



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

December 23, 2005

Mr. Keith Kooker
Landmark Engineering
29 South State Street
Dover, DE 19901

RE: PLUS review – PLUS 2005-11-18; Stratford Village

Dear Mr. Kooker:

Thank you for meeting with State agency planners on November 30, 2005 to discuss the proposed plans for the Stratford Village project to be located at the southwest corner of the intersection of Walnut Shade Road and Peachtree Run.

According to the information received, you are seeking site plan approval for 164 units on 33 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 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.

Executive Summary

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

State Strategies/Project Location

- This project is located in Investment Level 2 according to the *State Strategies for Policies and Spending*. 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.

Street Design and Transportation

- The developer will be required to improve Walnut Shade Road and Peachtree Run to meet DelDOT's standard typical sections for the length of the site frontage.
- The developer should dedicate sufficient right-of-way at the intersection of Walnut Shade Road and Peachtree Run and contribute to the cost of designing and installing a single lane roundabout at the intersection.
- The developer should contribute to the cost of designing and installing a single lane roundabout at the intersection of Peachtree Run and Millchop Lane, if right-of-way is available. Otherwise, the developer should enter into a signal agreement for the intersection. There are currently two other developers participating in this improvement.

Natural and Cultural Resources

- It is strongly advised to avoid all hydric soil mapping units as they are susceptible to future flooding events, especially during extended periods of intense rainfall from tropical storms or nor'easters.
- The DNREC Water Supply Section has determined that it falls almost entirely with an excellent recharge area (see following map and attached map). Excellent recharge areas near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas.
- The DNREC Water Supply Section recommends that the portion of the new development within the excellent recharge area not exceed 50% impervious cover.

- The site plan proposes building townhomes over an existing drainage ditch. The Drainage Program recommends relocation of the proposed townhomes around the existing drainage. If the developer fills the drainage ditch and builds townhomes upon it, potential buyers should be made aware of that fact. A statement that the townhouse was built upon a filled drainage ditch and basement or crawlspace drainage problems are very likely should be included on the property deed.
- According to the application, there are only 3.7 acres of forest and none of this is going to be removed. The applicant may want to reevaluate this statement as there are lot lines and infrastructure in the wooded area of the parcel that will result in some clearing. The lots could be moved to the area of the parcel that is already cleared. Space could also be saved by scaling back the current roadway configuration. For example, if the large ‘traffic circle’ was a straight roadway it would utilize less space and require less tree clearing. Also, construction of one of the stormwater management ponds will require tree removal. Considering the benefit of trees in flood abatement and erosion control, trees should not be removed for a stormwater management pond. The pond should be moved to a non-forested portion of the parcel or an alternative method of stormwater control utilized.

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

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

This project is located in Investment Level 2 according to the *State Strategies for Policies and Spending*. This site is 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.

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

Nothing is known within this parcel. There is a late 19th-c. to early 20th-c., historic house (K-3549) on the out-parcel on Peachtree Run Rd. There are two historic houses (K-3563 and K-3564) on the other side of Walnut Shade Rd from this parcel. There is only a low potential for historic-period archaeological sites in this area, but there are areas of medium and possibly high potential for prehistoric-period archaeological sites associated with the two bay-basins on the property.

There is one property, the J. Rawley House, showing on Beers Atlas of 1868 to the south of this parcel, on Millchop Rd.; I believe it is far enough away from this parcel that any family cemetery associated with that house will not be on the development parcel. However, 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. We will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

The DHCA requests that the developer include sufficient landscaping to protect the historic house on Peachtree Run Rd. and the houses on Walnut Shade Rd. from visual and noise intrusions from this development. They also would like the opportunity to look for archaeological sites prior to any ground-disturbing activities.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) Peachtree Run is classified as a local road and Walnut Shade Road is classified as a major collector road. Local roads in Delaware typically have right-of-way widths ranging from 33 to 50 feet. Collector road rights-of-way vary in Delaware but are typically wider than those of local roads. DelDOT's policy is to require dedication of sufficient land to provide a minimum right-of-way width of 30 feet from the centerline on local roads and 40 feet from the centerline on collector roads. Therefore DelDOT will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- 2) The developer will be required to improve Walnut Shade Road and Peachtree Run to meet DelDOT's standard typical sections for the length of the site frontage. These improvements should include two twelve-foot travel lanes and two eight-foot shoulders on Walnut Shade Road, two eleven-foot travel lanes and two five-foot shoulders on Peachtree Run, and possibly overlaying the existing through travel lanes. DelDOT will analyze the through travel lanes' pavement section and recommend an overlay thickness to the developer's engineer if it is needed.
- 3) DelDOT will also require that a paved multi-modal path, located in a 15-foot wide permanent easement, be provided across the frontage of the site on both roads.
- 4) The developer should dedicate sufficient right-of-way at the intersection of Walnut Shade Road and Peachtree Run and contribute to the cost of designing

and installing a single lane roundabout at the intersection. There is currently one other developer participating in this improvement.

- 5) The developer should contribute to the cost of designing and installing a single lane roundabout at the intersection of Peachtree Run and Millchop Lane, if right-of-way is available. Otherwise, the developer should enter into a signal agreement for the intersection. There are currently two other developers participating in this improvement.
- 6) The developer's site engineer should contact Mr. Brad Herb, the project manager for Kent County, regarding specific requirements for streets and access. He may be reached at (302) 266-9600.

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

Soils

Based on the Kent County soil survey Sassafras, Rumford, Woodstown, Fallsington, Pocomoke and Johnston were mapped in the immediate vicinity of the proposed project. Sassafras and Rumford are well-drained upland soils that, generally, have few limitations for development. 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. Pocomoke is a very poorly-drained (hydric) soil associated with non-floodplain wetland conditions, while Johnston is a very poorly-drained (hydric) soil associated with floodplain wetland conditions – both of these soils have the highest severity level for development.

It is strongly advised to avoid all hydric soil mapping units as they are susceptible to future flooding events, especially during extended periods of intense rainfall from tropical storms or nor'easters.

Wetlands

Statewide Wetland Mapping Project (SWMP) maps indicate the presence of Palustrine Forested and farmed wetlands on the project site. Because there is strong evidence that federally regulated wetlands exist on site, a wetland field delineation, in accordance with the methodology established by the Corps of Engineers Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified Corps of Engineers through the Jurisdictional Determination process.

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.

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.

It is also recommended that the Farm Services Agency of the USDA be contacted to assess whether the 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 USDA. The contact person for assessing a parcel’s cropping history is Sally Griffin at the USDA – she can be reached by phone at 678-4182.

Impervious Cover

Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline. Based on analyses of 2002 aerial photography by the University of Delaware, the Murderkill watershed, at that time, had about 8.1 percent impervious cover. Although this data is almost 4 years old and likely an underestimate - it illustrates the importance of a proactive strategy to mitigate for predictable and likely cumulative environmental impacts. Since the amount

of imperviousness generated by this project (reported as 25 % but likely to be somewhat higher) is significantly above the desirable watershed threshold of 10 percent, the applicant is strongly advised to pursue best management practices (BMPs) that mitigate or reduce some of the most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials (“pervious pavers”) in lieu of asphalt or concrete in conjunction with an increase in forest cover via preservation or additional tree plantings – are examples of practical BMPs that could easily be implemented to reduce surface imperviousness.

TMDLs

With the adoption of Total Maximum Daily Loads (TMDLs) as a “nutrient-runoff-mitigation strategy” for reducing nutrients in the Murderkill River 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. Nutrient reductions prescribed under TMDLs are assigned to those watersheds or basins on the basis of recognized water quality impairments. In the Murderkill watershed, the primary source of water quality impairment is associated with nutrient runoff from agricultural and/or residential development. In order to mitigate for the aforementioned impairments, a post-development TMDL reduction level of 50 and 30 percent will be required for nitrogen and phosphorus, respectively. Compliance with the post-development TMDL nutrient loading reduction requirements will be assessed via nutrient budget protocol – 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. This post-development loading rate is then compared with the pre-development loading rate as a means to assess whether the project meets the acceptable TMDL reduction levels. Based on a preliminary evaluation of this project using this model, the development as currently conceived **does not** meet TMDL nutrient reduction requirements for nitrogen and phosphorus – the applicant is strongly advised to consider the use of appropriate BMPs and Best Available Technologies (BATs) to ensure compliance. Examples of BMPs or BATs that should be used to significantly reduce nutrient loading from this project, include: practices that prevent or mitigate for surface imperviousness; reductions in forest cover removal; maintenance of recommended wetland buffer widths; and the use of innovative or “green-technology” stormwater methodologies. The applicant is encouraged to consider all of the above-suggested BMPs or BATs to ensure that these reductions are attained. We suggest 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 739-9939 for the acceptable model protocol.

Water Resource Protection Areas

The DNREC Water Supply Section has determined that it falls almost entirely within an excellent recharge area (see following map and attached map). Excellent recharge areas near-surface areas within which precipitation infiltrates the land surface to the unconfined aquifer at a more rapid rate than other areas.

The DNREC Water Supply Section recommends that the portion of the new development within the excellent recharge 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 change in impervious cover is from 0% to approximately 25%. This figure was provided by the developer. As impervious cover increases, the ability of the surficial aquifer is limited. It is recommended that steps be taken to move open space area in the development from the small northern tip to the area that impacts the excellent recharge area to decrease the percentage of impervious cover.

For more information refer to the Final: 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

and

Ground-Water Recharge Design Methodology:

http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_supp_1_final.pdf

Map of Stratford Village PLUS 2005-10-02, with excellent recharge in green with affected parcels outlined in light blue.



Water Supply

The project information sheets state water will be provided to the project by Tidewater Utilities via a central water system. DNREC records indicate that the project is located within the public water service area granted to 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 302-739-9944.

Sediment and Erosion Control/Stormwater Management

Requirements:

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

Comments:

1. The submitted plus plans are showing stormwater basin locations, however the type of basins are unknown; it appears that the basin is out falling to Peachtree Road. This area is know as a low poorly drained area with a small section of Fallsington loam, Rumford, Woodstown sandy loam and Woodstown loam mostly B and C soils. A full soils report will be required with borings, ground and seasonal high water tables.
2. 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 shown in the wooded areas.
3. 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.
4. 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.
5. A letter of no objection to re-recording will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.
6. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.
7. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.

Drainage

The site plan proposes building townhomes over an existing drainage ditch. The Drainage Program recommends relocation of the proposed townhomes around the existing drainage. If the developer fills the drainage ditch and builds townhomes upon it, potential buyers should be made aware of that fact. A statement that the townhouse was built upon a filled drainage ditch and basement or crawlspace drainage problems are very likely should be included on the property deed.

The Drainage Program encourages the elevation of rear yards to direct water towards the streets for accessible maintenance. The Drainage Program recognizes the need for catch basins in rear yards in certain cases. Catch basins placed in rear yards will need to be clear of obstructions and be accessible for maintenance. Decks, sheds, fences, and kennels should not be placed along the storm drain or near the catch basin. Deed restrictions should be placed on the property to ensure maintenance access.

The Drainage Program requests the engineer take precautions 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 storm water. The Drainage Program requests the engineer check existing downstream ditches and pipes for function and blockages prior to the construction of townhomes. Notify downstream landowners of the change in volume of water being released on them.

This project is within the Murderkill River Watershed, a designated critical area, with a promulgated Total Maximum Daily Load (TMDL). Preserve existing riparian buffers to aid in the reduction of nutrients, sediment, and other pollutants. For the further enhancement of water quality in the Murderkill watershed, the Drainage Program encourages additional widths of vegetated buffers and other water quality measures on this project.

Forest Preservation

According to the application, there are only 3.7 acres of forest and none of this is going to be removed. The applicant may want to reevaluate this statement as there are lot lines and infrastructure in the wooded area of the parcel that will result in some clearing. The lots could be moved to the area of the parcel that is already cleared. Space could also be saved by scaling back the current roadway configuration. For example, if the large 'traffic circle' was a straight roadway it would utilize less space and require less tree clearing. Also, construction of one of the stormwater management ponds will require tree removal. Considering the benefit of trees in flood abatement and erosion control, trees should not be removed for a stormwater management pond. The pond should be moved to a non-forested portion of the parcel or an alternative method of stormwater control utilized.

DNREC recommends clearing of trees not occur April 1st to July 31st to reduce impacts to nesting birds and other wildlife species that utilize forests for breeding. Larger, mature trees should be left intact.

Open Space

PLUS materials indicate that 16.4 acres are proposed for open space. In areas set aside for passive open space, the developer is encouraged to consider establishment of additional forested areas or meadow-type grasses. Once established, these ecosystems provide increased water infiltration into groundwater, decreased run-off into surface water, air quality improvements, and require much less maintenance than traditional turf grass, an important consideration if a homeowners association will take over responsibility for maintenance of community open spaces.

Open space containing forest and/or wetlands should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

Nuisance Waterfowl

Stormwater management ponds that remain in the site plan may attract waterfowl like resident Canada geese and mute swans. High concentrations of waterfowl in ponds create water-quality problems, leave droppings on lawn and paved areas and can become aggressive during the nesting season. Short manicured lawns around ponds provide an attractive habitat for these species. We recommend native plantings of tall grasses, wildflowers, shrubs, and trees at the edge and within a buffer area (50 feet) around the perimeter. Waterfowl do not feel safe when they can not see the surrounding area for possible predators. These plantings should be completed as soon as possible as it is easier to deter geese when there are only a few than it is to remove them once they become plentiful. The Division of Fish and Wildlife does not provide goose control services, and if problems arise, residents or the home-owners association will have to accept the burden of dealing with these species (e.g., permit applications, costs, securing services of certified wildlife professionals). Solutions can be costly and labor intensive; however, with proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Recreation

DNREC recommends that sidewalks be built fronting at least one side of residential streets 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, parks, public mass transit stops, schools, stores, work, etc.

The Division of Parks and Recreation conducted a telephone survey of Delaware residents to gather information on outdoor recreation patterns and preferences as well as other information on their landscape perception. These findings are the foundation of the 2003-2008 Statewide Comprehensive Outdoor Recreation Plan (SCORP) providing guidance for investments in needed outdoor recreation facilities. The high and moderate facility needs in Kent County are listed below. Consideration should be given to incorporate some of these recreation opportunities into the project. For additional information about the outdoor recreation priorities, contact Bob Ehemann at 739-9235.

High priorities are Walking or Jogging Paths, Bike Paths, Swimming Pools, Picnic Areas, Playgrounds and Fishing Areas. Moderate priorities are Skate Facilities, Hiking Trails, Baseball/Softball Fields, Campgrounds, Soccer Fields, Volleyball Courts, Basketball Courts and Canoe/Kayak Access.

Underground Storage Tanks

There is one active LUST sites located near the proposed project:

Ernie's Country Store, Facility # 1-000200, Project #s K9506120 and K9812211

No environmental impact is expected from the above active LUST site. 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 with nitrile rubber gaskets in the contaminated areas.

Solid Waste

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

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 12.6 tons (25,172.3 pounds) per year of VOC (volatile organic compounds), 10.4 tons (20,841.0 pounds) per year of NO_x (nitrogen oxides), 7.7 tons (15,376.8 pounds) per year of SO₂ (sulfur dioxide), 0.7 ton (1,368.8 pounds) per year of fine particulates and 1,052.8 tons (2,105,629.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 5.1 tons (10,153.1 pounds) per year of VOC (volatile organic compounds), 0.6 ton (1,117.2 pounds) per year of NO_x (nitrogen oxides), 0.5 ton (927.1 pounds) per year of SO₂ (sulfur dioxide), 0.6 ton (1,196.3 pounds) per year of fine particulates and 20.6 tons (41,158.5 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 2.0 tons (4,024.0 pounds) per year of NO_x (nitrogen oxides), 7.0 tons (13,996.4 pounds) per year of SO₂ (sulfur dioxide) and 1,032.2 tons (2,064,471.4 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	12.6	10.4	7.7	0.7	1052.8
Residential	5.1	0.6	0.5	0.6	20.6
Electrical Power		2.0	7.0		1032.2
TOTAL	17.7	13.0	15.2	1.3	2105.6

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 2.0 tons of nitrogen oxides per year and 7.0 tons of sulfur dioxide per year.

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

“ENERGY STAR qualified homes are independently verified to be at least 30% more energy efficient than homes built to the 1993 national Model Energy Code or 15% more efficient than state energy code, whichever is more rigorous. These savings are based on

heating, cooling, and hot water energy use and are typically achieved through a combination of:

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

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

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

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

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

- a. **Fire Protection Water Requirements:**
 - Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers.
 - Where a water distribution system is proposed for townhouse type dwelling sites, the infrastructure for fire protection water shall be provided, including the size of water mains.

- b. **Fire Protection Features:**
 - 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 Peachtree Run 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
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Townhouse 2-hr separation wall details shall be shown on site plans
- 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

Neither the Delaware Department of Agriculture nor the Delaware Forest Service has any objections to the Stratford Village application. The site is located on a long-range designated controlled development area. The *Strategies for State Policies and Spending* encourages environmentally responsible development in areas within a Growth Level 2 Zone. We request that you consider limiting impervious cover as much as possible when designing this site. This site is a part of an “excellent recharge” area. The State of Delaware has mapped all ground water potential recharge areas. An “excellent” rating is the second highest rating and designates an area as having important groundwater recharge qualities. 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.

Right Tree for the Right Place

The Delaware Department of Agriculture Forest Service encourages the developer to use the “Right Tree for the Right Place” for any design considerations. This concept allows for the proper placement of trees to increase property values in upwards of 25% of appraised value and will reduce heating and cooling costs on average by 20 to 35 dollars per month. In addition, a landscape design that encompasses this approach will avoid future maintenance cost to the property owner and ensure a lasting forest resource.

Native Landscapes

The Delaware Department of Agriculture and the Delaware Forest Service encourages the developer to use native trees and shrubs to buffer the property from the adjacent land-use activities near this site. A properly designed forested buffer can create wildlife habitat corridors and improve air quality to the area by removing six to eight tons of carbon dioxide annually and will clean our rivers and creeks of storm-water run-off pollutants. To learn more about acceptable native trees and how to avoid plants considered invasive to our local landscapes, please contact the Delaware Department of Agriculture Plant Industry Section at (302) 698-4500.

Tree Mitigation

The Delaware Forest Service encourages the developer to implement a tree mitigation program to replace trees at a 1:1 ratio within the site and throughout the community. This will help to meet the community's forestry goals and objectives and reduce the environmental impacts to the surrounding natural resources. To learn more, please contact our offices at (302) 349-5754.

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 164 townhome units on 33 acres located in the southwest corner of the intersection of Walnut Shade Road, and Peachtree Run, south of Camden. According to the State Strategies Map, the proposal is located in Investment Level 2 area. DSHA supports this proposal because residents will have proximity to existing services, markets, and employment opportunities. Furthermore, the proposal targets units for first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA, the median home price in the Central Kent County area is \$225,750. However, families earning 80% of Kent County's median income only qualify for mortgages of \$147,099. We recommend that some of the units be set-aside at this price level to ensure that working households have access to affordable housing.

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

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

Sincerely,



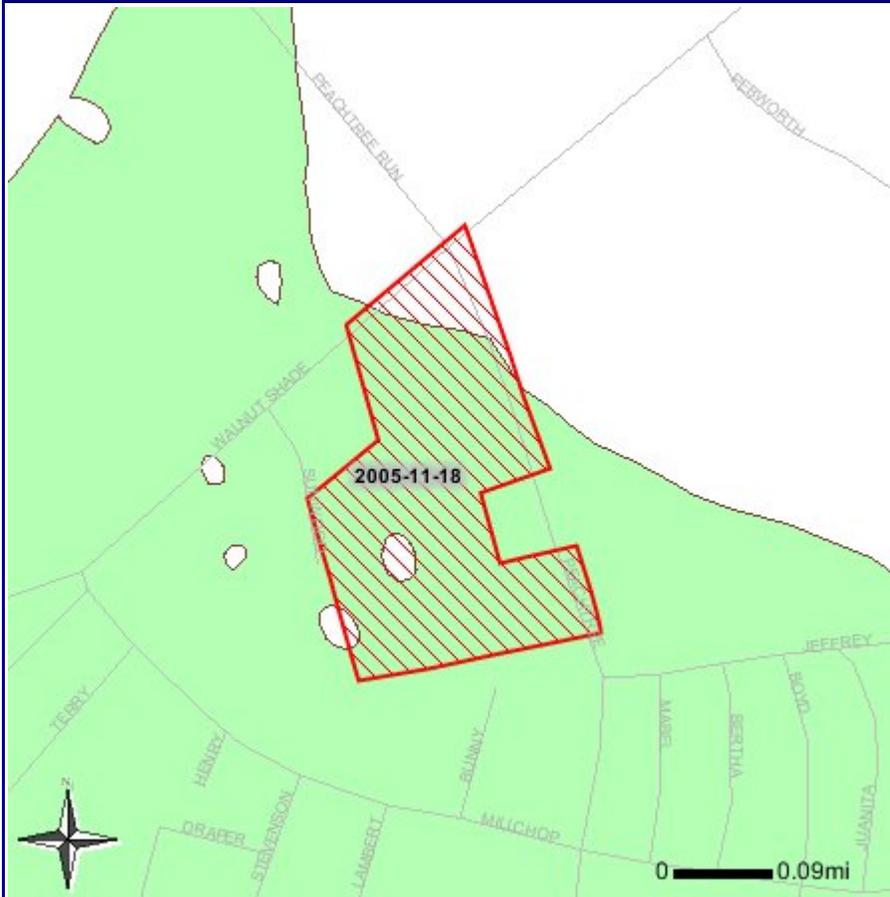
Constance C. Holland, AICP
Director

CC: Kent County



Stratford Village

2005-11-18



- PLUS Projects
- All Roads
- Excellent Recharge Areas

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

