



STATE OF DELAWARE
EXECUTIVE DEPARTMENT
OFFICE OF
STATE PLANNING COORDINATION

January 7, 2005

Mr. Greg Scott
Scott Engineering, Inc.
838 Walker Road
Suite 21-2
Dover, DE 19904

RE: PLUS review – PLUS 2004-12-08 Knollwood Subdivision

Dear Mr. Scott,

Thank you for meeting with State agency planners on December 22, 2004 to discuss the proposed plans for Knollwood Subdivision to be located on the north side of CR31 (Irish Hill Road) and west of Peachtree Road in Kent County.

According to the information received, the developers are seeking to develop 270 residential dwelling units on 146.25 acres east of the Town of Viola. The property is currently zoned AC and would remain so with a change of use from agricultural to residential.

Please note that changes to the plan, other than those suggested in this letter, may result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented in the PLUS review. The developers will need to comply with any Federal, County and local regulations regarding this property. As Kent 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.

This office has received the following comments from State agencies:

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

The majority of this project is located in Investment Level 2 according to 2004 State Strategies for Policies and Spending. The small portion of the site in Investment Level 3 consists mainly of wetlands, which this plan proposes to preserve. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. State investments will support growth in these areas. Our office has no objections to the

proposed development of this project in accordance with the relevant County codes and ordinances.

State Historic Preservation Office (SHPO) – Contact Anne McCleave 739-5685

There once was a 19th century house and outbuildings on this property. It appears that they have been replaced with a more recent house. There is a high probability for archaeological sites.

Department of Transportation – Contact Bill Brockenbrough 760-2109

Robert D. McKeown, Jr. seeks to develop a 146.25-acre parcel (Tax Parcel NM-00-120.00-01-62.00-000) on the north side of Irish Hill Road (Kent Road 31) just west of Peachtree Run (Kent Road 105). The development would consist of 270 single-family detached houses. The land is zoned AC (Agricultural Conservation) and subdivision approval would be needed for the proposed development to proceed.

Our comments are as follows:

- 1) DelDOT will require a traffic impact study (TIS) for the proposed development. To obtain a scope of work for that study, the developer should have their traffic engineer contact our project engineer, Mr. Todd Sammons, at (302) 760-2134.
- 2) We will require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the site.
- 3) We recommend changing the site design to eliminate some of the nine proposed cul-de-sacs, in order to enhance the grid street pattern and provide more of a sense of community.
- 4) We appreciate the developer's three proposed connections to the Woodfield subdivision and recommend that a stub street be provided to the Satterfield property to the west.
- 5) The concept plan shows median islands at both of the entrances on Irish Hill Road. These islands would appear to prohibit left turn access in and out of several lots. The entrances or the lot layout should be redesigned so that left turns in and out are possible from all lots.
- 6) The developer's engineer should contact our project manager for Kent County, Mr. Brad Herb of Johnson, Mirmiran & Thompson, regarding our requirements for streets and access. Mr. Herb may be reached at (302) 266-9080.

Delaware Transit Corporation Contact Catherine Dennis 739-3278

Existing DART Harrington to Dover Shuttle serves Irish Hill and Peachtree Roads. If transit propensity would be evident, DART requests the inclusion of sidewalks and to meet with the developer to discuss the implementation of future bus stops.

Department of Natural Resources and Environmental Control – Contact Kevin Coyle 739-3091

Soils

The Kent County soil survey mapping indicates that Sassafras, Woodstown, and Fallsington were mapped in the immediate vicinity of the proposed construction. Sassafras is a well-drained upland soil that has few limitations for development. Woodstown is a moderately well drained soil of low-lying uplands that has moderate limitations for development. Fallsington is a poorly drained wetland associated (**hydric**) soil that has severe limitations for development.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of palustrine forested and palustrine open flat wetlands on this site.

Impacts to Palustrine wetlands are regulated by the Army Corps of Engineers through Section 404 of the Clean Water Act. 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) 739-4691 to schedule a meeting.

Lots should exclude all wetlands and associated buffers. It is important to 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. Vegetated buffers of no less than 100 feet should be employed from the edge of the wetland complex on site.

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

TMDLs

With the adoption of Total Maximum Daily Loads (TMDLs) as a “nutrient-runoff-mitigation strategy” for reducing nutrients in the Inland Bays Watershed, reduction of

nitrogen and phosphorus loading will be mandatory. 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 authorized under federal code, states are charged with developing and implementing standards to support those desired use goals. The Jurisdictional authority for attaining these use goals will fall under the auspices of Section 11.5 of the State of Delaware’s Surface Water Quality Standards (as amended August 11, 1999), and will be achieved via nutrient reductions referred to as “pollution control strategies.”

Nutrient reductions prescribed under TMDLs are assigned to those watersheds or subwatersheds on the basis of recognized water quality impairments. In the Murderkill, the primary source of water quality impairment is associated with nutrient runoff from agricultural and/or residential development. In order to mitigate the aforementioned impairments, a TMDL reduction level of 30 and 50 percent will be required for nitrogen and phosphorus, respectively.

In order for the applicant to verify compliance with the TMDL mandate, a full nutrient accounting process known as nutrient budget should be prepared. The developer/consultant should contact Lyle Jones in the Department’s Watershed Assessment Section for further information regarding the acceptable protocol for calculating a nutrient budget. His number is 739-4590.

The developer is encouraged to employ BMPs (or other pollution control strategies) such as stormwater management and riparian buffers to mitigate any potential nutrient runoff into adjoining streams or watercourses.

Water Supply

The project information sheets state water will be provided to the project by Tidewater Utilities via a central water system. Our records indicate that the project is located within the public water service area granted to the Tidewater Utilities under Certificate of Public Convenience and Necessity PSC-1190.

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 302-739-3665.

Water Resource Protection Areas

A significant portion of the parcel along Irish Hill Road is located in an excellent recharge area (see map). According to the State law that created the Source Water Protection Program, county and municipal governments will be required to enact ordinances to protect Water Resource Protection Areas. The following language has been excerpted from the draft Source Water Protection Guidance Manual for Local Governments, Supplement 1 - Ground-Water Recharge Design Methodology. While the language is currently draft and the local ordinances are not yet in place, the developer may find the language useful in modifying the site plan to protect the excellent recharge area.

Water Resource Protection Areas (WRPAs) are defined as (1) surface water areas such as floodplains, limestone aquifers, and reservoir watersheds, (2) wellhead areas, or (3) excellent recharge areas. The purpose of an impervious cover threshold is to minimize loss of recharge and protect the quality and quantity of ground and surface water supplies in WRPAs.

New development in WRPAs may exceed the 20 % impervious cover threshold, but be no more than 50 % impervious, provided the applicant submits an environmental assessment report recommending a climatic water budget and facilities to augment recharge. The environmental assessment must document that post-development recharge will be no less than predevelopment 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.

The Department recommends the following (ranked in order of preference):

- a) Preserve WRPAs as open space and parks by acquisition or conservation easement.*
- b) Limit impervious cover of new development to 20 % by right within WRPAs.*
- c) Allow impervious cover of new development to exceed 20% within WRPAs (but no more than 50% impervious) provided the applicant develops recharge facilities that directly infiltrate rooftop runoff.*
- d) Allow impervious cover of new development to exceed 20% within WRPAs (but no more than 50% impervious) provided the applicant*
 - a. develops recharge facilities that infiltrate stormwater runoff from forested and/or grassed surfaces with pretreatment.*

Sediment and Erosion Control/Stormwater Management

Requirements:

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

Comments:

- 1) This site contains several low, poorly drained, areas of Woodstown and Fallsington Soils. Proper drainage of developed lots and active open space must be considered in the development of the grading plan for this subdivision.
- 2) The road culverts that serve as outfalls for this project along Irish Hill Road should be checked to determine if they have adequate capacity to pass the design storms. If they do not, they may need to be upgraded, or stormwater discharges managed to match the existing capacity of those culverts.
- 3) The preferred methods of stormwater management are those practices that maximize the use of the natural features of a site, promote recharge and minimize the reliance on structural components. The designer is encouraged to consider the conservation design approach and limit the amount of tree clearing required for the development of the site including the stormwater management facilities.

- 4) Access to the proposed stormwater facility must be provided for periodic maintenance. This access should be at least 12 feet wide to leading to the facility and around the facility's perimeter.
- 5) It is recommended that the stormwater management areas be incorporated into the overall landscape plan to enhance water quality and to make the stormwater facility an attractive community amenity.
- 6) A letter of no objection to recordation will be provided once the detailed Sediment and Stormwater Management plan has been approved.
- 7) Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.
- 8) The Kent Conservation District recommends that no residential lot be recorded within a subdivision that contains wetlands. Placing wetlands in open space will aid in protecting those areas from disturbance and reduce individual property owner complaints regarding poor drainage of areas on their property.

Drainage

The Drainage Section is aware of existing drainage problems associated with this project. The Drainage Section requests that the existing road ditch be cleaned and the existing road crossing pipe on the west side of this project be lowered. Measures should be taken to provide drainage for the existing ditch on the property to the west of this project.

The Drainage Section further requests that all precautions be taken to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site stormwater.

Forests

According to 2002 aerial photographs there is a portion of forested area in the western portion of the parcel. PLUS materials indicate that 1.5 acres will be removed. This area connects to a larger tract of forest that provides important wildlife connectors, water quality, air quality and habitat benefits both to the site itself and the region. Therefore, the developer is strongly encouraged to preserve, and where possible, enhance forested resources on site. This includes removing the seven lots from forested areas to the extent possible and minimizing any clearing activities. The forested areas on-site should be viewed as a community asset and managed appropriately.

Forested areas on-site set aside for conservation purposes should be placed into a permanent conservation easement or other binding protection. 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

PLUS materials indicate that 43.75 acres of open space is proposed. To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines be pulled out of the forest. The developer is encouraged to designate open space along edges of forested areas and wetlands. Doing so will preserve the buffers on site and its value

for birds and wildlife and it will create recreational opportunities for residents by allowing them access to and views of the forest.

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.

Stormwater Ponds, Buffers, and Nuisance Species

The stormwater management ponds incorporated within the subdivision will likely attract waterfowl like resident Canada geese and mute swans that will create a nuisance for community residents. Although small numbers of these species are enjoyed by residents, geese and swans can quickly multiply and overwhelm the area. 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. Ponds that remain in the subdivision plan should be landscaped to deter nuisance species. 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 an adequate buffer area (we recommend 50 feet) around ponds, are not as attractive to geese because they do not feel as safe from predators and other disturbance when their view of the area is blocked. 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.

It is further recommended that all stormwater ponds be at least 100 feet from all wetlands and waterbodies.

Revegetation/Landscaping

We request that no invasive species be used in the revegetation of disturbed or landscaped areas. A list of species considered invasive in Delaware can be found on the DNHP web site, www.dnrec.state.de.us/fw/invasive.htm. We further encourage, where possible/feasible, the use of native plants for habitat restoration projects on-site and our Botanist, Bill McAvoy can be contacted at (302) 653-2880 to assist you in developing a plant list.

Recreation

We recommend that sidewalks be built fronting every residence and stub streets. A complete system of sidewalks will: 1) fulfill the recreation need for walking and biking facilities, 2) provide opportunities for neighbors to interact in the community, and 3) facilitate safe, convenient off-road access to neighboring communities, public mass transit stops, schools, stores, work, etc.

Underground Storage Tanks

There are no LUST site(s) located near the proposed project. 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 be 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 in the contaminated areas.

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 20.7 tons (41,442.2 pounds) per year of VOC (volatile organic compounds), 17.2 tons (34,311.3 pounds) per year of NO_x (nitrogen oxides), 12.7 tons (25,315.5 pounds) per year of SO₂ (sulfur dioxide), 1.1 ton (2,253.5 pounds) per year of fine particulates and 1,733.3 tons (3,466,585.8 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 8.4 tons (16,715.5 pounds) per year of VOC (volatile organic compounds), 0.9 ton (1,839.2 pounds) per year of NO_x (nitrogen oxides), 0.8 ton (1,526.3 pounds) per year of SO₂ (sulfur dioxide), 1.0 ton (1,969.6 pounds) per year of fine particulates and 33.9 tons (67,761.0 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 3.3 tons (6,624.8 pounds) per year of NO_x (nitrogen oxides), 11.5 tons (23,042.9 pounds) per year of SO₂ (sulfur dioxide) and 1,699.4 tons (3,398,824.8 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	20.7	17.2	12.7	1.1	1733.3
Residential	8.4	0.9	0.8	1.0	33.9
Electrical Power		3.3	11.5		1699.4
TOTAL	29.1	21.4	25.0	2.1	3466.6

State Fire Marshal's Office – Contact John Rossiter 323-5365

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):

Fire Protection Water Requirements

- 1) 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.
- 2) The infrastructure for fire protection water shall be provided, including the size of water mains.

Accessibility

- 1) 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 Irish Hill Road must be constructed so fire department apparatus may negotiate it.
- 2) 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.
- 3) 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.
- 4) If the use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.

Gas Piping and System Information

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

Required Notes

- 1) 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”
- 2) Name of Water Supplier
- 3) Proposed Use
- 4) National Fire Protection Association (NFPA) Construction Type
- 5) Maximum Height of Buildings (including number of stories)
- 6) 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 Mark Davis 739-4811

The Department of Agriculture has no objection to this application proposing to develop 146.2 acres in a Level 2 area of the State Strategies for Policies and Spending.

The Delaware Forest Service (DFS) encourages the developer to consider a diverse landscape plan that utilizes the right tree for the right place concept. DFS encourages the preservation of forested areas adjacent to creeks, streams, wetlands and other water bodies to lessen potential pollutants to the state's water resources. Also, DFS requests the developer to plan connections for both traditional and green infrastructure between future development activities and existing natural resources. Finally, DFS encourages the use of a forestry or arboriculture professional to support the activities recommended for this site.

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.

Recent legislation (Senate Bill 99) placed non-governmental companies providing wastewater services to 50 or more customers (in the aggregate) under the regulatory control of the PSC. While rules are not yet in place, governmental agencies offering wastewater services must file data with the Commission regarding its service areas. Contact: Kevin Neilson at (302) 739-4247.

Delaware State Housing Authority – Contact Jimmy Atkins 739-4263

The proposal is to develop 270 units on 146 acres on the south side of E. Evens Rd/Irish Hill Rd, west of Peachtree Rd., East of Viola. According to the State Strategies for Policies and Spending, the proposal is located in an Investment Level 2 area. This proposal is in the Central Kent County Census District, which has affordable housing needs. The 2003 Statewide Housing Needs Assessment indicates that of the 6,522 housing units in this CCD, 209 are substandard, and 2,491 units are occupied by low-income households. Furthermore, this area is experiencing rising home prices. For example, real estate data collected by DSHA for the third quarter 2004 indicated that the median home price was \$200,000-which is outside the affordability level of low and moderate-income households. The affordability price for low and moderate-income families is estimated to be \$133,077 for this area. The provision of units affordable to low and moderate households including first time homebuyers will help address the affordable housing needs of this area.

Delaware Emergency Management Agency – Contact Don Knox 659-3362

No comment.

Department of Education – Contact Nick Vacirca 739-4658

It is estimated that 270 dwelling units could generate 135 additional students for the Lake Forest School District.

Kent County does not have school concurrence legislation at this time. We recommend that the developer submit a package to the school district for informational purposes and work closely with the school district transportation supervisor.

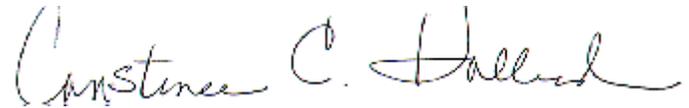
If the development is approved and built, please use the following information for school transportation planning: homes more than 1/2 mile from the nearest public road (outside the development) require streets wide enough for large school bus access and turn around (without backing) from the furthest areas within the development. Should there not be any homes more than 1/2 mile from the nearest public road, pick-up and drop-off areas at the development entrance should be included.

If any portion of the development is planned adjacent to school property, the developer should provide walking or bike paths to encourage multi-modal transportation.

This concludes our comments. 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 these comments noting whether or not specific recommendations were incorporated into the project design and the reasons therefore.

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

Sincerely,

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

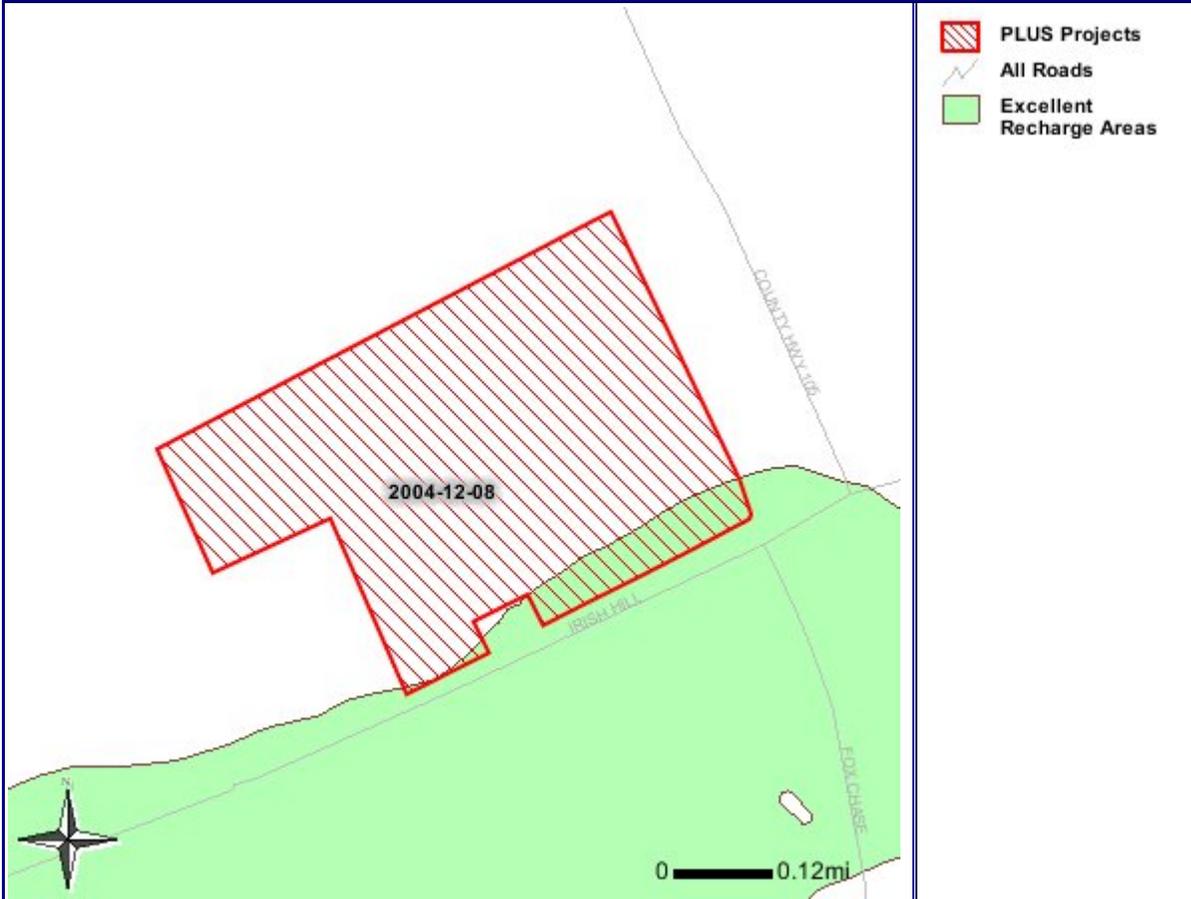
Constance C. Holland, AICP
Director

CC: Kent County
Town of Viola



Knollwood Subdivision

2004-12-08



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

