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January 9, 2007

Kent County
Department of Planning Services
555 Bay Road
Dover, Delaware 19901

Attn: Michael Petit De Mange

Re: PLUS Response
Reed Plantation Acres

Dear Mr. Petit De Mange:

This letter is in response to comments received from the State Planning Coordination dated December 23, 2005. We offer the following item-by-item responses for your review.

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 2 and 3 according to the Strategies for State Policies and Spending. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. 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. State investments will support growth in these areas. Our office has no objections to the proposed development of this project in accordance with the relevant County codes and ordinances.*

Street Design and Transportation

- The plan proposes a site entrance that will require the demolition of the historic Jehu Reed House. The site entrance was designed to accommodate the best engineering*

solution based on the planned interchange improvements, and to align the entrance with Bowers Beach road. At the PLUS meeting we discussed redesigning the entrance to preserve this historic property. It is not impossible to redesign the entrance to save the house, but there are many issues that will surround such a redesign (additional right of way, reengineering, safety considerations etc). Please see the attached supplemental information from DeIDOT regarding this issue.

- The response to item 41 on the PLUS application indicates that the project's road frontage is not subject to the Corridor Capacity Preservation Program. In fact, it is subject to the Program and the Program is part of the context for the interchange. Central to that program is the concept of preserving capacity by managing access. While the site plan will receive further review, preliminarily DeIDOT anticipates limiting access to a single point, Reed Plantation Road, to serve both the residential and the commercial uses proposed. When the interchange is built, the shopping center will front on a service road, so the proposed access would probably be acceptable then.*
- The reduced right-of-way streets, or alleys, intersecting Spruilltown Road and Waterwheel Road should be aligned across from each other, not staggered, and the proposed dead ends should be connected to the streets, to allow for better circulation and security.*
- As drawn, the 90-degree turn with knuckle on Bella Drive does not meet minimum horizontal radius requirements. The knuckle may remain, but the radius must be increased to meet the regulations.*
- The two roundabouts proposed should be designed using a 150' inscribed circle radius and should include splitter islands.*
- DeIDOT recommends that the loop consisting of Storehouse Drive and Swallowtail Drive be redesigned.*

Natural and Cultural Resources

- The southern edge, southwestern section and a section in the northeast of the development area is proposed to be single family home lots and some open space. If possible, the amount of open space in this area should be increased to decrease the amount of excellent recharge area that is impacted by development. Currently the larger open space areas are located away from the excellent recharge areas. This should be changed.*
- There are known drainage problems on the east side of U. S. Route 113 on both sides of Bowers Beach Road. The Drainage Program requests the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or*

create any off site drainage problems downstream by the release of on site storm water.

- *According to the application, the wooded area (5.99 acres) is going to be left mostly intact. This is preferred as it is part of a larger forest block. Larger, connected areas are more beneficial to wildlife than small disconnected areas. If minimal clearing is necessary, it is recommended that clearing not occur April 1st to July 31st to reduce impacts to nesting birds and other wildlife species that utilize forests for breeding. Larger, mature trees should be left intact.*
 - *This parcel contains the Jehu Reed House (K-137), which is listed in the National Register of Historic Places. The DHCA is not in favor of the demolition of a National Register-listed property, and they request that the developer and the county seriously examine the options for maintaining the building within this development*
- **The developer thanks the Office of State Planning Coordination for the executive summary and will comment on these items as they appear in complete listing.**

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

Office of State Planning Coordination - Contact: David Edgel 739-3090

This project is located in Investment Levels 2 and 3 according to the Strategies for State Policies and Spending. This site is also located in the Kent County Growth Zone. Investment Level 2 reflects areas where growth is anticipated by local, county, and State plans in the near term future. 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. State investments will support growth in these areas. Our office has no objections to the proposed development of this project in accordance with the relevant County codes and ordinances.

The plan proposes a site entrance that will require the demolition of the historic Jehu Reed House. The site entrance was designed to accommodate the best engineering solution based on the planned interchange improvements, and to align the entrance with Bowers Beach road. At the PLUS meeting we discussed redesigning the entrance to preserve this historic property. It is not impossible to redesign the entrance to save the house, but there are many issues that will surround such a redesign (additional right of way, reengineering, safety considerations etc). Please see the attached supplemental information from DeIDOT regarding this issue.

- **The developer acknowledges the comments and concerns mentioned above and is aware of the fact that this property falls within the Kent County Growth Zone and within Levels II and III Investment Area. The developer has decided to keep the location of entrance at the designed location per the DeIDOT memo dated December 8, 2005, in order to tie into the existing Bowers Beach Road Traffic Signal.**

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

This parcel contains the Jehu Reed House (K-137), which is listed in the National Register of Historic Places, and a mid-20th-c. commercial building (K-7349). There is may be surviving archaeological resources associated with the Reed House. There is only a low potential for prehistoric archaeological sites in this area. There are a number of mid-20th-c. commercial buildings and houses immediately across Rt. 113 and to the north of this parcel.

- **The developer would like to thank you for the historical information pertaining to this site. If prehistoric archeological sites are discovered during construction we will contact your department.**

Small, rural, family cemeteries often are found in relation to historic farm complexes, usually a good distance from the house. The developer should be aware of Delaware's Unmarked Human Remains Act of 1987, which governs the discovery and disposition of such remains. The unexpected discovery of unmarked human remains during construction can result in significant delays while the process is carried out. The DHCA will be happy to discuss these issues with the developer; the contact person for this program is Faye Stocum, 302-736-7400.

- **If unmarked human remains are discovered on this site during construction we will contact your department.**

The DHCA is not in favor of the demolition of a National Register-listed property, and they request that the developer and the county seriously examine the options for maintaining the building within this development. There are federal, state, and county tax incentives for the rehabilitation of listed properties. The contact person in this office for the federal and state programs is Joan Larrivee, 302-736-7400. The conversion of the Reed House to a commercial store or office is an opportunity to generate some positive public relations for the development by its preservation, and to provide a focal point for a development that is after all named after this house. There has been some recordation of the Jehu Reed House, but if it will be demolished, they would like the opportunity to examine the buildings and make sure they have complete information on the house and any outbuildings remaining. In addition, the DHCA would like the opportunity to examine the yard areas for any archaeological remains.

- **As mentioned previously, the developer has decided to keep the location of entrance at the designed location per the reasons stated in the DelDOT memo dated December 8, 2005, in order to tie into the existing Bowers Beach Road Traffic Signal. The developer also acknowledges the request of the DHCA to examine the buildings and document the site prior to demolition.**

Department of Transportation - Contact: Bill Brockenbrough 760-2109

- 1) *A traffic impact study (TIS) was scoped for this project under the name "Skeeter Neck Land Development Company" on October 21, 2004, and the completed report was sent to DeIDOT for review and comment on July 28, 2005. DeIDOT expects to complete their review and comment to the County on the results within the next 60 days.*
- 2) *A significant factor in those recommendations will be DeIDOT's planned Route 1 interchange at Little Heaven. This interchange will directly affect access to the subject development and DeIDOT's plans for it are suspended pending a resolution of our present funding issues.*
- 3) *The response to item 41 on the PLUS application indicates that the project's road frontage is not subject to the Corridor Capacity Preservation Program. In fact, it is subject to the Program and the Program is part of the context for the interchange just mentioned. Central to that program is the concept of preserving capacity by managing access. While the site plan will receive further review, preliminarily DeIDOT anticipates limiting access to a single point, Reed Plantation Road, to serve both the residential and the commercial uses proposed. When the interchange is built, the shopping center will front on a service road, so the proposed access would probably be acceptable then.*
- 4) *Route 1 is classified as a principle arterial. DeIDOT's policy regarding principle arterials is to require dedication of sufficient land to provide a minimum right-of-way width of 50' from the inside edge of travelway on a divided highway. Therefore we will require right-of-way dedication along the frontage to provide any additional width needed from this project.*
- 5) *The reduced right-of-way streets, or alleys, intersecting Spruilltown Road and Waterwheel Road should be aligned across from each other, not staggered, and the proposed dead ends should be connected to the streets, to allow for better circulation and security.*
- 6) *As drawn, the 90-degree turn with knuckle on Bella Drive does not meet minimum horizontal radius requirements. The knuckle may remain, but the radius must be increased to meet the regulations.*
- 7) *The two roundabouts proposed should be designed using a 150' inscribed circle radius and should include splitter islands.*
- 8) *DeIDOT commends the developer for providing stub streets to the Hoffman Property (Tax Parcel SM-00-122.00-01-30) and one of the Webb Properties (Tax Parcel SM-00-*

122.00-02-31.00) and what appears to be an easement to the Rutledge Property (Tax Parcel SM-00-122.00-01-28.00). They recommend that you add further stub streets for connections to the Mensing Property (Tax Parcel SM-00-122.00-01-32.00), the Caulk Property (Tax Parcel SM-00-122.00-02-37.00), the other Webb Property (SM-00-122.00-02-31.00) and Govan Drive in Ocean Drive Manor. These stub streets and those discussed in Comment 9 below will serve an important function in that they will allow residents of the block bounded by Route 1, US Route 113A, Buffalo Road (Kent Road 376) and Barratts Chapel Road (Kent Road 371) to travel within that block without traveling the roads just mentioned. Such internal trips are more direct for those making them and by being made internally, they reduce congestion on the roads bordering the block.

Although it was not discussed at the PLUS meeting, this block is relatively large and for that reason it would be appropriate to develop a system of collector streets within it. DeIDOT will explore the development of such a system as they continue their review of the plans for this development and others in the block.

- 9) The developers of the Caulk Property just mentioned propose three stub streets to the subject development: an east-west one near Swallowtail Drive and two north-south ones to the finger of wooded open space at the west edge of the property. Because the relevant portions of the Caulk Property may be wet, there is some question as to whether any of these streets can be built. However, if they can be built, DeIDOT recommends as follows. A tee intersection should be created on Swallowtail Drive for a connection with the east-west street from the Caulk Property. Rights-of-way should be provided through the open space for the extension of the north-south streets from the Caulk Property to the Mensing Property.*
- 10) DeIDOT recommends that the loop consisting of Storehouse Drive and Swallowtail Drive be redesigned. As proposed, the plan would create a row of houses on each street facing a narrow strip of open space. It seems likely that the land on the other side of that strip will be developed one day, leaving the residents of Storehouse Drive and Swallowtail Drive facing the backyards of other houses.*
- 11) The developer's site engineer should contact Mr. Brad Herb, the project manager for Kent County, regarding specific requirements for streets and access. He may be reached at (302) 266-9600.*
- 12) At the PLUS meeting, the representatives of Kent County and the Bureau of Archaeology and Historic Preservation asked the developer and DeIDOT to address the feasibility of moving the site access north to save the Jehu Reed house, which is located opposite Bowers Beach Road, directly in the path of Reed Plantation Road. DeIDOT will forward comments in this regard separately as soon as they are ready.*

- **The developer acknowledges the comments and concerns mentioned above and will design this site to meet the above mentioned comments and all DelDOT regulations.**

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

Soils

Based on the Kent County soil survey Sassafras, Woodstown, and Fallsington were mapped on subject parcel. Sassafras is a well-drained upland soil that, generally, has few limitations for development. Woodstown is a moderately well-drained soil of low-lying uplands that has moderate limitations for development.

- **The developer acknowledges that the site is in the vicinity of Sassafras, Woodstown, and Fallington soils. The developer is also aware of the engineering characteristics of these soils and will incorporate this knowledge into the design of the site. The developer will develop this site in accordance with all applicable Regulations of the Department of Natural Resources and Environmental Control.**

Impervious Cover

The Watershed Assessment Section feels that applicant should reduce imperviousness to the greatest degree practicable. Based on the submitted application, this development will render approximately 36% of this parcel's surface area as impervious. The Watershed Assessment Section believes that this amount of surface imperviousness is excessive and should be reduced. Use of pervious paving materials in lieu of asphalt or concrete and significant efforts to increase forest cover via tree preservation/plantings are examples of practical BMPs that could easily be implemented to reduce surface imperviousness. Research has consistently shown that once a watershed exceeds a threshold of 10 percent imperviousness, water and habitat quality irreversibly decline.

- **The developer acknowledges the importance of using best management practices (BMP's) in the design of this site and will do so in order to mitigate any impact upon the water and habitat quality of the Murderkill River watershed.**

TMDLs

With the adoption of Total Maximum Daily Loads (TMDLs) as a "nutrient-runoff-mitigation strategy" for reducing nutrients in the Murderkill River watershed, reduction of nitrogen and phosphorus loading will be mandatory. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited water body" can assimilate and still meet water quality standards to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. Nutrient reductions prescribed under TMDLs are assigned to those watersheds or basins on the basis of recognized water quality impairments. In the Murderkill watershed, the primary source of water quality impairment is associated with

nutrient runoff from agricultural and/or residential development. In order to mitigate the aforementioned impairments, a TMDL reduction level of 50 and 30 percent will be required for nitrogen and phosphorus, respectively. Documentation of the compliance with post-development TMDL nutrient load reductions will be assessed via nutrient budget protocol. The nutrient budget protocol is a computer-based model that quantifies post-development nutrient loading under a variety of land use scenarios in combination with a variety (or absence) of BMP types and intensities, and compares this loading rate with a predevelopment land-use loading rate -the difference in these calculated loading rates determines whether the project meets the acceptable TMDL reduction requirements. DNREC requests that the applicant obtain this nutrient budget protocol to calculate whether their development meets the TMDL nutrient reductions. Please contact Lyle Jones at 739-9939 for further information about obtaining this protocol.

- **The developer acknowledges the requirement of reducing nutrient runoff and the effects it has on the environment and will meet all State and local requirements.**

Water Resource Protection Areas

The DNREC Water Supply Section has determined that the southern edge, southwestern section and a section in the northeast of the proposed development falls within an area of excellent groundwater recharge (see following map and attached map).

The proposed development would change the total impervious cover from .08% to approximately 36% in proposed development area. The proposed development area impacts the excellent recharge area. The numbers were provided by the developer on the PLUS application.

The southern edge, southwestern section and a section in the northeast of the development area is proposed to be single family home lots and some open space. If possible, the amount of open space in this area should be increased to decrease the amount of excellent recharge area that is impacted by development. Currently the larger open space areas are located away from the excellent recharge areas. This should be changed.

DNREC Water Supply Section recommends that that portion of the new development within the excellent recharge area not exceed 20% impervious cover. Further, some allowance for augmenting ground-water recharge should be considered if the impervious cover exceeds 20% but is less than 50% of that portion of the parcel within this area.

For more information refer to the Final [Source Water Protection Guidance Manual for the Local Governments of Delaware](#)

<http://www.wr.udel.edu/swaphome/phase2/SWPguidancemanual.html>

and

[Ground-Water Recharge Design Methodology](#)

http://www.wr.udel.edu/swaphome/phase2/Publications/swapp_manual_final/swapp_guidance_manual_supp_1_2005_05_02.pdf.

- **The developer acknowledges the recommendation to keep the amount of impervious cover within the excellent ground-water recharge area below 20%.**

Water Supply

The project information sheets state water will be provided to the project by Artesian Water Company via a central water system. DNREC records indicate that the project is located within the public water service area granted to Artesian Water Company under Certificate of Public Convenience and Necessity 04-CPCN-17.

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.

- **The developer acknowledges that a dewatering well construction permit must be obtained should dewatering be needed. The developer also acknowledges that a water allocation permit may be required should the site exceed the above mentioned pumping rate.**

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.

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.

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

- **The developer acknowledges that all well permit applications must be prepared and signed by licensed water well constructors and only licensed well drillers may construct the wells. The developer also acknowledges the recommendation to schedule these events accordingly.**

Sediment and Erosion Control/Stormwater Management Requirements:

- 1. Land disturbing activities in excess of 5,000 square feet are regulated under the Delaware Sediment and Stormwater Regulations. A detailed sediment and stormwater*

management plan must be reviewed and approved by the Kent Conservation District prior to any land disturbing activity (i.e. clearing, grubbing, filling, grading, etc.) taking place. The review fee and a completed Application for a Detailed Plan are due at the time of plan submittal to the Kent Conservation District. Construction inspection fees based on developed area and stormwater facility maintenance inspection fees based on the number of stormwater facilities are due prior to the start of construction. Please refer to the fee schedule for those amounts.

- **The developer will provide a detailed sediment and stormwater management plan to the Kent Conservation District and this plan will be reviewed and approved prior to any land disturbing activities. The developer will follow all applicable rules pertaining to the Delaware Sediment and Stormwater Regulations in the design and execution of this project. The developer also acknowledges the requirements and fees due to the stormwater portion of the project and will comply accordingly.**

- 2. *The following notes must appear on the record plan:*
 - *The Kent Conservation District reserves the right to enter private property for purposes of periodic site inspection.*

 - *The Kent Conservation District reserves the right to add, modify, or delete any erosion or sediment control measure, as it deems necessary.*

 - *A clear statement of defined maintenance responsibility for stormwater management facilities must be provided on the Record Plan.*

- **The above mentioned notes will be included on the Record Plan.**

- 3. *Ease of maintenance must be considered as a site design component and a maintenance set aside area for disposal of sediments removed from the basins during the course of regular maintenance must be shown on the Record Plan for the subdivision.*

- 4. *All drainage ways and storm drains should be contained within drainage easements and clearly shown on the plan to be recorded by Kent County.*

- 5. *A soils investigation supporting the stormwater management facility design is required to determine impacts of the seasonal high groundwater level and soils for any basin design.*

Comments:

1. *The submitted plus plans are showing stormwater basin locations, however the type of basins are unknown; it's not clear where the basins are out falling to. The location of*

the ponds indicate that the outfall pipes will be located within lot lines, this is not desirable but if unavailable the areas that the pipes are located must be designated as open space and shown on the record plans.

- 2. The pond near the front of the site appears it may be designed as a dry pond; a full soils report will be required with boring logs, ground and seasonal high water tables. If the outfall for this pond is directed to route 113 a ditch analysis will need to be performed to verify an adequate outfall exists.*
 - 3. The pre development analysis must include the sump areas within the site that are known to exist, at least one of the sumps is very large and complaints have been made concerning it.*
 - 4. The designer is encouraged to consider the conservation design approach and limit the amount of tree clearing required for the development of the site including the stormwater management facilities shown in the wooded areas.*
 - 5. 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.*
 - 6. 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.*
 - 7. A letter of no objection to re-recording will be provided once the detailed Sediment and Stormwater Management plan has been re-approved.*
 - 8. Proper drainage of developed lots and active open space should be considered in the development of the grading plan for this subdivision.*
 - 9. Based on the site characteristics, a pre-application meeting is suggested to discuss stormwater management and drainage for this site.*
- **The developer concurs with the soils investigation. The developer acknowledges the importance of proper drainage and will consider it in the development of the grading plan. We acknowledge that Kent Conservation District reserves the right to enter and modify any erosion or sediment control on the site. The developer will comply with all applicable state and local laws concerning sediment and erosion control and stormwater management. At the appropriate time, we will schedule a pre-application meeting with the District.**

Drainage

There are known drainage problems on the east side of U. S. Route 113 on both sides of Bowers Beach Road. The Drainage Program requests the engineer take precautions to ensure the project does not hinder any off site drainage upstream of the project or create any off site drainage problems downstream by the release of on site storm water. The Drainage Program requests the engineer check existing downstream ditches and pipes for function and blockages prior to construction. Please notify downstream landowners if there will be a change in the volume of water being released on them.

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

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

- **The developer acknowledges the concerns mentioned above and will take all necessary precautions to prevent upstream or downstream drainage problems. The developer will also provide recorded 15' setback easements on all properties adjoining storm drains and catch basins. In areas where rear yard drainage to the street is applicable, the proposed grading will reflect that. The developer will consider all the restrictions to be added to the deeds to ensure maintenance access.**

Forest Preservation

According to the application, the wooded area (5.99 acres) is going to be left mostly intact. This is preferred as it is part of a larger forest block. Larger, connected areas are more beneficial to wildlife than small disconnected areas. If minimal clearing is necessary, it is recommended that clearing not occur April 1st to July 31st to reduce impacts to nesting birds and other wildlife species that utilize forests for breeding. Larger, mature trees should be left intact.

- **We acknowledge the above mentioned comments. Deforestation will be avoided as much as possible. We are aware that the current design which places the woodland in open space is preferred.**

Open Space

The proposed site plan includes 26.87 acres of open space. Traditional maintenance of open

space in the form of turf grass can be expensive and labor intensive. In areas set aside for open space, the developer is encouraged to consider establishment of meadow-type grasses, particularly along Swallowtail Drive and Storehouse Drive. The developer is also encouraged to establish meadows in open areas surrounding the 2.63 acre stormwater pond along Whitmore Lane and the 5.81 acre stormwater pond behind the Silver Springs Shopping Center. 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 should be placed into a permanent conservation easement or other permanent protection mechanism. Conservation areas should also be demarked to avoid infringement by homeowners.

- **The present design of this site has been updated to cause as little impact on the existing forested areas as possible. Installation of meadow-type grasses will be considered in the design process.**

Potential Hunting Issue

Because part of the project area is part of a larger forest block, legal hunting activities may take place on adjacent properties. Hunting within 100 yards of a dwelling is prohibited and the applicant may want to contact adjacent landowners to determine if this is going to be an issue. In effect, the adjacent landowner will be losing 100 yards of their property for hunting if there is not a buffer between lot lines and the adjacent property line.

- **The developer acknowledges the recommendation to contact adjacent landowners in regards to the potential hunting issues which may arise.**

Nuisance Waterfowl

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

- **The developer acknowledges the potential problems that waterfowl may cause and will utilize BMP's in the design of the stormwater management to avoid any unnecessary complications.**

Recreation

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

It is further recommended that the storm water management pond to the west of the commercial area be redesigned to allow for pedestrians and bicyclists to access the commercial area from the north.

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

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

- **The developer acknowledges the above mentioned comments and would like to point out that sidewalks are shown on the typical road sections on both the 50 and 60 foot right-of-ways. The developer also is redesigning the storm water management pond to provide public and utility access to the commercial area. The developer would also like to add that the site will be designed with all recommendations in mind and will satisfy all applicable regulations.**

Underground Storage Tanks

There are two inactive LUST sites located near the proposed project:
Cain's Furniture, Facility # 1-000475, Project # K94I 1249
Appels Marine, Inc., Facility # 1-000321, Project # K95 10245

There are three active LUST sites located near the proposed project:
Shore Stop #245, Facility # 1-000209, Project # K8706030
William Roop, Facility # 1-000490, Project # K9401002
Del Gas, Facility # 1-000 154, Project # K920 1020

No environmental impact is expected from the above inactive/active LUST sites. However, should any underground storage tank or petroleum contaminated soil be discovered during construction, the Tank Management Branch must be notified as soon as possible. It is not anticipated that any construction specifications would be need to be changed due to petroleum contamination. However, should any unanticipated contamination be encountered and PVC pipe is being utilized, it will need to be changed to ductile steel with nitrile rubber gaskets in the contaminated areas.

- **The developer thanks you for this information and should any unanticipated contamination be encountered, the proper steps will be taken as mentioned above.**

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.

- **The developer acknowledges the above mentioned comment and will minimize as much waste as possible during the construction phase of development.**

Air Quality

Once complete, vehicle emissions associated with this project are estimated to be 19.5 tons (38,986.3 pounds) per year of VOC (volatile organic compounds), 16.1 tons (32,278.1 pounds) per year of NOx (nitrogen oxides), 11.9 tons (23,815.3 pounds) per year of SO2 (sulfur dioxide), 1.1 ton (2,120.0 pounds) per year of fine particulates and 1,630.6 tons (3,261,158.5 pounds) per year of CO2 (carbon dioxide).

Emissions from area sources associated with this project are estimated to be 7.9 tons (15,725.0 pounds) per year of VOC (volatile organic compounds), 0.9 ton (1,730.2 pounds) per year of NOx (nitrogen oxides), 0.7 ton (1,435.8 pounds) per year of SO2 (sulfur dioxide), 0.9 ton (1,852.9 pounds) per year of fine particulates and 31.9 tons (63,745.5 pounds) per year of CO2 (carbon dioxide).

Emissions from electrical power generation associated with this project are estimated to be 3.1 tons (6,232.2 pounds) per year of NOx (nitrogen oxides), 10.8 tons (21,677.4 pounds) per year of

SO2 (sulfur dioxide) and 1,598.7 tons (3,197,413.0 pounds) per year of CO2 (carbon dioxide).

| | I | VOC | NOx | So ₂ | PM _{2.5} | CO ₂ |
|---------------------|---|------|------|-----------------|-------------------|-----------------|
| Mobile | | 19.5 | 16.1 | 11.9 | 1.1 | 1630.6 |
| Residential | | 7.9 | 0.9 | 0.7 | 0.9 | 31.9 |
| Electrical Power | | | 3.1 | 10.8 | | 1598.7 |
| TOTAL | | 27.4 | 20.1 | 23.4 | 2.0 | 3261.2 |

For this project the electrical usage via electric power plant generation alone totaled to produce an additional 3.1 tons of nitrogen oxides per year and 10.8 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. We 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.

- **The developer acknowledges the above mentioned recommendations and will design the subdivision using as much energy saving processes as possible in an environmentally sound design.**

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

These comments are intended for informational use only and do not constitute any type of approval from the Delaware State Fire Marshal's Office. At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the

following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. Fire Protection Water Requirements:

- > *Water distribution system capable of delivering at least 1500 gpm for 2-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Mercantile)*
- > *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. (Townhouses)*
- > *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. (One & Two- Family Dwelling)*
- > *Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.*

b. Fire Protection Features:

- > *All structures over 10,000 Sq. Ft. aggregate will require automatic sprinkler protection installed.*
- > *Buildings greater than 10,000 sq.ft. 3-stories of more or over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.*
- > *Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.*
- > *Show Fire Lanes and Sign Detail as shown in DSFPR*
- > *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 Bay Road must be constructed so fire department apparatus may negotiate it.*
- > *Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.*
- > *Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or*

turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.

- > *The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.*
- > *The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.*

d. Gas Piping and System Information:

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

e. Required Notes:

- > *Provide a note on the final plans submitted for review to read "All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"*
- > *Proposed Use*
- > *Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units*
- > *Square footage of each structure (Total of all Floors)*
- > *National Fire Protection Association (NFPA) Construction Type*
- > *Maximum Height of Buildings (including number of stories)*
- > *Townhouse 2-hr separation wall details shall be shown on site plans*
- > *Note indicating if building is to be sprinklered*
- > *Name of Water Provider*
- > *Letter from Water Provider approving the system layout*
- > *Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered*
- > *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.

- > **The developer acknowledges the above comments and shall comply with all State Fire Marshal regulations.**

Department of Agriculture .Contact: Milton Melendez 698-4500

Neither the Delaware Department of Agriculture nor the Delaware Forest Service has any objections to the Reed Plantation application. The site is located on a long-range designated controlled development area. The Strategies for State Policies and Spending encourages environmentally responsible development in areas within a Growth Level 2/3 Zone. We request

that you consider limiting impervious cover as much as possible when designing this site. This site is a part of a "good recharge" area. DNREC has mapped all ground water potential recharge areas. A "good" rating is the second highest rating and designates an area as having important groundwater recharge qualities. Maintaining pervious cover in "Excellent" and "Good" recharge areas is crucial for the overall environmental health of our state and extremely important to efforts which ensure a safe drinking water supply for future generations. Retention of pervious cover to ensure an adequate future water supply is also important for the future viability of agriculture in the First State. The loss of every acre of land designated as "excellent" and "good" recharge areas adversely impacts the future prospects for agriculture in Delaware.

Right Tree for the Right Place

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

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

Tree Mitigation

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

- **The developer acknowledges the above comments and will comply with all state and local rules and regulations pertaining to agriculture.**

Public Service Commission .Contact: Andrea Maucher 739-4247

Any expansion of natural gas or installation of a closed propane system must fall within

Mr. Michael Petit De Mange
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Pipeline Safety guidelines. Contact: Malak Michael at (302) 739-4247.

- **The developer is aware of this requirement and thanks you for the contact information.**

Delaware State Housing Authority -Contact Jimmy Atkins 739-4263

This proposal is to develop 254 residential units and 90,000 square feet of commercial space on 106 acres located on the west side of US 113 at Little Heaven. According to the State Strategies Map, the proposal is located in Investment Level 2 and 3 areas. DSHA supports this proposal because residents will have proximity to existing services, markets, and employment opportunities. Furthermore, the proposal targets units for first time homebuyers. For informational purposes, the most recent real estate data collected by DSHA, the median home price in Kent County is \$174,015. However, families earning 80% of Kent County's median income only qualify for mortgages of \$147,099. We recommend that some of the units be set-aside at this price level to ensure that working households have access to affordable housing.

- **The developer acknowledges the concerns of the Delaware State Housing Authority.**

The above comments serve as an official response from Davis, Bowen & Friedel, Inc. On behalf of our client, we thank you for your review. If you should have any questions or concerns please contact me at 424-1441.

Sincerely,



W. Zachary Crouch, P.E.
Principal

WZC:dnw

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Enc.

cc: Mrs. Constance C. Holland