognizes that the proposed develop falls within an investment Level 2 / Level 3 of the State Strategies for Policy and Spending and is one that encourages growth within areas that may support a project of this scope and design. To further to improve upon this project, this office would encourage the developer to work with both the Department of Natural Resources and Environmental Control and the Department of Agriculture to address the many natural resource concerns associated with this parcel as well as the concerns expressed by this Office and the Department of Agriculture to minimize the impact to the permanently preserved lands to the northwest of this project. Finally, this office would ask the developer that if this project demonstrates a significant change based upon the wetlands delineation performed in support of this project, that you coordinate your efforts with this office and members of the PLUS review committee to ensure a successful and timely project completion.

Street Design and Transportation

- A traffic impact study (TIS) will be required for this development. The scope was set in June 2006 (See enclosed memorandum dated October 3, 2006.). When DelDOT receives the completed TIS they will review it and send recommendations to the Town regarding off-site improvements that should be required of the developer. DelDOT requests that the Town withhold plan approvals pending receipt of those recommendations.

- Route 18, where the proposed development would have access, is a principal arterial highway. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 50 feet from the centerline on principal arterial roads. Therefore they will require right-of-way dedication along the frontage to provide any additional width needed from this project.

- While the internal streets will not be State-maintained, DelDOT recommends that several features of the concept plan be revised:

    a) The northernmost commercial driveway in the development is shown offset from an east-west street. The driveway, or perhaps the street, should be realigned to create a four-way intersection.

b) The street leading in from the Wal-Mart shopping center ends at a four-way intersection where the west leg would be an existing T turnaround. If there is no need for it, we suggest that the turnaround be eliminated to create a three-way intersection.

c) At the next intersection south of the one just discussed, the west leg is skewed and slightly offset from the east leg. We recommend that it be realigned.

d) There are two north-south collector roads running through the site. Several aspects of the southernmost road connecting them need to be addressed:

i) The road has several driveways on it and appears to be narrow. We would expect it to carry a significant volume of traffic. From discussions at the PLUS meeting, we understand that the road will be closed to through traffic, thus addressing our concerns about the driveways.

ii) The intersection at the west end is skewed, located on a curve and offset from another intersection, which in turn would appear to have inadequate sight distance due to the curve just mentioned. The road closure just mentioned addresses our concern about the offset, but not our concern about sight distance.

- At the east end of the road, there is a three-way intersection proposed adjacent to a four-way intersection. The road should be straightened and the three-way intersection eliminated.

Natural and Cultural Resources

- Palustrine forested and palustrine forested/scrub-shrub riparian wetlands were also mapped immediately adjacent to the Georgetown-Vaughn ditch, which bisects the south-central portion of the combined parcels. The Georgetown-Vaughn ditch is a headwater tributary that ultimately discharges to the Deep Creek and the Nanticoke River watersheds. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. The developer should maintain a 100-foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.

- This proposed development shows stormwater management ponds within the excellent ground water recharge area. The construction phase of this type of pond 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. 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.

- Maximum Construction/Disposal rights-of-way are 35 feet on the left and 77 feet on the right measured from the centerline and considered looking upstream. The proposed plan shows paved roads within these areas. Paved roads are considered permanent obstructions. The plan needs to be revised to reflect the existing rights-of-way.

- DNREC has never surveyed this site; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at or adjacent to this project site. Buteo lineatus (Red-Shouldered Hawk), a State-Rare bird, occurs within a forested area southeast of this site and it could occur within the project area as well. This species (as well as many others) depends on larger, connected forested areas for breeding and foraging and efforts to reduce forest fragmentaton should be made.

Site Visit Request

- In order to provide more informed comments and to make reasonable recommendations, our program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project

- A greater effort to preserve forest should be made and this could be accomplished by:

    1. Reducing the excessive number of stormwater management ponds being proposed. Also, relocating all stormwater management ponds that will require tree clearing to a non-forested portion of the project area or utilize an alternative method of stormwater management. It does not make sense to remove trees to create ponds considering the function of trees in flood abatement and erosion control. Most of these ponds are also too close to

adjacent wetland areas. There should be at least a 100ft buffer between the pond and any wetland area.

2. Reducing the number of lots and infrastructure and clustering the remaining features primarily in non-forested portions of the project area.

3. Leaving a forest intact is more beneficial to wildlife than clearing. However, if clearing occurs despite this recommendation, trees should not be cleared from April 1st to July 31st to reduce impacts to nesting birds and other wildlife species that utilize forests for breeding. This clearing recommendation would only protect those species during the breeding season, because once trees are cleared the result is an overall loss of habitat.

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

Office of State Planning Coordination – Contact: Bryan Hall 739-3090

The Office of State Planning and Coordination recognizes that the proposed develop falls within an investment Level 2 / Level 3 of the State Strategies for Policy and Spending and is one that encourages growth within areas that may support a project of this scope and design. To further to improve upon this project, this office would encourage the developer to work with both the Department of Natural Resources and Environmental Control and the Department of Agriculture to address the many natural resource concerns associated with this parcel as well as the concerns expressed by this Office and the Department of Agriculture to minimize the impact to the permanently preserved lands to the northwest of this project. Finally, this office would ask the developer that if this project demonstrates a significant change based upon the wetlands delineation performed in support of this project, that you coordinate your efforts with this office and members of the PLUS review committee to ensure a successful and timely project completion.

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

Nothing is known within this parcel. Most of the area has soils that are too wet for prehistoric-period archaeological sites to be found there, although there is some medium potential for a site in the northwest corner of the area. Beers Atlas of 1868 shows the I. Russell House here, but does not mark the actual spot. Judging by the soils and the appearance of a house on the USGS 15' Millsboro topographic map of 1917, that house

was in the middle of the cleared area in the northwest part of the parcel. A house also appears on Seashore Hwy (Rt 18) near the current entrance into WalMart.

Small, rural, family cemeteries often are found in relation to historic farm complexes, such as the Russell House, usually a good distance behind or to the side of the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out, and the developer may want to hire an archaeological consultant to check for the possibility of a cemetery here. The Division of Historical and Cultural Affairs would have to have a copy of any archaeological report done for this purpose. They will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

The DHCA would appreciate an opportunity to look for archaeological sites in the cleared area of the parcel, if our work load and the developer's time table allow, and learn something about their location, nature, and extent prior to any ground-disturbing activities.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

2) A traffic impact study (TIS) will be required for this development. The scope was set in June 2006 (See enclosed memorandum dated October 3, 2006.). When DelDOT receives the completed TIS they will review it and send recommendations to the Town regarding off-site improvements that should be required of the developer. DelDOT requests that the Town withhold plan approvals pending receipt of those recommendations.

3) DelDOT's ongoing US 113 North South Study is a location study for a limited access highway between Milford and the Maryland Line. Several alignments are presently under consideration in the Georgetown area. At the TIS scoping meeting, DelDOT staff informed the developer's traffic engineer that the subject land is critical to the viability of the western bypass alternatives. The preservation of their viability continues to be very important to us. Because several engineering firms are involved in the development, DelDOT recommends that the developer's site engineer contact our manager for this project, Mr. Monroe Hite, for detailed information on the alignments. Mr. Hite can be reached at (302) 760-2120.

4) Route 18, where the proposed development would have access, is a principal arterial highway. DelDOT's policy is to require dedication of sufficient land to

provide a minimum right-of-way width of 50 feet from the centerline on principal arterial roads. Therefore they will require right-of-way dedication along the frontage to provide any additional width needed from this project.

5) While the internal streets will not be State-maintained, DelDOT recommends that several features of the concept plan be revised:

a) The northernmost commercial driveway in the development is shown offset from an east-west street. The driveway, or perhaps the street, should be realigned to create a four-way intersection.

b) The street leading in from the Wal-Mart shopping center ends at a four-way intersection where the west leg would be an existing T turnaround. If there is no need for it, we suggest that the turnaround be eliminated to create a three-way intersection.

c) At the next intersection south of the one just discussed, the west leg is skewed and slightly offset from the east leg. We recommend that it be realigned.

d) There are two north-south collector roads running through the site. Several aspects of the southernmost road connecting them need to be addressed:

j) The road has several driveways on it and appears to be narrow. We would expect it to carry a significant volume of traffic. From discussions at the PLUS meeting, we understand that the road will be closed to through traffic, thus addressing our concerns about the driveways.

ii) The intersection at the west end is skewed, located on a curve and offset from another intersection, which in turn would appear to have inadequate sight distance due to the curve just mentioned. The road closure just mentioned addresses our concern about the offset, but not our concern about sight distance.

iii) At the east end of the road, there is a three-way intersection proposed adjacent to a four-way intersection. The road should be straightened and the three-way intersection eliminated.

6) The developer's site engineer should contact our Subdivision Manager for Sussex County, Mr. John Fiori, regarding our specific requirements for road improvements and access. His review will include both of the existing site accesses as well as the proposed access. Mr. Fiori may be reached at (302) 760-2157.

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

Green Infrastructure

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

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

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

Soils

According to the Sussex County soil survey, Evesboro, Woodstown, Osier, Fallsington, and Pocomoke were mapped on subject parcel. Evesboro is an excessively well-drained upland soil that has moderate limitations on account of its rapid permeability. Woodstown is a moderately well-drained soil of low-lying uplands that has moderate limitations for development. Osier and Fallsington are poorly-drained wetland associated (hydric) soils that have severe limitations for development. Pocomoke is a very poorly-drained wetland associated (hydric) soil that has severe limitations for development.

Wetlands

Based on Statewide Wetland Mapping Project (SWMP) mapping, palustrine forested and palustrine forested/scrub-shrub wetlands were mapped over most of parcels proposed for development. Palustrine forested and palustrine forested/scrub-shrub riparian wetlands were also mapped immediately adjacent to the Georgetown-Vaughn ditch, which bisects the south-central portion of the combined parcels. The Georgetown-Vaughn ditch is a headwater tributary that ultimately discharges to the Deep Creek and the Nanticoke River watersheds. Wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. The developer should maintain a 100-foot vegetated buffer from the wetlands. There should not be any buildings or associated infrastructure within the buffer.

PLUS application materials indicate that wetlands have been delineated (presumably a field delineation). This delineation should be verified by the Army Corps of Engineers through the Jurisdictional Determination process. Please note that impacts to palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. In situations where the applicant believes that the delineated wetlands on their parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached by phone at 736-9763.

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

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

As noted previously, this parcel contains SWMP mapped headwater riparian wetlands. Headwater riparian 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 and/or water bodies further downstream. Since headwater streams are a major avenue for the deposition of nutrient-laden stormwater and sediment runoff to higher order water bodies, their protection deserves the highest priority. Studies have shown that one of the most effective methods to protect water quality is through establishment and/or retention of an adequately-sized upland buffer. Based on a literature review of existing buffer research by Castelle et al. (1994), an

adequately-sized buffer that effectively protects wetlands and streams, in most circumstances, is about 100 feet in width. In light of this research and the need to protect water and habitat quality, it is strongly recommended by the Watershed Assessment Section that the applicant maintain/establish a 100-foot upland buffer (planted in native vegetation) from the landward edge of all wetlands and water bodies (including all ditches).

Impervious Cover

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 50 percent. However, given the scope and density of this project, this estimate is potentially an **underestimate**. 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.

Since studies link increases in impervious cover to decreases in water quality, the applicant is strongly encouraged to pursue best management practices (BMPs) that can mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

ERES Waters

This project is located adjacent to receiving waters of the greater Nanticoke River designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State, and shall be protected and/ or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 5.6 of Delaware's "Surface Water Quality Standards" (as amended July 11, 2004), specify that all designated ERES waters and receiving tributaries develop a "pollution control strategy" to reduce non-point sources of pollutants through implementation of Best Management Practices (BMPs). Moreover, provisions defined in subsection 5.6.3.5 of same section, specially authorize the Department to mandate BMPs to meet standards for controlling the addition of pollutants and reducing them to the greatest degree achievable and, where practicable, implementation of a standard requiring no discharge of pollutants.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Deep Creek 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 greater Nanticoke watershed, "target-rate-nutrient reductions" of 30 and 50 percent will be required for nitrogen and phosphorus, respectively.

TMDL Compliance through the Pollution Control Strategy (PCS)

As indicated above, Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been proposed for the Deep Creek watershed. The TMDL calls for a 30 and 50% reduction in nitrogen and phosphorus from baseline conditions. A pollution control strategy will be used as a regulatory framework to ensure that these nutrient reduction targets are attained. The Department has developed an assessment tool to evaluate how proposed developments may reduce nutrients to meet the TMDL requirements. Additional nutrient 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 Water Supply Section has determined that a small portion of the southwestern corner of the proposed development falls within an excellent ground water recharge area (see following map and attached map). The review found no wellhead protection areas.

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. This proposed development shows stormwater management ponds within the excellent ground water recharge area.

The construction phase of this type of pond 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. 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.

The proposed development would change the total impervious cover from 0% to approximately 50%. These numbers are based on the total area and are not specific to the excellent recharge area. The developer provided the numbers on the PLUS application.

The Water Supply Section recommends that that portion of the new development within the excellent ground water recharge area not exceed 20% impervious cover. The purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in stormwater) and protect the quality and quantity of ground water and surface water supplies.

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 these areas, provided the applicant submits an environmental assessment recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than pre-development recharge when computed on an annual basis. Commonly, the applicant offsets the loss of recharge due to impervious cover by constructing recharge basins that convey relatively pure rooftop runoff for infiltration to ground water.

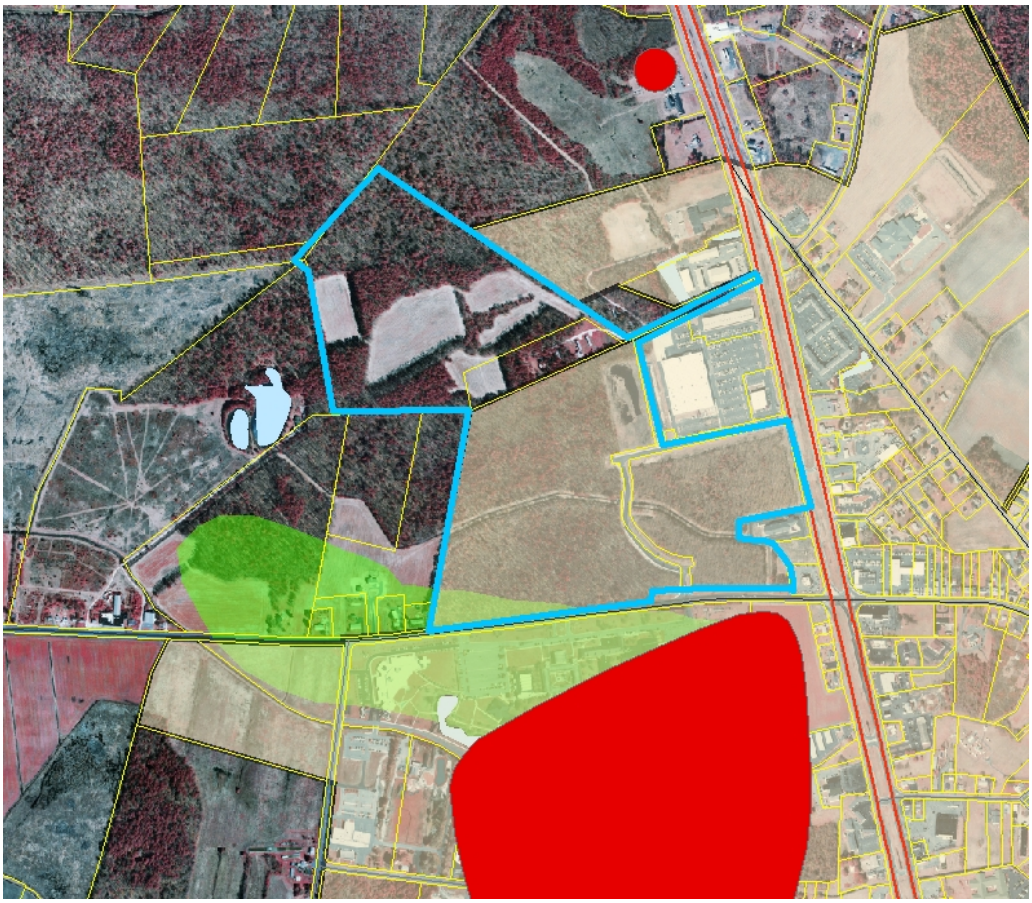
For more information:

Source Water Protection Guidance Manual for the Local Governments of Delaware
http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_final.pdf

Ground-Water Recharge Design Methodology
http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_supp_1_final.pdf

Climatic Water Budget
Thornthwaite, C. W. and Mather, J. R., 1957, Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance: Drexel Institute of Technology, Laboratory of Climatology, Volume x, Number 3

Map of North Georgetown (PLUS 2006-09-10) Excellent ground water recharge potential areas are highlighted in green. Wellhead protection areas are in red.



Water Supply

The project information sheets state water will be provided to the project by the Town of Georgetown via a public water system. DNREC records indicate that the project is located within the public water service area granted to the Town of Georgetown under Certificate of Public Convenience and Necessity 01-CPCN-01.

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 a Hazardous Waste Generator (Boulevard Auto Sales Inc.) within 1000 feet of the proposed project.

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

Sediment and Erosion Control/Stormwater Management

Standard Comments:

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through the Sussex Conservation District. Contact Jessica Watson, Program Manager, at (302) 856-7219 for details regarding submittal requirements and fees.

It is strongly recommended that you contact the Sussex Conservation District to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan. The site topography, soils mapping, pre- and post-development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion.

A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to the Division of Soil and Water Conservation along with the $195 NOI fee prior to plan approval.

Applying practices to mimic the pre-development hydrology on the site, promote recharge, maximize the use of existing natural features on the site, and limit the reliance on structural stormwater components, such as maintaining open spaces, should be considered in the overall design of the project as a stormwater management technique.

Each stormwater management facility should have an adequate outlet for release of stormwater. Any drainage conveyed onto this site from neighboring properties must be adequately conveyed through the site to the discharge point without interruption.

Clearly address how Stormwater Quality and Quantity Treatment will be provided. If this project is eligible for a Quantity Waiver, please make the request in the stormwater narrative citing the specific regulation.

Please indicate on the sediment and stormwater management plan who shall be responsible for maintenance of the stormwater management facilities both during construction and after. During the design of the sediment control and stormwater management plan, considerations should be made for maintenance (i.e. access, easements, etc.) of any structures or facilities.

If a stormwater management pond is going to be utilized as a sediment trap/basin during construction it must be designed to accommodate 3600 cubic feet of storage per acre of contributing drainage area until project stabilization is complete.

All ponds are required to be constructed per Pond Code 378.

Please note that if the stormwater facilities will impact wetlands, a permit must be provided to the District prior to receiving approval. Please address.

Site-Specific Comments:

- A Certified Construction Reviewer (CCR) is required for this project.

- The District will require a phased plan and sequence of construction for this project. DNREC regulations require no more than 20 acres to be disturbed at more time. Please address.

- Please contact Brooks Cahall, Drainage Section, for approval to discharge to a tax ditch watershed. The District must received Drainage Section approval before issuing Sediment and Stormwater approval.

- Please demonstrate to the District that this project has an adequate outfall. You will be required to analyze the outfall ditch as ½ full for the quality and 2-year storm and full for the 10- and 100-year storm events or provide a down stream analysis.

- Under the DNREC Health and Safety Memo of 2000, all wet ponds are required to have an open space depth of 3 feet or more that comprises 50-75 percent of the area of the pond.

- Consideration should be made for any adjacent properties during the design of this project, including drainage and erosion/sediment control.

- Please provide a soil survey report for each SWM basin.

- Please incorporate "Green Technology BMPs" in the stormwater management design as stated in the section10.3.5.1 of the regulations. The District recommends green
- technology practices such as bioswales between the rear lots to provide drainage and water quality.

- Please provide SCD with a copy of the AutoCAD drawings and HydroCAD files to expedite the review process.

Drainage

This project is within the Georgetown Vaughn Tax Ditch. The design engineer should contact Brooks Cahall (see contact info below) pertaining to the use of the tax ditch for stormwater purposes.

Maximum Construction/Disposal rights-of-way are 35 feet on the left and 77 feet on the right measured from the centerline and considered looking upstream. The proposed plan shows paved roads within these areas. Paved roads are considered permanent obstructions. The plan needs to be revised to reflect the existing rights-of-way.

Any reduction of rights-of-way will require a letter requesting a review to Brooks Cahall, Division of Soil & Water Conservation, Drainage Section, brooks.cahall@state.de.us.

The review would require a field visit to look at the maintenance needs of the tax ditch before a change in the court order can occur to reduce the rights-of-way limits.

Rare Species

DNREC has never surveyed this site; therefore, it is unknown if there are state-rare or federally listed plants, animals or natural communities at or adjacent to this project site. Buteo lineatus (Red-Shouldered Hawk), a State-Rare bird, occurs within a forested area southeast of this site and it could occur within the project area as well. This species (as well as many others) depends on larger, connected forested areas for breeding and foraging and efforts to reduce forest fragmentaton should be made.

Site Visit Request

In order to provide more informed comments and to make reasonable recommendations, our program botanist and zoologist request the opportunity to survey the forested and wetland resources which could potentially be impacted by the project. This would also allow the applicant the opportunity to reduce potential impacts to rare species and unique habitats and to ensure that the project is environmentally sensitive. In addition, a survey of the project site will give staff an opportunity to document the biodiversity of the property before construction activities begin. Please contact Kitt Heckscher at (302) 653-2880 to set up a site visit.

Forest Preservation

According to the application, 50 out of 75 acres of forest will be removed, and the remaining forest will be largely fragmented by lots and infrastructure. Forest fragmentation separates wildlife populations, increases road mortality, and increases “edge effects” that leave many forest dwelling species, particularly songbirds, vulnerable to predation. Forest clearing causes wildlife to disperse into surrounding areas, often resulting in human/animal conflicts. It also puts greater pressure on nearby Wildlife Areas, Nature Preserves, and other protected lands. A greater effort to preserve forest should be made and this could be accomplished by:

1) Reducing the excessive number of stormwater management ponds being proposed. Also, relocating all stormwater management ponds that will require tree clearing to a non-forested portion of the project area or utilize an alternative method of stormwater management. It does not make sense to remove trees to create ponds considering the function of trees in flood abatement and erosion control. Most of these ponds are also too close to adjacent wetland areas. There should be at least a 100ft buffer between the pond and any wetland area.

2) Reducing the number of lots and infrastructure and clustering the remaining features primarily in non-forested portions of the project area.

3) Leaving a forest intact is more beneficial to wildlife than clearing. However, if clearing occurs despite this recommendation, trees should not be cleared from April 1st to July 31st to reduce impacts to nesting birds and other wildlife species that utilize forests for breeding. This clearing recommendation would only protect those species during the breeding season, because once trees are cleared the result is an overall loss of habitat.

Plant Rescue

Since forested wetlands are to be destroyed, filled, or disturbed, we recommend that the developer/landowner contact the Delaware Native Plant Society to initiate a plant rescue. Selected plants from the site of disturbance will be collected by Society members and transplanted to the Society's nursery. Plants will then be used in restoration projects and/or sold at the Society's annual native plant sale. This can be done at no expense or liability to the developer/landowner". Please contact Lynn Redding at (302) 736-7726, (lynn_redding@ml.com) or William A. McAvoy at (302) 653-2880, (william.mcavoy@state.de.us).

Potential Hunting Issue

Because the project parcel is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited and the applicant should contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not a buffer between lot lines and the adjacent property line. There is also noise associated with hunting, such as the discharge of firearms or dogs barking when pursuing game.

Nuisance Geese

Stormwater management ponds may attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. However, native plantings, including tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (at least 50 feet) around ponds, are not as attractive to geese because they do not feel safe from predators and other disturbance when their view of the area is blocked. 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 a reduction in the number of ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Solid Waste

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

Underground Storage Tanks

There is one inactive and one active LUST site(s) located near the proposed project:
Colony Pool & Spa, Facility # 5-000855, Project # S9711193
Georgetown Dash-In, Facility # 5-000496, Project # S0307041

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.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 38.9 tons (77,819.2 pounds) per year of VOC (volatile organic compounds), 32.2 tons (64,429.0 pounds) per year of NOx (nitrogen oxides), 23.8 tons (47,536.9 pounds) per year of SO2 (sulfur dioxide), 2.1 ton (4,231.6 pounds) per year of fine particulates and 3,254.7 tons (6,509,477.7 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 15.7 tons (31,388.0 pounds) per year of VOC (volatile organic compounds), 1.7 ton (3,453.6 pounds) per year of NOx (nitrogen oxides), 1.4 ton (2,866.0 pounds) per year of SO2 (sulfur dioxide), 1.8 ton (3,698.5 pounds) per year of fine particulates and 63.6 tons (127,240.0 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 6.2 tons (12,440.0 pounds) per year of NOx (nitrogen oxides), 21.6 tons (43,269.4 pounds) per year of SO2 (sulfur dioxide) and 3,191.1 tons (6,382,237.7 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2
Mobile	38.9	32.2	23.8	2.1	3254.7
Residential	15.7	1.7	1.4	1.8	63.6
Electrical Power		6.2	21.6		3191.1
TOTAL	54.6	40.1	46.8	3.9	6509.4

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 6.2 tons of nitrogen oxides per year and 21.6 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: Duane Fox 856-5298

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

a. **Fire Protection Water Requirements**:
   - Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Mercantile)
   - 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 or more, 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 Seashore Highway 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, technical services link, plan review, applications or brochures.

Department of Agriculture - Contact: Scott Blaier 698-4500

The Delaware Department of Agriculture has no objections to the proposed application. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas within State Investment Levels 2 and 3.

The Department does have some concern about the northern boundary of the property, which borders along one of the tracts of Redden State Forest. Although State Forest are public lands for public use, there are rules and regulations governing their use. The Department requests the developer make residents aware of the Forest's location and place markers or signs along the State Forest property boundary. The Department also requests the developer make the rules and regulations governing the use of State Forests available to new residents. The rules can be found at:

http://www.state.de.us/deptagri/forestry/forms/Final%20State%20Forest%20rules%20regulations%2003-2003.pdf

The southern tip of property has been designated as having "excellent" ground-water recharge potential. DNREC has mapped all ground-water recharge-potential recharge areas for the state, and an "excellent" rating designates an area as having important groundwater recharge qualities.

Senate Bill 119, enacted by the 141st General Assembly in June of 2001, requires the counties and municipalities with over 2,000 people to adopt as part of the update and implementation of their 2007 comprehensive land use plans, areas delineating excellent ground-water recharge potential areas. Furthermore, the counties and municipalities are

required to adopt regulations by December 31, 2007 governing land uses within those areas to preserve ground-water quality and quantity.

Maintaining pervious cover in excellent and good recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware. The developer should make every effort to protect and maintain valuable ground-water recharge potential areas.

This site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Natural Areas layer is present on the site, along the Redden State Forest border. This designation identifies valuable areas discussed in Governor Minner's Executive Order Number 61. Areas such as these should be preserved as such, and not developed for residential use.

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 Vicky Walsh 739-4263

The proposal is a site plan review for 507 residential units on 108 acres located on Route 18, approximately 1,000 feet west of Route 13 in Georgetown. According to the *State Strategies Map*, the proposal is located in an Investment Level 2 area. As a general planning practice, DSHA encourages residential development inside growth zones, such as this, where residents will have proximity to services, markets, and employment opportunities. While the prices of the units are not known at this time, we encourage the applicant to include prices that are affordable to low- and moderate-income households. This proposal is in the Georgetown County Census Division (CCD), which has serious housing needs. The 2003 Statewide Housing Needs Assessment indicates that of the 3,514 occupied housing units in this CCD, 236 are substantially substandard, and 1,349 are occupied by low-income households earning less than 80 percent of the area median income. In addition, real estate data collected by DSHA indicates that in the first quarter of 2006, the median housing price for this area is $230,000, which is outside the affordability level of low- and moderate-income households. Families earning 100% of Sussex County's median income only qualify for mortgages of $171,216. The provisions

of units within reach of families earning at least 100% of Sussex County's median income would help increase housing opportunities for first time homebuyers.

Department of Education – Contact: John Marinucci 739-4658

1. DOE offers the following comments on behalf of the Indian River School District.
2. Using the DOE standard formula, this development will generate an estimated 253 students.
3. DOE records indicate that the Indian River School Districts' *elementary schools* ***are at or beyond*** *100% of current capacity* based on September 30, 2005 elementary enrollment.
4. DOE records indicate that the Indian River School Districts' *secondary schools* ***are not at or beyond*** *100% of current capacity* based on September 30, 2005 secondary enrollment. In multiple correspondences from the Indian River School District administration, the district asserts that while the Indian River High School has capacity, the Indian River Middle Schools' student population exceeds student capacity.
5. This development will create additional elementary school and middle school student population growth which will further compound the existing shortage of space. The developer is strongly encouraged to contact the Indian River School District Administration to address the issue of elementary school over-crowding that this development will exacerbate.
6. DOE requests developer work with the Indian River School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.

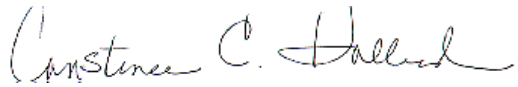
Sussex County – Contact: Richard Kautz 855-7878

No comment. The site is to be entirely within the town limits and does not directly impact County services or properties outside the town limits. The town is encouraged to avoid the creation of new enclaves and to eliminate existing enclaves during its negotiation of the annexation agreement.

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,

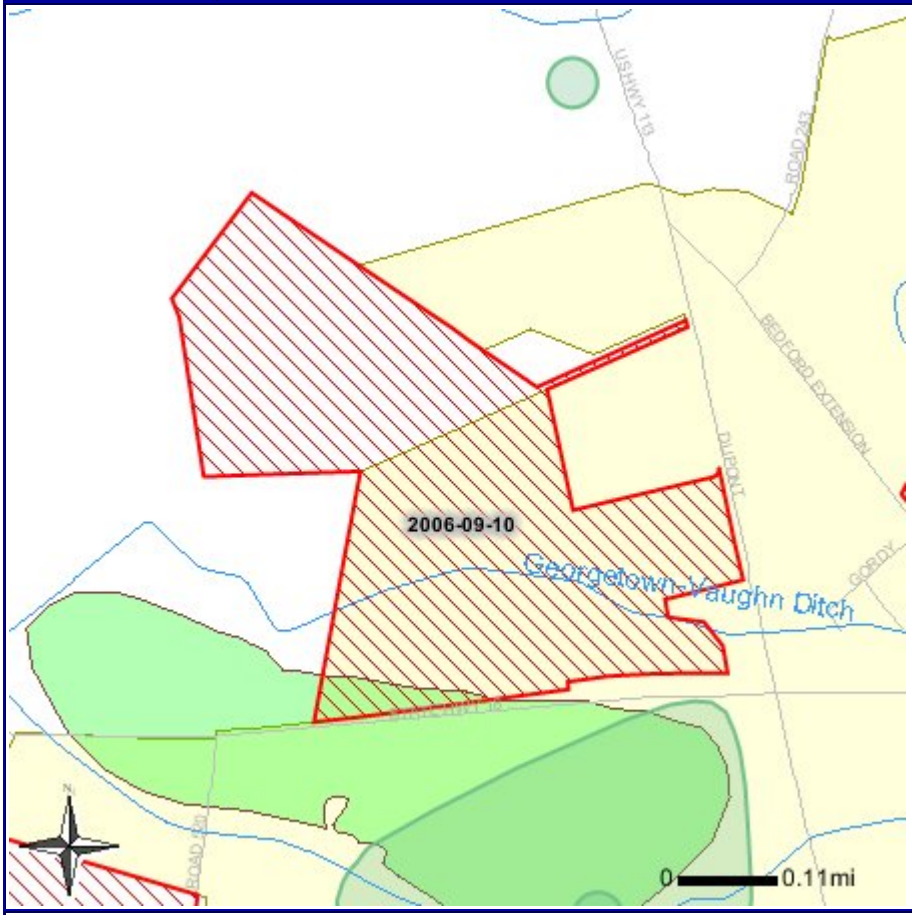


Constance C. Holland, AICP
Director

CC: Town of Georgetown

North Georgetown

2006-09-10



PLUS Projects
NHDFlowLine
Sussex WHPA
All Roads
Excellent Recharge Areas
Towns

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