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

December 16, 2005

Kevin McBride
Morris & Ritchie Associates
404 S. Bedford Street, Ste. 5
Georgetown, DE 19947

RE: PLUS review – PLUS 2005-11-06; Liddellton

Dear Mr. McBride:

Thank you for meeting with State agency planners on November 22, 2005 to discuss the proposed plans for the Liddellton project to be located on the north side of Trussum Pond Road, west of Old Stage Road in Sussex County. According to the information received, you are seeking site plan approval for 99 residential units on 86.43 acres located in Level 4.

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

Executive Summary

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

State Strategies/Project Location

This project would result in 99 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in relevant municipal and county certified comprehensive plans. For this reason, the State opposes this application.

Natural and Cultural Resources

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine wetlands on this parcel. These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex.

It should also be noted that this parcel is immediately adjacent to sensitive headwater riparian wetlands associated with the Old Forge Branch which ultimately drains to the Chesapeake Bay. Headwater streams 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 downstream. Since headwater streams are usually a major avenue for nutrient-laden stormwater and sediment runoff, their protection deserves the highest priority. In recognition of this concern, the Watershed Assessment Section strongly recommends that the applicant consider preserving the existing natural forested buffer adjacent to the Old Forge Branch in its entirety. **Efforts to maximize or expand (beyond the recommended 100-foot minimum) the existing natural buffer width with native herbaceous and/or wood vegetation (where applicable), is strongly recommended.**

Based on a preliminary evaluation of this project using this model, the development as currently conceived, **does not** meet the prescribed TMDL nutrient reduction requirements for nitrogen and phosphorus. The applicant should realize that extensive forest-land clearing, little or no wetland buffering, on-site wastewater disposal and the creation of large amounts of impervious cover can increase a given parcel's nutrient runoff significantly above the acceptable or prescribed TMDL nutrient reduction levels. It is recommended, therefore, that the applicant consider some of the above-suggested BMPs in conjunction with other applicable redesign changes to ensure that these reductions are attained.

The developer is encouraged to designate open space along the forested areas. This will provide adequate buffers for the forest and reduce homeowner disturbance to the stream and James Branch Nature Preserve. The southwest corner of the site falls within a

wellhead protection area for Briarwood Manor Development. Guidance for protecting this area is included in the "Water Resource Protection Areas" section of this letter.

The Phillips signed a legal agreement (a deed which was subsequently recorded) for an access easement in 1990. A legal right-of-way exists through the center of the property. The Division of Parks and Recreation is amenable to working with the landowner to move the right-of-way.

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

Office of State Planning Coordination – Contact: Ann Marie Townshend 739-3090

This project represents a major land development that will result in 99 residential units in an Investment Level 4 area according to the *2004 Strategies for State Policies and Spending*. This project is also located outside of a designated growth area in relevant municipal and county certified comprehensive plans. Investment Level 4 indicates where State investments will support agricultural preservation, natural resource protection, and the continuation of the rural nature of these areas. New development activities and suburban development are not supported in Investment Level 4 areas. These areas are comprised of prime agricultural lands and environmentally sensitive wetlands and wildlife habitats, which should be, and in many cases have been preserved.

From a fiscal responsibility perspective, development of this site is likewise inappropriate. The cost of providing services to development in rural areas is an inefficient and wasteful use of the State's fiscal resources. The project as proposed is likely to bring nearly 250 new residents to an area where the State has no plans to invest in infrastructure upgrades or additional services. These residents will need access to such services and infrastructure as schools, police, and transportation. To provide some examples, the State government funds 100% of road maintenance and drainage improvements for the transportation system, 100% of school transportation and paratransit services, up to 80% of school construction costs, and about 90% of the cost of police protection in the unincorporated portion of Sussex County where this development is proposed. Over the longer term, the unseen negative ramifications of this development will become even more evident as the community matures and the cost of maintaining infrastructure and providing services increases. Because the development is inconsistent with the *Strategies for State Policies and Spending*, the State is opposed to this proposed subdivision.

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

Nothing is known within this parcel. There is a historic farmhouse (S-6703) on a parcel surrounded by the development parcel. This farm shows up on the 1915 USGS 15' Seaford map. There are two historic farms immediately across Trussum Pond Road from the development. There are also known prehistoric-period archaeological sites in the vicinity, so the potential for such sites here is high. The Beers Atlas of 1868 shows the T. J. Cannon House in the area, possibly within the parcel; there may be a surviving, historic-period archaeological site associated with this house.

Small, rural, family cemeteries often are found in relation to historic farm complexes, usually a good distance from 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. The DHCA will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

Adequate landscaping to screen this development from the adjacent and nearby historic properties is recommended. The DHCA would appreciate the opportunity to look for possible archaeological sites to learn something about their location, extent, and nature prior to any ground-disturbing activities taking place.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

Arlon Development seeks to develop 99 single-family detached houses on an approximately 86.43-acre parcel (Tax Parcel 3-32-02.00-94.00). The parcel is located on the north side of Trussum Pond Road (Sussex Road 462) east of Old Stage Road (Sussex Road 461) and more generally southeast of Laurel. The land is zoned AR-1 and GR and would be developed by right.

This development is proposed for an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies for State Policies and Spending* has deemed the type of development being proposed inappropriate for this area. As part of its commitment to support the *Strategies,* DelDOT refrains from participating in the cost of any road improvements needed to support this development and is opposed to any road improvements that will substantially increase the transportation system capacity in this area. DelDOT will only support taking the steps necessary to preserve the existing transportation infrastructure and make whatever safety and drainage related improvements are deemed appropriate and necessary. The intent is to preserve the open space, agricultural lands, natural habitats and forestlands that are typically found in Level 4 Areas while avoiding the creation of isolated development areas that cannot be served

effectively or efficiently by public transportation, emergency responders, and other public services.

DelDOT strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in approved Comprehensive Plans, and encourages the use of transfer of development rights where this growth management tool is available. If this development proposal is approved, notwithstanding inconsistencies with the relevant plans and policies, DelDOT will provide technical review and comments.

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

Investment Level 4 Policy Statement

This project is proposed for an Investment Level 4 area as defined by the *Strategies for State Policies and Spending* and is also located outside of a designated growth area in the relevant municipal and county certified comprehensive plans. According to the *Strategies* this project is inappropriate in this location. In Investment Level 4 areas, the State's investments and policies, from DNREC's perspective, should retain the rural landscape and preserve open spaces and farmlands. Open space investments should emphasize the protection of critical natural habitat and wildlife to support a diversity of species, and the protection of present and future water supplies. Open space investments should also provide for recreational activities, while helping to define growth areas. Additional state investments in water and wastewater systems should be limited to existing or imminent public health, safety or environmental risks only, with little provision for additional capacity to accommodate further development.

With continued development in Investment Level 4 areas, the State will have a difficult, if not impossible, time attaining water quality (e.g., TMDLs) and air quality (e.g., non-attainment areas for ozone and fine particulates) goals. Present and future investments in green infrastructure, as defined in Governor Minner's Executive Order No. 61, will be threatened. DNREC strongly supports new development in and around existing towns and municipalities and in areas designated as growth zones in certified Comprehensive Plans, and encourages the use of transfer of development rights where this growth management tool is available.

This particular development certainly compromises the integrity of the State Strategies and the preservation goals inherent in many of DNREC's programs. Of particular concern are: the project impacts all three layers of the Green Infrastructure map (cropland, forest, and natural resources), the project's proximity to a wellhead protection

area, the project's proximity to the James Branch Nature Preserve, and the possible impacts of 99 individual on-site septic systems. While mitigating measures such as conservation design, central wastewater systems instead of individual on-site septic systems, and other best management practices may help mitigate impacts from this project, not doing the project at all is the best avenue for avoiding negative impacts. As such, this project will receive no financial, technical or other support of any kind from DNREC. Any required permits or other authorizations for this project shall be considered in light of the project's conflict with our State growth strategies.

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, Rumford, and Johnston were mapped in the immediate vicinity of the proposed construction. Evesboro is an excessively well-drained upland soil that has moderate limitations for development on account of its rapid permeability. Rumford is well-drained upland soil that, generally, has few limitations for development. Johnston is a poorly-drained wetland associated (**hydric**) floodplain soil that has the highest severity level for development.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine wetlands on this parcel. These wetlands provide water quality benefits, attenuate flooding and provide important habitat for plants and wildlife. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex. The developer should note that both DNREC and Army Corps of Engineers discourage allowing lot lines to contain wetlands to minimize potential cumulative impacts resulting from unauthorized and/or illegal activities and disturbances that can be caused by homeowners.

It should also be noted that this parcel is immediately adjacent to sensitive headwater riparian wetlands associated with the Old Forge Branch which ultimately drains to the Chesapeake Bay. Headwater streams 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 downstream. Since headwater streams are usually a major avenue for nutrient-laden stormwater and sediment runoff, their protection deserves the highest priority. In recognition of this concern, the Watershed Assessment Section strongly recommends that the applicant consider preserving the existing natural forested buffer adjacent to the Old Forge Branch in its entirety. **Efforts to maximize or expand (beyond the recommended 100-foot minimum) the existing natural buffer width with native herbaceous and/or wood vegetation (where applicable), is strongly recommended.**

Wetland Permitting Information

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 a parcel are nonjurisdictional isolated wetlands, the Corps must be contacted to make the final jurisdictional assessment. They can be reached at 302-736-9763.

In addition, individual 404 permits and certain Nationwide Permits from the Army Corps of Engineers also require 401 Water Quality Certification from the DNREC Wetland and Subaqueous Land Section and Coastal Zone Federal Consistency Certification from the DNREC Division of Soil and Water Conservation, Delaware Coastal Programs Section. Each of these certifications represents a separate permitting process. To find out more about permitting requirements, the applicant is encouraged to attend a Joint Permit Process Meeting. These meetings are held monthly and are attended by federal and state resource agencies responsible for wetland permitting. Contact Denise Rawding at (302) 739-9943 to schedule a meeting.

Impervious Cover

Research findings have consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline below their predevelopment level. Moreover, increases in a watershed's surface imperviousness have been shown to reflect proportional decreases in water and habitat once this threshold is exceeded. Information compiled by the University of Delaware through analysis of 2002 aerial photography indicates that the Broad Creek watershed, as of that year, had about 6.4 percent impervious cover. Therefore, the Watershed Assessment Section strongly encourages the implementation of BMPs that help reduce the predictable impacts from the creation of unnecessary surface imperviousness. The planting and/or preservation (i.e., existing riparian buffer) of trees (especially when adjacent to wetlands/water bodies), and the use of pervious paving surfaces in lieu of asphalt or concrete are examples of practical BMPs to reduce such impacts.

ERES Waters

The project is located adjacent to receiving waters of Inland Bays designated as waters having Exceptional Recreational or Ecological Significance (ERES). ERES waters are recognized as special assets of the State and shall be protected and/or restored, to the maximum extent practicable, to their natural condition. Provisions in Section 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 nutrient runoff through implementation of Best Management Practices (BMPs). Subsection 5.6.3.5 of this section expressly authorizes the Department to provide standards for controlling the addition of pollutants and reducing them to the greatest degree practicable, or where attainable, to a standard requiring no discharge of pollutants.

TMDLs

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

Compliance with TMDLs through the PCS

Significant nitrogen and phosphorus loading reductions must be realized from all sources, including onsite wastewater systems. The Department has developed performance-based standards for on-site wastewater treatment and disposal systems that have been presented as a part of the proposed Pollution Control Strategy (PCS). Upon promulgation of the proposed PCS regulation, new and existing wastewater disposal systems must reduce nitrogen and phosphorus loading in the Broad Creek watershed. Such reductions, known as "Performance Standards", will require (where applicable) nitrogen and phosphorus loading not exceed average annual discharge concentration levels of 5 and 2 mg/l for nitrogen and phosphorus, respectively.

The proposed pollution control strategy will require the completion of a nutrient budget to estimate nutrient load changes following development; documentation of these load changes will be assessed through a nutrient budget protocol. The nutrient budget protocol is a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities. The post-development loading rate is then compared with the pre-development loading rate to assess whether the project meets the prescribed TMDL nutrient load reductions. Based on a preliminary evaluation of this project using this model, the development as currently conceived **does not** meet the prescribed TMDL nutrient reduction requirements for nitrogen and phosphorus. The applicant should realize that extensive forest-land clearing, little or no wetland buffering, on-site wastewater disposal and the creation of large amounts of impervious cover can increase a given parcel's nutrient runoff significantly above the acceptable or prescribed TMDL nutrient reduction levels. It is recommended, therefore, that the applicant consider some of the above-suggested BMPs in conjunction with other applicable redesign changes to ensure that these reductions are attained. DNREC suggests that the applicant verify their project's compliance with the specified TMDL loading rates by running the model themselves. Please contact Lyle Jones of Watershed Section at 302-739-9939 for the acceptable model protocol.

Water Resource Protection Areas

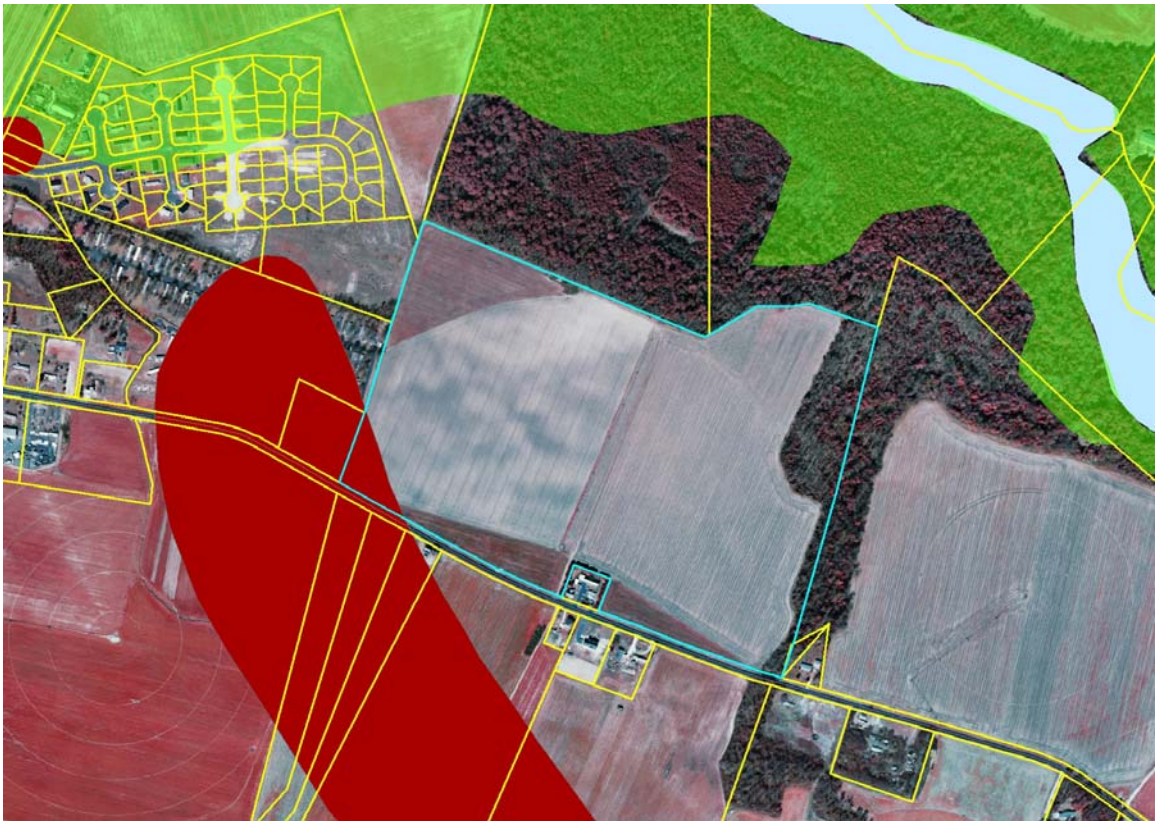
The DNREC Water Supply Section has determined that the site falls partially within a wellhead protection area for Briarwood Manor Development. The southwest part of the parcel is mostly covered by the wellhead protection area (see following map and attached map).Wellhead protection areas are surface and subsurface areas surrounding a public water supply well where the quantity and quality of groundwater moving toward such wells may be adversely affected by land use activities.

The DNREC Water Supply Section recommends that the portion of the new development within the wellhead protection area not exceed 50% 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 purpose of an impervious cover threshold is to minimize loss of recharge (and associated increases in storm water) and protect the quality and quantity of ground water and surface water supplies.

The proposed development would change the impervious over from 0% to approximately 12%. These numbers were provided by developer on the PLUS application. The development plan includes open space for passive recreation and storm water management. Ideally, relocating open space areas to the southwest part of the parcel would decrease the total impervious area in the wellhead protection area. Augmenting the groundwater recharge with clean rooftop run-off systems are another alternative to reducing the total impervious cover.

For more information refer to the March 2004 Final Source Water Protection Guidance Manual for the Local Governments of Delaware
http://www.wr.udel.edu/swaphome/phase2/SWPguidancemanual.html
and
Ground-Water Recharge Design Methodology
http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf

Map of Liddellton as it impacts the wellhead protection area. The dark red area shows the wellhead protection area.



Water Supply

The project information sheets state that individual on-site wells will be used to provide water for the proposed project. Records indicate that the project is not located in an area where public water service is available. The Division of Water Resources will consider applications for the construction of on-site wells provided the wells can be constructed and located in compliance with all requirements of the Regulations Governing the Construction and Use of Wells. A well construction permit must be obtained prior to constructing any wells. Should dewatering points be needed during any phase of construction, a dewatering well construction permit must be obtained from the Water Supply Section prior to construction of the well points. In addition, a water allocation permit will be needed if the pumping rate will exceed 50,000 gallons per day at any time during operation.

All well permit applications must be prepared and signed by licensed water well contractors, and only licensed well drillers may construct the wells. Please factor in the necessary time for processing the well permit applications into the construction schedule. Dewatering well permit applications typically take approximately four weeks to process, which allows the necessary time for technical review and advertising. Should you have any questions concerning these comments, please contact Rick Rios at 302-739-9944.

Sediment and Erosion Control/Stormwater Management

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. The plan review and approval as well as construction inspection will be coordinated through Sussex Conservation District. Contact the Sussex Conservation District at (302) 856-7219 for details regarding submittal requirements and fees. A Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity must be submitted to DNREC 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. Green Technology BMPs must be given first consideration for stormwater quality management. Each stormwater management facility should have an adequate outlet for release of stormwater. It is strongly recommended that the developer contact the reviewing agency to schedule a preliminary 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.

Forest Preservation

PLUS materials indicate that 0.55 acres of forest will be removed for construction. Although small, this area provides water quality, air quality and habitat benefits. Clearing portions of the forest within the parcel will reduce the habitat value by allowing invasive species such as multiflora rose, autumn olive, and oriental bittersweet to occupy the forest edge. Invasive species such as these prosper in disturbed areas and pose a threat to mature trees and native shrubs. Therefore, the developer is strongly encouraged to preserve, and where possible, enhance forested resources on site. The wooded areas on-site should be viewed as a community asset and managed appropriately.

There are numerous opportunities on this site to improve the extent and function of forested buffers, particularly along Old Forge Branch and the James Branch Nature Preserve. The developer should seriously consider placing the forest into a permanent conservation easement or other binding protection as the forested area is extremely beneficial to the region and to Delaware's Green Infrastructure. These areas should be clearly marked and delineated so that residents understand their importance and so that homeowner activities do not infringe upon these areas.

Open Space

The developer is encouraged to designate open space along the forested areas. This will provide adequate buffers for the forest and reduce homeowner disturbance to the stream and James Branch Nature Preserve. The developer should seriously consider habitat improvements such as revegetating portions of the site to increase the buffer zone to the Old Forge Branch. Planting of additional trees and shrubs can help improve water quality, would improve habitat and would provide the community with additional aesthetic and recreational resources.

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.

State Resource Areas

The northern portion of the parcel is within as a critical natural area and portions of the parcel around Old Forge Branch are mapped as State Resource Areas. These areas include lands held in conservation by various groups as well as lands targeted for conservation and preservation efforts. These areas are thought to have particular conservation value. The wetlands and woodlands along this tract provide valuable wildlife corridors connecting to vast areas of conservation land.

Access Easement to James Branch Nature Preserve

The Phillips signed a legal agreement (a deed which was subsequently recorded) for an access easement in 1990. A legal right-of-way exists through the center of the property.

The Division of Parks and Recreation is amenable to working with the landowner to move the right-of-way.

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 7.6 tons (15,195.5 pounds) per year of VOC (volatile organic compounds), 6.3 tons (12,580.8 pounds) per year of NOx (nitrogen oxides), 4.6 tons (9,282.4 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (826.3 pounds) per year of fine particulates and 635.5 tons (1,271,081.4 pounds) per year of CO2 (carbon dioxide).

However, because the project is in a Level 4 area, mobile emission calculations should be increased by 118 pounds for VOC emissions for each mile outside the designated growth areas per household unit; by 154 pounds for NOx; and by 2 pounds for particulate emissions. A typical development of 100 units that is planned 10 miles outside the growth areas will have additional 59 tons per year of VOC emissions, 77 tons per year of NOx emissions and 1 ton per year of particulate emissions versus the same development built in a growth area (level 1,2 or 3).

Emissions from area sources associated with this project are estimated to be 3.1 tons (6,129.0 pounds) per year of VOC (volatile organic compounds), 0.3 ton (674.4 pounds) per year of NOx (nitrogen oxides), 0.3 ton (559.6 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (722.2 pounds) per year of fine particulates and 12.4 tons (24,845.7 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.2 tons (2,429.1 pounds) per year of NOx (nitrogen oxides), 4.2 tons (8,449.1 pounds) per year of SO2 (sulfur dioxide) and 623.1 tons (1,246,235.8 pounds) per year of CO2 (carbon dioxide).

	VOC	NOx	SO_2	$PM_{2.5}$	CO_2

Mobile	7.6	6.3	4.6	0.4	635.5
Residential	3.1	0.3	0.3	0.4	12.4
Electrical Power		1.2	4.2		623.1
TOTAL	10.7	7.8	9.1	0.8	1271.0

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 1.2 tons of nitrogen oxides per year and 4.2 tons of sulfur dioxide per year. A significant method to mitigate this impact would be to require the builder to construct Energy Star qualified homes. Every percentage of increased energy efficiency translates into a percent reduction in pollution. Quoting from their webpage, http://www.energystar.gov/: "ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on heating, cooling, and hot water energy use and are typically achieved through a combination of:

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

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

State Fire Marshal's Office – Contact: Duane Fox 302-856-5298

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**:
- Since the structures of the complex are proposed to be served by individual on-site wells (No Central or Public Water System within 1000' of property), set back and separation requirements will apply.
- Since the dwellings of the subdivision are proposed to be served by individual on-site wells (No Central or Public Water System within 1000' of property), set back and separation requirements will apply.

b. **Fire Protection Features:**
- For commercial buildings greater than 5000 SqFt, a fire alarm signaling system which is monitored off-site is required
- For commercial buildings greater than 10,000 SqFt Class B (2-hour rated) fire barriers are required to subdivide buildings into areas of 10,000 SqFt. or less
- 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

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 Trussum Pond Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

d. **Gas Piping and System Information:**

- Provide type of fuel proposed, and show locations of bulk containers on plan.

e. **Required Notes**:
- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Proposed Use
- Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

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

Department of Agriculture - Contact: Milton Melendez 698-4500

The proposed development is in an area designated as Level 4 under the *Strategies for State Policies and Spending*. The *Strategies* and the Sussex County Comprehensive Plan do not support this type of isolated development in this area. The intent of these plans is to preserve the agricultural lands, forestlands, recreational uses, and open spaces that are preferred uses in Level 4 areas. The Department of Agriculture and Forest Service oppose the proposed development which conflicts with the preferred land uses, making it more difficult for agriculture and forestry to succeed, and increases the cost to the public for services and facilities.

More importantly, the Department of Agriculture opposes this project because it negatively impacts those land uses that are the backbone of Delaware's resource industries - agriculture, forestry, horticulture - and the related industries they support. Often new residents of developments like this one, with little understanding or appreciation for modern agriculture and forestry, find their own lifestyles in direct conflict with the demands of these industries. Often these conflicts result in compromised health and safety; one example being decreased highway safety with farm equipment and cars competing on rural roads. The crucial economic, environmental and open space benefits of agriculture and forestry are compromised by such development. We oppose the creation of isolated development areas that are inefficient in terms of the full range of public facilities and services funded with

public dollars. Public investments in areas such as this are best directed to agricultural and forestry preservation. The site is also a designated as a "Good Recharge" area, meaning that the area has valuable ground water recharge qualities. In addition, this site overlaps with the State's Green Infrastructure Investment Strategy Plan. The Cropland layer is present in this site; this designation identifies areas that possess unique natural features that are valuable for preservation.

The Delaware Department of Agriculture supports growth which expands and builds on existing urban areas and growth zones in approved State, county and local plans. Where additional land preservation can occur through the use of transfer of development rights and other land use measures, DDA supports these efforts and works with developers to implement these measures. If the project is approved DDA will work with the developers to minimize impacts to the agricultural and forestry industries.

Public Service Commission - Contact: Andrea Maucher 739-4247

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

Delaware State Housing Authority – Contact Jimmy Atkins 739-4263

This proposal is to develop 99 units on 86 acres located on the north side of Trussum Pond Road, west of Old Stage Road, adjacent to Trap Pond State Park, and east of Laurel. According to the *Strategies for State Policies and Spending*, the proposal is located in an Investment Level 4 area and in an environmentally sensitive area. As a general planning practice, DSHA encourages residential development in areas where residents will have proximity to services, markets, and employment opportunities such as Investment Level 1 and 2 areas outlined in the *Strategies*. DSHA opposes this proposal because it is located in an area targeted for agricultural and natural resource protection. The proposal is inconsistent with where the State would like to see new residential development.

Sussex County – Contact: Richard Kautz 302-855-7878

This fiscal year Sussex County will be considering implementation of a Source Water Protection Program required by the State. Depending on the requirements adopted by the County Council this project might be affected. Any well location should insure that the wellhead protection area is entirely on site.

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.

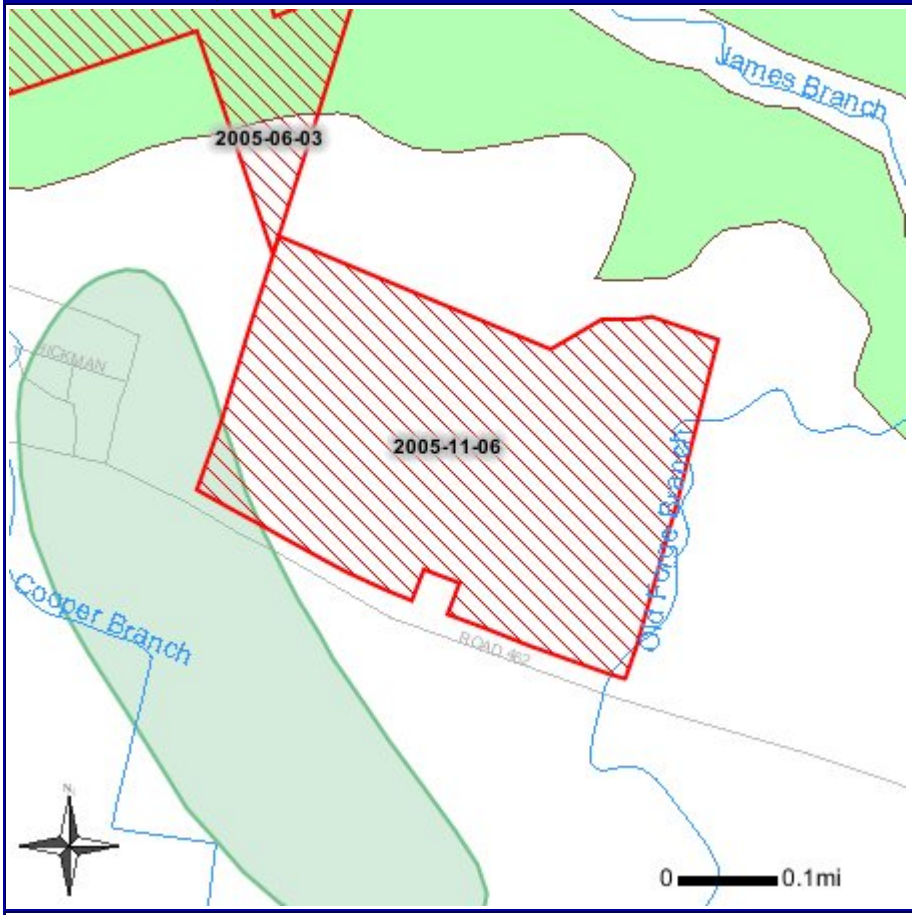
Sincerely,

Constance C. Holland, AICP
Director

CC: Sussex County

Liddellton

2005-11-06



PLUS Projects
NHDFlowLine
Sussex WHPA
All Roads
Excellent Recharge Areas

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