



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

November 19, 2007

Mr. Denis Hulme
Woodin & Associates, LLC
111 Patriot Drive
Middletown, DE 19709

RE: PLUS review – PLUS 2007-10-10; Spring Arbor

Dear Mr. Hulme:

Thank you for meeting with State agency planners on October 24, 2007 to discuss the proposed plans for the Spring Arbor project to be located at the intersection of US Route 301 and Levels Road.

According to the information received, you are seeking a site plan review for 116 residential units as an expansion of the existing Spring Arbor at South Ridge subdivision.

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 Middletown 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 along with PLUS projects, 2007-10-11 (Poole) and 2007-10-13 (Kohl South), are all part of the Westown Master planned community and as such, these comments are applicable to all three projects. This particular project is located in an Investment Level 3 according to the *Strategies for State Policies and Spending*. Generally, Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. However, because these projects are part of the Westown Master planned community this development is expected and as such, has already negotiated a variety innovative agreements between various State and local agencies in order to plan for the development of this area in a comprehensive manor. We are particularly supportive of these projects as a whole because of the innovative intergovernmental and comprehensive approach employed to prepare for these developments.

Street Design and Transportation

- It appears from the plan that the western portion of the development and its proposed storm water management will encroach on the right-of-way for the future US Route 301 and more specifically the right-of-way for the ramp from westbound Levels Road extended to northbound new US 301. DeIDOT will need to work with the developer to have the ramp right-of-way incorporated in their plans and adjustments made accordingly. Also, if the berm for Southridge is to be extended to also screen Spring Arbor II, then this extension will have to be addressed as well.
- DeIDOT is having difficulty relating this proposal to Exhibit B in the Middletown Transportation Infrastructure Development Agreement. The Exhibit shows 300 age-restricted units on 115 acres in the first phase and 50 units on 19 acres in the second phase. This proposed development is for 116 units on 44 acres. If the combined total of Phase I and Phase II is greater than originally proposed, then additional contributions will be due to the Infrastructure Fund.
- Because the parcel would be served entirely by Town of Middletown streets, it is outside DeIDOT jurisdiction. However, they note that driveways are proposed along the 55-foot wide collector road right-of-way leading to the future boulevard.

As one approaches the boulevard, one would expect traffic on the collector road to increase. Therefore at some point along the collector road, it may be appropriate to eliminate the driveways directly onto it. In the DelDOT subdivision street regulations, for example, they do not allow driveways on streets serving more than 300 houses.

Natural and Cultural Resources

- Relocation of the stormwater management ponds on the Poole and Kohl South properties to a portion of the parcel not in the excellent ground-water recharge area.
- Do not exceed 20% of impervious cover in that portion of new development within the excellent ground-water recharge area. 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. However, the developments should not exceed 50% regardless.
- Reduce the impervious cover on the commercial projects to a value less than 50% dependent on the environmental assessment. 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 (Kauffman, 2005).
- There is an active Bald Eagle Nest on a property adjacent to Kohl South. Currently, this project is not within the protection zones of the nest and there are no state or federal requirements. However, the applicant should be aware that the State is in the process of drafting a more stringent level of protection that would reinstate the previous protection zones that were afforded prior to the delisting of the Bald Eagle. This would include protection zones that span a 750ft and 1320ft radius around the nest.
- To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas.

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

Office of State Planning Coordination – Contact: Herb Inden 739-3090

This project along with PLUS projects, 2007-10-11 (Poole) and 2007-10-13 (Kohl South), are all part of the Westown Master planned community and as such, these comments are applicable to all three projects. This particular project is located in an Investment Level 3 according to the *Strategies for State Policies and Spending*. Generally, Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. However, because these projects are part of the Westown Master planned community this development is expected and as such, has already negotiated a variety innovative agreements between various State and local agencies in order to plan for the development of this area in a comprehensive manor. We are particularly supportive of these projects as a whole because of the innovative intergovernmental and comprehensive approach employed to prepare for these developments.

Division of Historical and Cultural Affairs – Contact: Terrance Burns 739-5685

In reference to this particular parcel, the historic resources at State Historic Preservation Office of the Division of Historic & Cultural Affairs did show and indicate the following:

- There was no indication of a known Archaeological site, or National Register listed property on or within parcel/property, but there is a National Register listed property nearby.
- This National Register listed property is the Rumsey Farm (N-113), and it is listed on the National Register of Historic Places of the National Park Service, of the U.S. Department of the Interior. It is located off U.S. 301, on right 1.5 mile west of the railroad track, and consists of a house and farm, along with a few outbuildings (barns and sheds) affiliated or associated with it.
- Historic houses which had farm complexes or outbuildings associated with them, such as this one, Rumsey Farm (N-113), are sometimes or often associated with small, rural or family cemeteries, and they are sometimes or often nearby. Small, rural, or family cemeteries are usually located 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.
- This parcel is in a vicinity where it is a possibility that there could be a potential archaeological site on this parcel, or nearby it. Prior to any demolition or ground-disturbing activities, or before any type of construction proceeds the developer may want to hire an archaeological consultant to check or examine this parcel/property for the possibility of a cemetery here, or to see if there are any archaeological sites on it.

The State Historic Preservation Office of the Division of Historic & Cultural Affairs recommends and do hope that the developer will take these comments in to consideration. Also, if the developer would like to discuss this in further detail, contact Mr. Terence Burns, Information Resource Specialist, at the State Historic Preservation Office of the Division of Historic & Cultural Affairs at (302) 736-7400.

Department of Transportation – Contact: Bill Brockenbrough 760-2109

- 1) It appears from the plan that the western portion of the development and its proposed storm water management will encroach on the right-of-way for the future US Route 301 and more specifically the right-of-way for the ramp from westbound Levels Road extended to northbound new US 301. DelDOT will need to work with the developer to have the ramp right-of-way incorporated in their plans and adjustments made accordingly. Also, if the berm for Southridge is to be extended to also screen Spring Arbor II, then this extension will have to be addressed as well. DelDOT recommends that the developer's site engineer contact the DelDOT manager for the US Route 301 project, Mr. Mark Tudor in these regards. Mr. Tudor may be reached at (302) 760-2275.
- 2) DelDOT is having difficulty relating this proposal to Exhibit B in the Middletown Transportation Infrastructure Development Agreement. The Exhibit shows 300 age-restricted units on 115 acres in the first phase and 50 units on 19 acres in the second phase. This proposed development is for 116 units on 44 acres. If the combined total of Phase I and Phase II is greater than originally proposed, then additional contributions will be due to the Infrastructure Fund.
- 3) The site access shown is consistent with the Westtown master plan.
- 4) The proposed development is proposed for a C-3 zoning district. Is residential use truly compatible with this district, or would a rezoning be more appropriate?

- 5) Because the parcel would be served entirely by Town of Middletown streets, it is outside our jurisdiction. However, we note that driveways are proposed along the 55-foot wide collector road right-of-way leading to the future boulevard. As one approaches the boulevard, one would expect traffic on the collector road to increase. Therefore at some point along the collector road, it may be appropriate to eliminate the driveways directly onto it. In our subdivision street regulations, for example, we do not allow driveways on streets serving more than 300 houses.

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

These three projects are part of the Westown master-planned development of northwest Middletown, which has involved extensive discussions and agreements with the Department of Transportation, Department of Agriculture and other state agencies. The Westown agreements include a significant Transfer of Development Rights deed restriction that has preserved several hundred acres of prime agricultural lands and made provisions for a multi-school campus and sports complex for Appoquinimink School District.

DNREC's overarching comments and concerns on all three projects:

Impervious cover and excellent recharge area. DNREC is concerned about the high percentage of impervious cover forecasted, especially by the commercial projects:

- Poole Property – 60%
- Kohl South – 75%
- Spring Arbor – 32%

The overall amount of impervious cover is excessive because significant portions of all three parcels are located within a mapped excellent recharge area for the Town of Middletown. The Town has yet to develop source water protection ordinances, but its 2005 Comprehensive Land Use Plan expresses the intent to protect excellent-recharge areas by limiting impervious cover. Ideally, DNREC's Water Supply Section recommends that the portion of the new development within the excellent ground-water recharge area not exceed 20% impervious cover. 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. However, the development should not exceed 50% regardless.

Regional stormwater management. Because the developer has assembled several parcels for the Westown project and some are restricted as Transfer of Development Rights sending areas, he expressed the potential for master-planned stormwater management at the October 26 PLUS meeting. Such a regional approach is critical because of the percentage of impervious cover and the proximity of these projects to the impaired Appoquinimink and Chesapeake Bay watersheds.

DNREC also recommends that the applicant implement best **management practices** (BMPs) that reduce or mitigate some of the most likely adverse impacts of the high post-construction percentage of impervious cover. Some examples of practical BMPs that could be implemented to help mitigate surface imperviousness impacts are: 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; and using green-technology stormwater management treatment trains.

Pollution reduction requirements. As mentioned, Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Appoquinimink Watershed. The TMDL calls for a 60% reduction for nitrogen and phosphorus from baseline conditions. Additionally, an 8% reduction in bacteria will also be required. The Department developed an assessment tool to evaluate how your proposed development may reduce nutrients to meet the TMDL requirements. BMPs such as those listed in the preceding paragraph may help you achieve additional reductions.

In addition, the Spring Arbor and Poole projects are located adjacent to Sandy Branch, a headwater stream in the Chesapeake Bay watershed. The Chesapeake Bay has been degraded by nutrients and bacteria. The State of Delaware has signed on to a regional agreement to reduce water quality impacts in the Chesapeake Bay and its watershed by approximately 47% and 44% for nitrogen and phosphorus respectively. Protection of headwater streams can have a significant impact on downstream water quality and should be a priority.

These issues and others will be discussed in more detail below, consolidating comments for all three Westown projects.

Water recharge and water quality

The DNREC Water Supply Section Ground-Water Protection Branch has reviewed the above referenced PLUS projects and determined that a significant portion falls within an excellent ground-water recharge



Kohl South – Excellent Recharge Area shown in green

area for the Town of Middletown (see attached map). The site plans for Kohl South and Poole show a stormwater management pond in the area of excellent recharge.

As noted above, the developer's projected post-construction impervious cover ranges from 32% for Spring Arbor II to 60% for Poole to 75% for Kohl South. For Poole and Kohl South, a large percentage of this cover is parking and roadways. This land use produces petroleum hydrocarbons, other organics, metals, and other inorganics (DNREC, 1999). These contaminants associated with this land use could easily infiltrate the unconfined aquifer and compromise water quality. The developments as proposed exceed DNREC recommendations.

The Town of Middletown has yet to develop source water protection ordinances. Their 2005 Comprehensive Land Use Plan expresses the intent to protect excellent-recharge areas by limiting impervious cover.

To show that the region's future water supply is adequate and properly protected for quality and quantity, the Town should make public all information regarding the excellent recharge areas, well head protection areas, source water protection and Water Resource Protection Areas. At a minimum this information should include any analysis, findings, recommendations, land use actions, land preservation agreements and land conservation agreements.

New Castle County defines excellent ground-water recharge potential areas as 'recharge areas.' Recharged areas are characterized as deposits of the coarser grained material have the best ability to transmit water vertically through the unsaturated zone to the water table. The NCC recharge areas were mapped using the methods described in the Delaware Geological Survey Open File Report No. 34, "Methodology for Mapping Ground-Water Recharge Areas in Delaware's Coastal Plain" (August 1991), and depicted in a series of maps prepared by the Delaware Geological Survey (Butoryak and Tally, 1993).

The construction phase of stormwater management ponds requires excavation, hauling, and grading. The heavy equipment used in this phase has the capacity to compact and degrade the structure of the strata that defines the area as an excellent ground water recharge area. Changes to the structural soil properties may cause significant reduction in recharge capacity. Installing storm-water management ponds in excellent ground-water recharge areas has the potential to contaminate the ground water beneath it and infiltrate into the aquifer.

DNREC recommends:

- Relocation of the stormwater management ponds on the Poole and Kohl South properties to a portion of the parcel not in the excellent ground-water recharge area.
- Do not exceed 20% of impervious cover in that portion of new development within the excellent ground-water recharge area. 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. However, the developments should not exceed 50% regardless.

A water balance calculation (environmental assessment) will be necessary to determine the quantity of clean water to be recharged via a recharge basin (Thornthwaite, 1957). 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.

- Reduce the impervious cover on the commercial projects to a value less than 50% dependent on the environmental assessment. 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 (Kauffman, 2005).
- In addition, because the excellent ground water recharge area can so quickly affect the underlying aquifer if contaminants are spilled or discharged across the area, the storage of hazardous substances or wastes should not be allowed within the area unless specific approval is obtained from the relevant state, federal, or local program.

References

Butoryak, Kathleen R. , and Talley, John H., 1993, Delineation of Ground-Water Recharge Resource Protection Areas in the Coastal Plain of New Castle County, Delaware: Delaware Geological Survey Project Report for the Water Resources Agency for New Castle County, p. 26.

Delaware Department of Natural Resources and Environmental Control (2005): *Source Water Protection Guidance Manual for the Local Governments of Delaware*: Dover, DE, 144 p.
http://www.wr.udel.edu/publications/SWAPP/swapp_manual_final/swapp_guidance_manual_final.pdf

Kauffman, G.J., Wozniak, S.L., and Vonck, K.J., 2005, *Delaware Ground-Water Recharge Design Manual*: Newark, DE, Water Resources Agency, University of Delaware, p. 31.
<http://www.wr.udel.edu/swaphome/Publications/SWPguidancemanual.html>

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

(For more information on Source water Protection, contact Anne Mundel, 739-9945.)

Total Maximum Daily Loads (TMDL) Requirements

Total Maximum Daily Loads (TMDLs) for nitrogen and phosphorus have been promulgated through regulation for the Appoquinimink 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 Appoquinimink watershed, a post-development TMDL reduction level of 60% will be required for both nitrogen and phosphorus. Additionally, an 8% reduction in bacteria will also be required.

To date, TMDLs have not been developed for the Bohemia watershed, but the applicant is still advised to implement Best Management Practices to reduce nutrient runoff.

The Department developed an assessment tool to evaluate how your proposed developments may reduce nutrients to meet the TMDL requirements. Additional reductions may be possible through the implementation of Best Management Practices such as:

- Reducing surface imperviousness
- Increasing passive wooded open space
- Using appropriate green-technology stormwater management treatment trains
- Implementing a minimum 100-foot buffer from any riparian wetlands

(Contact Lyle Jones at 302-739-9939 for more information on the assessment tool.)

Soils and Wetlands

Poole: Based on the New Castle County soil survey Matapeake, Sassafras, and two steeply sloping soil mapping phases associated with Collington (denoted on the map as CsC and CsD; slopes range from 8-25%). Matapeake and Sassafras, generally, have few limitations for development. The steeply sloping Collington soil mapping unit is considered unsuitable for development and should be avoided.

According to the Statewide Wetland Mapping Project (SWMP) mapping project, palustrine forested riparian wetlands were mapped along the northern boundary of subject parcel.

Kohl South: Matapeake, Woodstown, and Fallsington were mapped on subject parcel. 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. Fallsington soils should be avoided.

Palustrine emergent riparian wetlands were mapped on subject parcel. The palustrine emergent wetlands were mapped (southeastern boundary of the parcel) along the uppermost reach of an unnamed (or name unknown) headwater tributary draining to the Appoquinimink River.

Spring Arbor II: Matapeake, Sassafras, Fallsington, and Johnston soils. Matapeake and Sassafras are well drained upland soils that, generally, have few limitations for development. Some of the Sassafras soil mapping units are steeply sloping (>10% slope) and should be avoided. Fallsington is a poorly drained wetland associated (hydric) soil that has severe limitations for development. Johnston is a very poorly drained wetland associated (hydric) floodplain soil that has severe limitations for development. Fallsington and Johnston soil mapping units should be avoided.

According to the Statewide Wetland Mapping Project (SWMP) mapping project, palustrine forested riparian wetlands bound the western, northern, and southern portions of subject parcel.

The applicant should also be reminded to avoid construction/filling activities in those areas containing wetlands or wetland associated hydric soils as they are subject to regulatory jurisdiction under Federal 404 provisions of the Clean Water Act. A site-specific field wetlands delineation using the methodology described in the 1987 United States Army Corps of Engineers (USACE) manual is only acceptable basis for making a jurisdictional wetland determination for nontidal wetlands in Delaware.

The applicant is forewarned that the US Army Corps of Engineers views the use of the National Wetlands Inventory (NWI) mapping or the Statewide Wetlands Mapping Project (SWMP) mapping as an unacceptable substitute for a field-based jurisdictional wetland delineation (i.e., 1987 USACE manual). To ensure compliance with said USACE regulatory requirements, it is strongly recommended that a field wetlands delineation using the above-referenced methodology be performed on this parcel before commencing any construction activities.

It is further recommended that the US Army Corps be given the opportunity to officially approve the completed delineation. In circumstances where the applicant or applicant's consultant delineates what they believe are nonjurisdictional isolated (SWANCC) wetlands, the Corps of Engineers must be contacted to evaluate and assess the

jurisdictional validity of such a delineation. In other words, the final jurisdictional authority for making isolated wetlands determinations ultimately rests with the USACE, not a privately paid wetlands consultant. The USACE can be reached by phone at 302-736-9763.

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 Management Program (DCMP) Section. Each of these certifications represents a separate permitting process.

Please be advised that nationwide permits have been suspended in Delaware and are pending further coordination with the Corps. Therefore, contrary to past practices, Coastal Zone Management approval can no longer be assumed. Individual certifications must be granted from the DCMP office for each project intending to utilize a Nationwide Permit. For more information on the Federal Consistency process, please contact the DCMP office at 302-739-9283.

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.

Based on a review of existing buffer research by Castelle et al. (1994), an adequately sized buffer that effectively protects wetlands and streams – in most circumstances – is about 100 feet in width. In recognition of this research and the need to protect water quality, DNREC's Watershed Assessment Section recommends that the applicant maintain/establish a minimum 100-foot upland buffer (planted in native vegetation) from the landward edge of all wetlands and water bodies (including all ditches).

Drainage and Stormwater Management

As of April 11, 2005, stormwater best management practices must also consider water quality as well as quantity in impaired water bodies.

The following comments are for the **Spring Arbor II** project (2007-10-10), and the **Poole** Property (2007-10-11). The Spring Arbor and Poole projects are located adjacent to Sandy Branch which is a headwater stream in the Chesapeake Bay watershed. The Chesapeake Bay has been degraded by nutrients and bacteria. The State of Delaware has signed on to a regional agreement to reduce water quality impacts in the Chesapeake Bay

and its watershed by approximately 47% and 44% for nitrogen and phosphorus respectively. Protection of headwater streams can have a significant impact on downstream water quality and should be a priority.

If you have any questions about Delaware's Chesapeake Bay program goals and strategy, please contact Jennifer Volk, DNREC Watershed Assessment Section, 302-739-9939.

The combined total acreage for these projects is 103.59 acres, which is currently undeveloped. Based on the information provided in the PLUS applications, 49.83 of those acres (48.1%) will be impervious. When these projects are evaluated together along with plans for the 301 project, and other approved and potential projects in the immediate vicinity, it is easy to see the potential negative impacts on downstream water quality and drainage. According to the Center for Watershed Protection (www.cwp.org), 20% impervious area is a critical threshold for water quality.

Both sites have identified a "wooded ravine" – Sandy Branch – as the anticipated outlet which may have significant impact on downstream drainage. DNREC strongly encourages the applicant to manage stormwater using a regional approach – optimally, in coordination with DelDOT and the Town of Middletown. At the least, the applicant should manage drainage and stormwater using all Westtown-related parcels.

Kohl South: This project is located in the Appoquinimink Watershed, which has been degraded by nutrients and bacteria. A total maximum daily load (TMDL) has been established to reduce nutrients in the Appoquinimink River and its watershed.

If you have any questions about the Appoquinimink Watershed strategy to reduce nutrients please contact Sara Wozniak at the Appoquinimink River Association, 302-382-0335.

Based on the information provided in the PLUS application, 77.25 of the project acreage (75%) will be impervious. Once again, when this project is evaluated along with plans for the US 301 project and other approved and potential projects in the immediate vicinity, potential negative impacts on downstream water quality and drainage become clear.

All projects are proposing wet ponds or wet ponds and infiltration to treat stormwater. Because of the parcels' location in an impaired watershed and the amount of impervious surface, the applicants should incorporate more green-technology best management practices and low impact development practices to reduce stormwater flow and meet water quality goals for the Chesapeake Bay and Appoquinimink Watershed.

The DNREC Sediment and Stormwater Program ensures sediment and erosion control plans and stormwater plans comply with local land use ordinances and policies - including the siting of stormwater management facilities. However, they do not support placement in resource protection areas or removal of trees for the sole purpose of placement of a stormwater management facility/practice.

A detailed sediment and stormwater plan will be required prior to any land disturbing activity taking place on the site. Because the Sediment and Stormwater Program is in the process of revising its state regulations it is a good idea to contact the reviewing agency to schedule a pre-application meeting to discuss the sediment and erosion control and stormwater management components of the plan as soon as practicable. The site topography, soils mapping, pre and post development runoff, and proposed method(s) and location(s) of stormwater management should be brought to the meeting for discussion. The plan review and approval as well as construction inspection will be coordinated through Town of Middletown.

Wildlife Habitat

Rare Species. DNREC has not surveyed the project area, therefore it is unknown if there are state-rare or federally listed plants, animals or natural communities at or adjacent to this project site that would be affected by project activities.

Bog Turtle. On the **Poole** and **Spring Arbor II** parcels, a review of the database has revealed that there may be suitable habitat for the federally listed bog turtle (*Glyptemys muhlenbergii*) associated with wetlands along the tributary to Sandy Branch. This includes the part of the parcel to be developed and the 'remaining lands of Poole Property'. It is standard procedure to require Phase I surveys for bog turtle habitat if project activities are within 300ft of potential habitat or if changes to hydrology are expected. To ensure that the project will not impact bog turtles or their habitat, Phase I surveys should be completed on any wetlands within 300ft of project boundaries. Biologists associated with our program have not conducted surveys. If surveys have already been completed, please forward a copy of the report to Holly Niederriter, Natural Heritage and Endangered Species Program.

Please note that a Delaware-approved bog turtle surveyor must be used to conduct the surveys. Phase I surveys can be conducted any time of year when snow cover is not present. If potential habitat is found, however, please note there is a time of year restriction during which Phase II surveys for bog turtles must be conducted.

If potential bog turtle habitat is found during Phase I surveys, you are required to either:

- 1) Completely avoid all direct and indirect project impacts to the wetland, in consultation with the U.S. Fish and Wildlife Service and Delaware Division of Fish and Wildlife; or
- 2) Have Phase II surveys conducted to determine if bog turtles are present. In accordance with Delaware's bog turtle site survey procedures, surveys must be conducted by a State-approved bog turtle surveyor between April 15 and June 15.

Bald Eagle Nest. There is an active Bald Eagle Nest on a property adjacent to **Kohl South**. Currently, this project is not within the protection zones of the nest and there are no state or federal requirements. However, the applicant should be aware that the State is in the process of drafting a more stringent level of protection that would reinstate the previous protection zones that were afforded prior to the delisting of the Bald Eagle. This would include protection zones that span a 750ft and 1320ft radius around the nest. Features, in approximately the southern quarter of the site plan, would fall within these protection zones. Depending on the timeline of the project and the timeline of the new protection level, this project may or may not be impacted. A more thorough explanation of the change is below:

- **Current Federal Status.** On June 29th, 2007 the Bald Eagle (*Haliaeetus leucocephalus*) was de-listed from the Endangered Species list by the U.S. Fish and Wildlife Service (USFWS). Although removed from the Endangered Species list, they are still protected by the federal Bald and Golden Eagle Protection Act. National guidelines are in place to maintain protection of this species. These guidelines were drafted on a national level, so regional or local needs for greater protection of certain eagle populations are not necessarily addressed by these guidelines.

Typically, nesting pairs return to the same nest year after year. The tree that contains the nest is protected and there are protection zones established around the nest (please note that the zone distances provided for by current, post de-listing, federal guidelines are considered insufficient by the State for protection of the Bald Eagle population in Delaware). The protection zones are based on research which determined the level of disturbance Eagles will tolerate before they abandon the nest, eggs or chicks. Also, time of year restrictions during the active nesting period (December 15 to July 1) can serve to protect this species from disturbance. If a nest is abandoned, it is still protected for five years from the last year it was used. Determinations of allowable activities within the protection zones are evaluated on a case-by-case basis.

Questions can be directed to Craig Koppie, endangered species biologist with the U.S. Fish and Wildlife Service, at (410) 573-4534.

- **State Status.** Given the landscape context and vulnerability of Delaware nesting sites, the current (since de-listing) protection zone distances provided for in the national guidelines are insufficient for protecting the Bald Eagle population from disturbance in Delaware. For the 2007 nesting season, 23 out of 43 active nests failed to produce young. Although federally de-listed, the population level still needs to be maintained otherwise this species could end up back on the Endangered Species list. Therefore, protecting each nesting site from disturbance is extremely important.

Title 7 of the Delaware Code, Chapter 1, provides for the protection of Bald Eagles, their nests, eggs, young, and the tree with the nest. Habitat surrounding the nest site is not provided protection by this statute. Therefore, the state is currently in the process of drafting a more stringent level of protection, similar to that afforded by the federal Endangered Species Act prior to de-listing. It is unknown when this will take affect as it has to go through a process prior to being implemented.

Questions can be directed to Karen Bennett, Natural Heritage and Endangered Species Program Manager, at (302) 739-9124.

Nuisance Geese. If wet ponds are constructed at **Spring Arbor II**, measures should be taken to discourage high concentrations of 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 plantings of tall grasses, native wildflowers, shrubs, and trees at the edge and within a buffer area (10-30ft) 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. At this time, we do not recommend using monofilament grids due to the potential for birds and other wildlife to become entangled if the grids are not properly installed and maintained.

Open Space and Forest

To maximize the existing buffering capacity and wildlife habitat on site, it is recommended that lot lines and other infrastructure (such as storm water management ponds) be pulled out of the forest and that areas of community open space be designated along the forested/riparian areas. Doing so will accomplish two things: it will preserve the buffers and will satisfy DNREC's request for 100-foot riparian/wetland buffers, and it will create recreational opportunities for residents by allowing them access to and views of the forest and stream.

The developer is strongly urged to consider alternatives to mowed grass within community open space areas, especially along wetland buffers/stormwater management facilities. Mowing and other maintenance costs from lawn areas can become a substantial burden for community maintenance associations. There may be areas within the development that are appropriate for warm or cool season grasses. The maintenance costs associated with meadow type grasses are much lower than those of lawn grasses, and provide food and habitat for birds and other wildlife and can help reduce non-point source pollution.

The developer is encouraged to review "Community Spaces, Natural Places: A guide to restoration, management, and maintenance of community open space". This document provides a reference of practical and successful open space management techniques that emphasize natural landscape alternatives other than turf grass management. The guidebook is available online at:

<http://www.dnrec.state.de.us/dnrec2000/Divisions/Soil/dcmp/>.

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.

Water Supply

The information provided indicates that The Town of Middletown/Artesian Water Company will provide well water to the proposed projects through a central public water system. DNREC files reflect that The Town of Middletown/Artesian Water Company 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 ft. 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.

On the **Kohl South** parcel, potential contamination sources do exist in the area, and any well permit applications will undergo a detailed review that may increase turnaround time and may require site specific conditions/recommendations. In this case there is: a Groundwater Management Zone B -1 named Von Croy located on the Southwest part of the property within 1000' of the proposed project.

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

Air Quality

Spring Arbor II. Once complete, vehicle emissions associated with this project are estimated to be 8.9 tons (17,804.8 pounds) per year of VOC (volatile organic compounds), 7.4 tons (14,741.2 pounds) per year of NOx (nitrogen oxides), 5.4 tons (10,876.3 pounds) per year of SO2 (sulfur dioxide), 0.5 ton (968.2 pounds) per year of fine particulates and 744.7 tons (1,489,348.0 pounds) per year of CO2 (carbon dioxide)

Emissions from area sources associated with this project are estimated to be 3.6 tons (7,181.5 pounds) per year of VOC (volatile organic compounds), 0.4 ton (790.2 pounds) per year of NOx (nitrogen oxides), 0.3 ton (655.7 pounds) per year of SO2 (sulfur dioxide), 0.4 ton (846.2 pounds) per year of fine particulates and 14.6 tons (29,112.1 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 1.4 tons (2,846.2 pounds) per year of NOx (nitrogen oxides), 4.9 tons (9,899.9

pounds) per year of SO₂ (sulfur dioxide) and 730.1 tons (1,460,235.8 pounds) per year of CO₂ (carbon dioxide).

Spring Arbor II

	VOC	NO _x	SO ₂	PM _{2.5}	CO ₂
Mobile	8.9 tons	7.4 tons	5.4 tons	0.5 tons	744.7 tons
Residential	3.6 tons	0.4 tons	0.3 tons	0.4 tons	14.5 tons
Electrical Power	1.4 tons	4.9 tons	0.3 tons	0.4 tons	14.6 tons
TOTAL	13.9 tons	12.7 tons	6.0 tons	1.3 tons	773.8

For this project, the electrical usage via electric power plant generation alone totaled to produce an additional 1.4 tons of nitrogen oxides per year and 4.9 tons of sulfur dioxide per year.

There are other sources of air emissions not included in the estimates above, but are indirectly caused by the project. They are:

- Emissions created by businesses that provide services to the increased population drawn to the development area (dry cleaners, auto body repair shops, gas stations, trash pickup, wastewater treatment, etc.);
- Emissions associated with the construction of the project must be considered, including traffic generation of automobiles and trucks working or delivering products at the site, as well as site preparation, earth moving activities, road paving and other miscellaneous air emissions.

A significant means of mitigating this impact would be 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 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 photovoltaic 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.

If you have any questions please contact Phil Wheeler, Dave Fees or Ron Amirikian at Air Quality Management (302) 739-4791.

Miscellaneous

Leaking Underground Storage Tank. There is one inactive LUST site(s) located near the proposed **Poole** project (Monryst Truck Stop, Facility # 3-000280, Project # N9709136). No environmental impact is expected from the above inactive/active LUST site(s). However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

State Fire Marshal’s Office – Contact: John Rudd 302-323-5365

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):

- a. **Fire Protection Water Requirements:**
 - 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.

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

b. 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 thoroughfare 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.

c. Gas Piping and System Information:

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

d. 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”
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Townhouse 2-hr separation wall details shall be shown on site plans
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded

from our website: www.statefiremarshal.delaware.gov, 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 project. The project is within the Town of Middletown, and the *Strategies for State Policies and Spending* encourages environmentally responsible development in Investment Level 3 areas.

A portion of the site is located within an area designated as having “excellent” ground-water recharge potential. DNREC has mapped all ground-water recharge-potential recharge areas for the state, and an “excellent” rating designates an area as having important groundwater recharge qualities.

Senate Bill 119, enacted by the 141st General Assembly in June of 2001, requires the counties and municipalities with over 2,000 people to adopt as part of the update and implementation of their 2007 comprehensive land use plans, areas delineating excellent ground-water recharge potential areas. Furthermore, the counties and municipalities are required to adopt regulations by December 31, 2007 governing land uses within those areas to preserve ground-water quality and quantity.

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

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. Please feel free to contact the Delaware Forest Serve at (302) 698-4500 for more information.

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.

Department of Education – Contact: John Marinucci 735-4055

This proposed development is in the Appoquinimink School District. DOE offers the following comments on behalf of the Appoquinimink School District. Because this development is planned to be a deed-restricted active adult community, no further comments are tendered by DOE.

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 Middletown