



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

March 27, 2007

Mr. Marco Boyce
Morris & Ritchie Associates
18 Boulden Circle
New Castle, De 19720

RE: PLUS review – PLUS 2007-02-06; Berkshire

Dear Mr. Boyce:

Thank you for meeting with State agency planners on February 28, 2007 to discuss the proposed plans for the Berkshire project to be located at 342 Peach Basket Road in Felton.

According to the information received, you are seeking site plan approval through the Town of Felton for 387 residential units on 65.25 acres. This project has been reviewed through PLUS twice before. The first review was PLUS 2004-06-18 on June 30, 2004 for a project called Twin Lakes. This project was comprised of 170 single family homes. Twin Farms was reviewed again as PLUS 2005-06-10 on June 22, 2005. The second review was triggered because the project had been changed to include 129 single family homes and 92 townhomes. This third review involves a change in name and another increase in density to 387 townhomes.

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

Executive Summary

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

State Strategies/Project Location

- This project is located in Investment Levels 1 and 2 according to the *Strategies for State Policies and Spending*. This site is also located in the Town of Felton. Investment Levels 1 and 2 reflect areas that are already developed in an urban or suburban fashion, where infrastructure is existing or readily available in the near future, and where future redevelopment or infill projects are expected and encouraged by State policy. Our office has no objections to the proposed development of this project in accordance with the relevant Town codes and ordinances.

Street Design and Transportation

- Street stubs are recommended to the Clarence E. Voshell property to the south and the Robert G. Wyatt property to the east.
- DelDOT will require the developer to improve Peachbasket Road, from Delaware Route 12 to Tomahawk Lane (Kent Road 244) to meet DelDOT's local road standards.
- A left turn lane will be required on Peachbasket Road at the entrance serving Sunfish Drive. Presently that entrance is proposed opposite an existing commercial entrance. Such a location would be appropriate except that the short distance separating Sunfish Drive and Tomahawk Lane would not provide adequate deceleration and storage for left turns onto both roads. One solution, which we request be explored, would be for the developer to acquire the Janice Hamilton property and relocate Sunfish Drive opposite Tomahawk Lane. If the developer cannot do that, we recommend that they locate the entrance as far west of currently proposed location as possible, perhaps 200 to 300 feet.
- The 90 degree parking in front of each building is problematic from a traffic standpoint. Drivers backing out can cause a hazard, especially near the development entrances. It is recommended that the developers explore opportunities for alley parking where possible.

Natural and Cultural Resources

- Approximately 80% of the mapped soils on this parcel are wetland associated (hydric) Fallsington and Carmichael soils. These soils have high water tables and are prone to flooding and surface water ponding. As such, they are considered problematic for urban development. It is recommended that the developer avoid these soils. Basements and crawlspaces in this development are not recommended. Lots 1-36 and 129-152 appear to be the most effected.
- There is a history of drainage problems in the area. The ditch that is the intended outfall for the stormwater management basins may prove to be inadequate for that purpose. A downstream analysis will be required.
- A soils investigation supporting the stormwater management facility design will be required.

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 Levels 1 and 2 according to the *Strategies for State Policies and Spending*. This site is also located in the Town of Felton. Investment Levels 1 and 2 reflect areas that are already developed in an urban or suburban fashion, where infrastructure is existing or readily available in the near future, and where future redevelopment or infill projects are expected and encouraged by State policy. Our office has no objections to the proposed development of this project in accordance with the relevant Town codes and ordinances.

We would like to thank the developer for making two important changes to the site plan that were suggested in our previous PLUS reviews. These two changes are the interconnection of the two sides of the site (across the power line easement) and the interconnection of the development to the Town street network through Honeybrook Lane.

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

Nothing is known in this parcel. The Mrs. Needles House (K-2861; Beers Atlas 1868) is on the parcel cut out of the main parcel. The 1937 USDA aerial photograph indicates that farm buildings behind the Needles House may extend into the parcel. There is a small area of medium potential for a prehistoric archaeological site here. Two historic

properties are located northeast of the parcel, and a third is located southwest of the parcel, all across Peach Basket Rd.

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

If the developer discovers that the area of Fan Branch within the parcel is not prior-converted wetlands and is subject to a Corps of Engineers permit, he will be required to consult with this office under Sec. 106 of the National Historic Preservation Act of 1966 (as amended), and might be required to undertake archaeological survey. The DHCA will be happy to help him through this process.

They request that the development include sufficient landscaping to protect the nearby historic properties from any visual or noise intrusions.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) Two years ago, when this development was reviewed under the name Twin Lakes, DelDOT recommended that stub streets be provided to the Clarence E. Voshell property to the south and the Robert G. Wyatt property to the east. Why are stub streets not shown in these locations? DelDOT recognizes and appreciates that a stub street is proposed to the Robert & Joy Courtney property.
- 2) Peachbasket Road is classified as a local road. 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. Therefore they will require right-of-way dedication along the frontage to provide any additional width needed from this project.
- 3) DelDOT will also require that a 15-foot wide permanent easement be provided across the frontage of the site for a future 10-foot wide shared use path.
- 4) DelDOT will require the developer to improve Peachbasket Road, from Delaware Route 12 to Tomahawk Lane (Kent Road 244) to meet DelDOT's local road

standards. Those standards include 11-foot travel lanes and 5-foot shoulders. An overlay of the existing roadway may also be required.

- 5) A left turn lane will be required on Peachbasket Road at the entrance serving Sunfish Drive. Presently that entrance is proposed opposite an existing commercial entrance. Such a location would be appropriate except that the short distance separating Sunfish Drive and Tomahawk Lane would not provide adequate deceleration and storage for left turns onto both roads. One solution, which we request be explored, would be for the developer to acquire the Janice Hamilton property and relocate Sunfish Drive opposite Tomahawk Lane. If the developer cannot do that, we recommend that they locate the entrance as far west of currently proposed location as possible, perhaps 200 to 300 feet.
- 6) The proposed layout, which features 90-degree parking in front of every building, frequently on both side of the street at once and in some cases on curves, does not lend itself to good traffic operations. Drivers backing out between parked vehicles have difficulty seeing and being seen by vehicles already on the street. It is recommended that the developer consider using alleys, especially on the blocks closest to development entrances, to reduce the amount of this parking.
- 7) The developer's site engineer should contact the DelDOT project manager for Kent County, Mr. Brad Herb, regarding specific requirements for access and off-site improvements. The location of Sunfish Drive, in particular, is an issue that they should resolve with him as soon as possible. Mr. Herb 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 update, Hambrook, Fallsington, and Carmichael were mapped on subject parcel. Hambrook is a well-drained upland soil that, generally, has few limitations for development. Fallsington and Carmichael are poorly-drained wetland associated (hydric) soils that have severe limitations for development. Approximately 80% +/- of the mapped soils on this parcel are wetland associated (hydric) Fallsington and Carmichael soils.

As mentioned previously, a significant portion of parcel's land area (estimated 80% +/-) contains wetland associated (hydric) soils. Hydric soils typically have a seasonal high water table at or near the soil surface (within one foot of soil surface or less). Building in

such soils is likely to leave prospective residents of this and adjoining properties susceptible to future flooding problems from groundwater-driven surface water ponding, especially during extended periods of high-intensity rainfall events such as tropical storms/hurricanes or “nor’easters.” This is in addition to increased flooding probabilities from surface water runoff emanating from future created forms of structural imperviousness (roof tops, roads, and sidewalks). It is strongly recommended that the applicant avoid these soils entirely.

Based on conditions set forth under Chapter 187, Section 57 G (Article XI Design Requirements and Standards) provisions of the Kent County Code, adverse physical conditions (i.e., poor soil drainage) not amenable to improvement render a parcel unsafe or unacceptable for development. Since most of the soils on this parcel are poorly-drained wetland associated hydric soils (i.e., Fallsington and Carmichael) that naturally function to mitigate or absorb excess surface floodwater runoff, their removal, filling or alteration will result in significant unavoidable increases in on and off-site frequency, intensity and duration of flooding events. Increased surface imperviousness will further compound these adverse physical impacts. Therefore, the mapped Fallsington and Carmichael soils should be avoided.

Wetlands

According to the Statewide Wetland Mapping Project (SWMP) mapping, palustrine farmed wetlands were mapped in much of the northeastern portion of subject parcel.

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 the U.S. Army Corps of Engineers (USACE, or “the Corps”) 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.

Wetland Permitting Information

Impacts to palustrine wetlands are regulated by the Corps 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 Corps 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.

Because there is strong evidence that federally regulated wetlands exist on site, a field wetland delineation, in accordance with the methodology established by the Corps Wetlands Delineation Manual, (Technical Report Y-87-1) should be conducted. Once complete, this delineation should be verified by the Corps through the Jurisdictional Determination process.

Site plans indicate that structures will impact Fan Branch. Impacts to streams and associated riparian wetlands are regulated by the Subaqueous Land Section, Division of Water Resources, and the Corps.

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 Corps. The contact person is Sally Griffin; she can be reached at 678-4182.

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.

Impervious Cover

Based on a review of the PLUS application, post-development surface imperviousness is estimated to be about 27 percent. However, given the scope and density of this project, this estimate is **clearly a significant underestimate**. The applicant’s apparent use of natural areas (wetlands or buffers) and/or areas of functional utility (stormwater management areas) to meet the County’s minimum open space requirements, artificially lowers the estimated amount of this constructed surface imperviousness from this project, resulting in a significant underestimate of its actual environmental impacts. Moreover, credit for open space should not include potential jurisdictional wetlands. For that reason, a Corps-approved wetlands delineation should be conducted prior to the calculations for open space and/or surface imperviousness are performed. Finally, it is also apparent that some constructed forms of surface imperviousness (i.e., rooftops,

sidewalks, and roads) were omitted from the applicant's calculation for surface imperviousness, further contributing to an artificially low estimate of this parcel's surface imperviousness and its proportionate negative environmental impacts. It is strongly recommended, therefore, that the applicant address all of the above-mentioned concerns in the finalized calculation for surface imperviousness.

Studies have shown a strong relationship between increases in impervious cover to decreases in a watershed's overall water quality. It is strongly recommended that the applicant implement best management practices (BMPs) that reduce or mitigate some of its most likely adverse impacts. Reducing the amount of surface imperviousness through the use of pervious paving materials ("pervious pavers") in lieu of asphalt or concrete in conjunction with an increase in forest cover preservation or additional tree plantings are some examples of practical BMPs that could easily be implemented to help reduce surface imperviousness.

TMDLs

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Murderkill watershed. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Although TMDLs are required by federal law, states are charged with developing and implementing standards to support these desired use goals. In the Murderkill watershed, a post-development TMDL reduction level of 30 and 50 percent will be required for nitrogen and phosphorus, respectively. Additionally a TMDL reduction level of 32 percent reduction will be required for bacteria.

TMDL Compliance through the Pollution Control Strategy (PCS)

As stated above Total Maximum Daily loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Murderkill Watershed. The TMDL calls for a 30 percent reduction for nitrogen and 50 percent for phosphorus from baseline conditions. The TMDL also calls for a 32 percent reduction in bacteria from baseline conditions. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices such as wider vegetated buffers adjacent to wetlands, increasing the amount of passive, wooded open space, and the use of "green-technology" stormwater management treatment trains. Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.

Water Supply

The information provided indicates that The Town of Felton will provide well water to the proposed projects through a central public water system. DNREC files reflect that The Town of Felton does not currently hold a certificate of public convenience and necessity (CPCN) to provide public water in these areas. They will need to file an application for a CPCN with the Public Service Commission, if they have not done so already. Information on CPCN requirements and applications can be obtained by contacting the Public Service Commission at 302-739-4247. Should an on-site public well be needed, it must be located at least 150 feet from the outermost boundaries of the project. 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

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 our office prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place.
2. The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to our office. 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.

3. 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.
4. 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.
5. All drainage ways and storm drains must be contained within drainage easements and clearly shown on the plan to be recorded.
6. It appears that the intended outfall is a ditch at the southeastern corner of the property. This area has historically experienced drainage problems. Although a drainage improvement project was undertaken by the Town of Felton, DNREC Drainage Section and the Kent Conservation District downstream from the intended outfall, this ditch may still be inadequate. A downstream analysis will be required to determine if there is sufficient downstream capacity to provide an adequate outfall for this project.
7. 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.
8. 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. Maintenance responsibility shall be established during the plan review and approval process. [Ref 10.3.11-12, DE Sediment and Stormwater Regulations].

Comments:

1. 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.
2. 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.
3. The site contains large areas of Fallsington soils, which are poorly drained and unsuited to some community development. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision. The construction of basements may be questionable.
4. The parcel falls within the Murderkill Watershed which has a promulgated Total Maximum Daily Load (TMDL) for nutrients and bacteria. Applicants are encouraged to preserve any existing riparian buffers to aid in the reduction of nutrients, sediment, and other pollutants. For the further enhancement of water quality, additional widths of vegetated buffers and other water quality measures are encouraged to be implemented on this project. Additionally, the applicant should be aware that additional best management practices for storm water quality may be required by state regulation and county ordinances due to the project location in an impaired waterway.
5. The proposed method of stormwater management for the site in the application is listed as stormwater ponds and infiltration. All ponds constructed for stormwater management must be designed and constructed in accordance with the USDA NRCS Small Pond Code 378, dated Sept 1990, as approved for use in Delaware. Infiltration practices have certain limitations on their use on certain sites [10.3.15] including the requirement for an overflow system with measures to provide non-erosive velocity of flow along the length and at the outfall.
6. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.
7. A letter of no objection to recordation will be provided once the detailed Sediment and Stormwater Management plan has been approved.

Drainage

1. The Drainage Program is aware of current and historical drainage problems in this area. The drainage to the east of this project was improved in 1990 by way of a drainage improvement project on Fan Branch involving the Town of Felton, DNREC Drainage Program, and the Kent Conservation District. The Drainage Program requests that the engineer take precautions to ensure that 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. A downstream analysis is requested to determine if there is sufficient downstream capacity to provide an adequate outfall for this project. Notify downstream landowners of the change in volume of water released on them.
2. The Statewide Wetland Mapping Project (SWMP) maps indicate the presence of farmed palustrine wetlands on the property. A portion of the farmed ground on this property is mapped as wetland that has been converted to cropland. It should be noted of the prior converted wetland on this property, while suitable for agricultural purposes, may not provide adequate residential drainage.
3. The northeastern portion of the property is mapped as Elkton soils which have poor natural drainage, very slow permeability of the subsoil and a water table that remains high for a large part of the year. Limitations for foundations for homes of three stories or less is severe due to a high water table. Crawl spaces and basements within this area are very questionable. If lots 1-36 and lots 129-152 are allowed to be developed, especially with crawl spaces and basements, the Drainage Program requests that a note be attached to the deed informing the prospective buyers that future drainage problems are very likely.
4. The Drainage Program wishes to be on record that drainage complaints within, and downstream of, this subdivision shall be directed to the Town of Felton. It shall be the responsibility of the Town of Felton to provide resources to investigate and remedy drainage concerns resulting from this subdivision.
5. Trees and shrubs planted within drainage easements should be spaced to allow for mechanized drainage maintenance or the reconstruction of drainage conveyances.
6. Have all drainage easements recorded on deeds and place restrictions on obstructions within the easements to ensure access for periodic maintenance or future re-construction. Future property owners may not be aware of a drainage easement on their property if the easement is only on the record plan. However, by recording the drainage easement on the deed, the second owner, and any

subsequent owner of the property, will be fully aware of the drainage easement on their property.

For questions or clarifications, please contact Jim Sullivan at 739-9921.

Open Space

The developer is encouraged to designate open space along the forested area in the eastern portion of the parcel. This will provide adequate buffers for the forest and reduce homeowner disturbance. There is opportunity for habitat enhancement along Fan Branch.

The developer is strongly encouraged to plant additional buffers along this water body. 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.

Nuisance Geese

DNREC commented on this project via PLUS 2004-06-18 and PLUS 2005-06-10 and both times they suggested that the large stormwater management pond may be very attractive to nuisance waterfowl and should be reduced in size. This aspect of the site plan still remains unchanged. 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.

It will be difficult to deter geese if they are attracted to the large pond in the plan, and from a functional standpoint, it is doubtful that the pond needs to be this big. There is not a very wide buffer around the pond and manicured lawn is very attractive to these species. A buffer (50 feet in width) comprised of native plantings, including tall grasses,

wildflowers, shrubs, and trees that block their view of the area so they do not feel as safe from predators, is recommended. This buffer will also aid in maintaining water quality so that the pond does not become choked with algae from excess nutrients. Not only could the pond become aesthetically unpleasing, but some types of algae emit a strong odor when decaying.

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 size of the ponds, proper landscaping, monitoring, and other techniques, geese problems can be minimized.

Solid Waste

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

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 29.7 tons (59,400.5 pounds) per year of VOC (volatile organic compounds), 24.6 tons (49,179.6 pounds) per year of NO_x (nitrogen oxides), 18.1 tons (36,285.6 pounds) per year of SO₂ (sulfur dioxide), 1.6 ton (3,230.0 pounds) per year of fine particulates and 2,484.4 tons (4,968,772.9 pounds) per year of CO₂ (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 12.0 tons (23,958.9 pounds) per year of VOC (volatile organic compounds), 1.3 ton (2,636.2 pounds) per year of NO_x (nitrogen oxides), 1.1 ton (2,187.7 pounds) per year of SO₂ (sulfur dioxide), 1.4 ton (2,823.1 pounds) per year of fine particulates and 48.6 tons (97,124.0 pounds) per year of CO₂ (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 4.7 tons (9,495.6 pounds) per year of NO_x (nitrogen oxides), 16.5 tons (33,028.1 pounds) per year of SO₂ (sulfur dioxide) and 2,435.8 tons (4,871,648.9 pounds) per year of CO₂ (carbon dioxide).

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	29.7	24.6	18.1	1.6	2484.4
Residential	12.0	1.3	1.1	1.4	48.6
Electrical Power		4.7	16.5		2435.8
TOTAL	41.7	30.6	35.7	3.0	4968.8

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 4.7 tons of nitrogen oxides per year and 16.5 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 Rudd 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 the main roadways leading into the community 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: Scott Blaier 698-4500

The Delaware Department of Agriculture has no objections to the proposed application. The *Strategies for State Policies and Spending* encourages environmentally responsible development in Investment Level 1 and 2 areas.

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.

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 Vicki Walsh 739-4263

This proposal is for a site plan review for 387 residential units on 65.25 acres located on the south side of Peach Basket Road at the intersection with Tomahawk Road in Felton. According to the State Strategies Map, the proposal is located in an Investment Level 1 area and inside the growth zone. 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 State Strategies Map. Furthermore, DSHA encourages residential development in Level 1 and 2 areas that are affordable to first time homebuyers. DSHA supports the fact that this proposal targets the full range of incomes including first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA shows the median income price in Kent County to be \$225,000. However, families earning respectively 100% of Kent County's median income only qualify for mortgages of \$180,115, thus creating an affordability gap of \$44,885. The provision of units within reach of families earning at least 100% of Kent County's median income would help increase housing opportunities for first time homebuyers. The DSHA recommends that some of the units be set-aside at this price level to ensure that working households have access to affordable housing.

Department of Education – Contact: John Marinucci 739-4658

This proposed development is within the Lake Forest School District boundaries. DOE offers the following comments on behalf of the Lake Forest School District.

1. Using the DOE standard formula, this development will generate an estimated 194 students.
2. DOE records indicate that the Lake Forest School Districts' *elementary schools are at or beyond 100% of current capacity* based on September 30, 2006 elementary enrollment.
3. DOE records indicate that the Lake Forest School Districts' *secondary schools are very close to 100% of current capacity* based on September 30, 2006 secondary enrollment.
4. The Superintendent of Lake Forest School District has communicated to the DOE the district's lack of capacity given the number of planned and recorded residential sub divisions within district boundaries.
5. This development will create additional elementary and secondary student population growth which will further compound the existing shortage of space.
6. The developer is strongly encouraged to contact the Lake Forest School District Administration to address the issue of school over-crowding that this development will exacerbate.
7. DOE requests developer work with the Lake Forest School District transportation department to establish developer supplied bus stop shelter ROW and shelter structures, interspersed throughout the development as determined and recommended by the local school district.

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

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

Sincerely,



Constance C. Holland, AICP
Director

CC: Town of Felton